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EDITORIAL

Chikungunya fever

KG Mostafa

Chikungunya fever (CHIKF) is a viral disease transmitted to humans by the bite of infected mosquitoes. Chikungunya virus (CHIKV) is a member of the genus Alphavirus, in the family Togaviridae1 . The disease was first described by Marion Robinson and W H R Lumsden in 1955, following an outbreak on the Makonde Plateau, along the border between Tanganyika and Mozambique, in 19522,3. Its name comes from the Makonde language of southern Tanzania and northern Mozambique on the east coast of Africa. In Makonde, chikungunde is said to mean "that which folds up" and refers to the crippling of the joints2 . The virus circulates throughout Africa, with transmission thought to occur mainly between mosquitoes and monkeys1 . Genetic analysis of CHIK viruses have revealed two distinct lineages, one containing all isolates from western Africa and the second comprising all southern and east African strains, as well as isolates from Asia4 . In Asia, virus strains have been isolated in Thailand in 1960, India in 1964, Sri Lanka in 1969, Vietnam in 1975, Myanmar in 1975 and Indonesia in 19825 .CHIKF displays interesting epidemiological profiles: major epidemics appear and disappear cyclically, usually with an inter-epidemic period of 7-8 years and sometimes as long as 20 years5 . It has been estimated that over 180,000 cases have occurred in India since December 20056 . Apart from India, several small countries in the southern Indian Ocean such as the French Reunion Islands, Mauritius and Seychelles have also been reporting large scale outbreaks of CHIKV infection in 20066 . In Sri Lanka, CHIKV has appeared after an interval of 37 years. The severity of the current outbreak can be attributed to the absence of herd immunity in the affected population. After an incubation period of 2-12 days there is a sudden onset of severe headache, high fever (>40°C) with chills, fatigue, muscle pain, joint pain, nausea, vomiting and rash1 . This acute phase lasts 2-3 days. The temperature may remit for 1-2 days, resulting in a "saddle-back" fever curve7 . The arthralgias are polyarticular, migratory, and predominantly affect the small joints of the hands, wrists, ankles and feet, with lesser involvement of larger joints. Pain on movement is worse in the morning, improved by mild exercise and exacerbated by strenuous exercise. Swelling may occur, but fluid accumulation is uncommon7 . In his original report Robinson mentioned fever (100%), arthralgia (100%), myalgia (97%), headache (84%) and diffuse maculopapular rash (33%)2 . Dermatological manifestations observed in a recent outbreak of Chikungunya fever in India include maculopapular rash, nasal blotchy erythema, pigmentation on face and extremities, lichenoid eruption and hyperpigmentation in photodistributed areas, multiple aphthous-like ulcers over

scrotum, crural areas and axilla, lymphoedema (bilateral/unilateral), multiple ecchymotic spots (children), vesiculobullous lesions (infants), subungual haemorrhage and photo urticaria8 . Pedal oedema is observed in many patients, the cause of which remains obscure as it not related to any cardiovascular, renal or hepatic abnormalities8 . "Silent" CHIKV infections do occur but their frequency is not known1 . Acute CHIKF typically lasts a few days to a couple of weeks but some patients have prolonged fatigue lasting several weeks1 . Additionally, some patients have reported incapacitating joint pain or arthritis lasting for weeks or months1 . The prolonged joint pain associated with CHIKV is not typical of dengue1 . The symptoms are most often clinically indistinguishable form those observed in dengue fever6 . Indeed, simultaneous isolation of both dengue and chikungunya from the sera of the same patient have been reported indicating the presence of dual infections9 . Therefore, it is very important to clinically distinguish dengue from CHIKV infection. Unlike dengue, haemorrhagic manifestations are relatively rare and as a rule shock is not observed in CHIKV infection6 . However, a small retrospective study in Bangalore showed serum samples that were clinically referred as dengue haemorrhagic fever (DHF), were negative for dengue but when further tested were positive for chikungunya10. The laboratory investigations and clinical presentations in these cases showed thrombocytopenia and petechial haemorrhage10. Most often chikungunya is a self limiting febrile illness6 . However, neurological complications such as meningoencephalitis have been reported in a small proportion of patients during the first Indian outbreak as well as the recent French Reunion islands outbreaks11,12. Mother to child transmission of CHIKV was recorded during the recent French Reunion islands outbreak12 . CHIKV is highly infective and disabling but is not transmissible between people, being spread by the bite of an infected mosquito. Mosquitoes become infected when they feed on a person infected with CHIKV. Infected mosquitoes can then spread the virus to other humans when they bite1 . CHIKV infection (whether clinical or silent) is thought to confer life-long immunity1 . Aedes aegypti, a household container breeder and aggressive daytime biter, is the primary vector of CHIKV to humans1 . Aedes albopictus may also play a role in human transmission1 . The above mosquitoes are also the vectors for dengue fever (DF). The definitive diagnosis can only be made by laboratory means, but CHIK should be suspected when epidemic disease occurs with the characteristic triad of fever, rash and rheumatic manifestations. Virus isolation is readily accomplished by inoculation of mosquito cell culture, mosquito, mammalian cell culture or suckling mice7 . Viraemia will be present in most patients during the first 48 hours of disease and may be detected as late as day 4 in some patients7 . Virus-specific IgM antibodies are readily detected by capture ELISA in patients recovering from CHIK infection and they persist in excess of 6 months. Haemagglutination inhibition (HI) antibodies appear with the cessation of viraemia. All patients will be positive by day 5 to 7 of illness. Neutralization antibodies parallel HI antibodies7 . No specific antiviral treatment for chikungunya fever is available1 . Treatment is symptomatic. Rest, fluids, and paracetamol may relieve symptoms of

fever and aching. Aspirin should be avoided1 . Movement and mild exercise tend to improve stiffness and morning arthralgia, but heavy exercise may exacerbate rheumatic symptoms. In unresolved arthritis refractory to non-steroidal anti-inflammatory drugs, chloroquine phosphate (250 mg/day) has given promising results7 . No vaccine is available against this virus infection. Prevention is entirely dependent upon taking steps to avoid mosquito bites and elimination of mosquito breeding sites3 . To avoid mosquito bites: • Use insect repellent on exposed skin. • Wear full sleeve clothes and long dresses or pants to cover the limbs. • Have secure screens on windows and doors to keep mosquitoes out. • Use mosquito coils and electric vapour mats during the daytime; • Use mosquito nets to protect babies and others who may rest during the day. Efficacy of such nets can be improved by treating them with permethrin (pyrethroid insecticide). • Curtains (cloth or bamboo) can also be treated with insecticide and hung at windows or doorways, to repel or kill mosquitoes. • Infected persons should be protected from further mosquito exposure (staying indoors and/or under a mosquito net during the first few days of illness) so that they can't contribute to the transmission cycle1 . To prevent mosquito breeding Aedes mosquitoes that transmit chikungunya breed in a wide variety of manmade containers which are common around human dwellings. These containers collect rainwater, and include discarded tyres, flowerpots, old oil drums, animal water troughs, water storage vessels, and plastic food containers. These breeding sites can be eliminated by: • Draining water from coolers, tanks, barrels, drums and buckets, etc. • Emptying coolers when not in use. • Removing from the house all objects, e.g. plant saucers, etc. which have water collected in them • Cooperating with the public health authorities in anti-mosquito measures. CHIKF is generally not fatal. However, in 2005-2006, 200 deaths have been associated with chikungunya on Réunion island and a widespread outbreak in India8 . It is recommended that acute CHIKF be monitored and managed in the same way as DF/DHF.

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Original Article

Clinical Presentation in Gonococcal Urethritis and Antibiotic Sensitivity in Gonorrhea-our experience in Satkhira Medical College Hospital.

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ABSTRACT:

Objective: To see various features of Gononcoccal Urethritis and assess the results of Gram stain and culture tests in cases of Gonorrhea and to see the antibiotic resistance pattern in them, in our local population (Satkhira District Satkhira). Design: Prospective case series. Place and duration of study: Department of Dermatology , Satkhira medical College Hospital , Satkhira , Bangladesh July 2015to December 2016. Materials and methods: The study was carried out in the outpatient dermatology department. It was a prospective study. One hundred clinically suspected patients of Gonococcal urethritis were included in the study. Detailed history including history of sexual contact was taken. General and systemic physical examination was carried out in all the patients. Dermatological examination including examination of external genitalia was also done. In all these patients following investigations were carried out. Urine complete examination ,complete blood counts, pus sample was collected from external urethral meatus by two sterile inoculating loops on to a clean glass slide for Gram staining which was seen under the microscope for the presence of gram-negative diplococci.

Results: A total of 100 patients having urethral discharge and dysuria were studied. All the patients were males. The ages varied from 20 to 40 years, the average being 29.2 years+5.8 years. History of illicit sexual exposure was elicited in 43 (43%) patients. The duration of period of symptoms ranged between 4 and 30 days with a mean of 12.8 days and a median of 12 days. The patients with gonorrhea presented with purulent discharge in 66 (66%) cases, and dysuria in 49 (49%) cases. No case had anal or oral symptoms. Examination showed a reddened external urethral meatus in 53(53%) cases. Eighty seven (87%) cases showed intracellular diplococci on direct microscopy of Gram stained smear. Sixty-two (62%) cases showed growth of gonococci on culture of urethral pus. No case was seen to be HIV positive. Tetracycline resistance was seen in 34(55%) strains. Penicillin resistance was seen in 25 (41%) strains of Neisseria Gonorrhea. Five strains (11.5%) showed resistance to Ciprofloxacin. No resistance was seen with Cephalosporins.

Conclusion: Gram staining and culture for Neisseria Gonorrhea are both useful diagnostic tests for Gonococcal urethritis. Drug resistance of Neisseria Gonorrhea is high with various antibiotics except for Cephalosporins stressing the need for culture based therapy and enthusiastic prevention of Gonorrhea in our society.

Keywords : Gonorrhea; Gram stain; Culture; Urethral discharge

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Introduction

Gonorrhea is a common sexually transmitted disease, which is caused by Neisseria gonorrhea. This is transmitted between individuals by direct, usually sexual contact. It is the second most commonly reported communicable disease, with more than 350,000 cases reported annually [1]. In males the most common manifestation of infection is acute urethritis characterized by abrupt onset of dysuria and a purulent urethral discharge. The symptoms usually appear within 2 to 10 days of infection, but the incubation period is sometimes much longer, and some men never develop symptoms. The incidence of gonorrhea declined significantly in most developed countries during the 1980s, but remains common in some urban centers in the world. It is prevalent in many developing countries. The male: female ratio is 2:1 [2]. Neisseria gonorrhea is highly susceptible to adverse environmental influences such as temperature extremes and drying and it does not survive long outside its natural host, which is man. Infection with Gonorrhea increases the risk of becoming infected with HIV. This is likely due to weakening of the mucosal surface secondary to the Gonorrhea infection [3]. The Gram stain and the culture test are the two standard tests for Gonorrhoea [4]. The Gram stain involves placing a smear of the discharge on a slide where it is stained with Gram stain and examined for Gonococcal diplococci under a microscope. It has high sensitivity and specificity (over 90% in males) for the diagnosis [5]. The culture test is more reliable but takes longer. It involves taking a swab of the discharge, rolling it on to a culture plate and incubating it under special laboratory conditions for 16 to 48 h to let the Gonococci multiply [6]. For the diagnosis of gonorrhea, appropriate sites for specimen collection depend to some extent on the age, sex and sexual practices of the individual and the clinical features of the infection. The commonest sample is pus from genitourinary passage.

If standard culture media are available at the collection site, the specimen is directly inoculated and is placed in an atmosphere containing 5% CO 2 at 37°C. It is then transported to laboratory. Gonococci are fastidious in their growth requirements. Most of the times these are present along with normal flora [7]. The culture media used are, therefore, both enriched and selective. For routine culture chocolate agar base medium of good quality with 9% Saponin lysed horse/sheep blood and inhibitors (Vancomycin to suppress the growth of Gram positive, Colistin to suppress Gram negative organisms, Nystatin to suppress yeast multiplication and Trimethoprim is added to inhibit swarming by Proteus spp.) [8]. Antibiotic treatment is an essential control measure for Gonorrhea. Antibiotic treatment is usually administered as a standard treatment of a single dose of antibiotic. The standard treatment regimen should cure more than 95% of cases. Antibiotic resistance in Neisseria gonorrhea, to agents used for treatment has been a continuing problem. So a surveillance of antibiotic resistance with a change in treatment regimens when resistance occurs in >5% of isolates is recommended. Antimicrobial resistance in Gonorrhea including both chromosomal resistance and plasmid mediated resistance has increased worldwide recently [9].

The aim of the study was to see the pattern of presentation, to assess the results of Gram stain and culture tests in cases of Gonorrhoea in our population and to see the antibiotic resistance pattern of

Tetracyclines, Penicillins, Quinolones and Cephalosporins in them.

Materials and Methods

The study was carried out in the outpatient in Department of Dermatology, Satkhira medical College Hospital , Satkhira , Bangladesh July 2015 to December 2016.. It was a prospective case study. One hundred clinically suspected patients of Gonococcal urethritis were included in the study. Only male patients of all ages were included in the study. Patients who had received systemic treatment for their complaints and those having other inter-current illnesses were excluded from the study. Detailed history of symptoms and history of sexual contact was taken. General and systemic physical examination was carried out in all the patients. Local examination including examination of external genitalia, testis, oral cavity, eyes and anus was also done. In all these patients investigations carried out were urine complete examination and complete blood counts along with ESR were done. Genitalia were cleaned up with normal saline and a slight pressure on penis was exerted to exude a drop of pus at external urethral meatus. The pus was collected by two sterile inoculating loops. One loop was rolled up on a clean glass slide to prepare a thin and homogenous film which was allowed to air dry before it was Gram stained. This was seen under microscope for the presence of Gram-negative diplococci. The other loop was inoculated onto a 1 cm circular area of the chocolate agar plate. The chocolate agar contained Vancomycin and was incubated in an atmosphere of 5% CO 2 at 37°C for 24-48 h. The growths obtained were identified with colony morphology, Gram staining. HIV test was performed in all the patients using Elisa method. The Gonococci isolated were tested for antibiotic sensitivity using modified Kerby buer technique [10]. The antibiotics included Penicillin G, Tetracycline, Cefotaxime, Cefuroxime, Ceftriaxone and Ciprofloxacin. Culture testing was done by growing bacteria on a nutrient plate and then exposing them to known amounts of an antibiotic to determine the bacterial susceptibility to the antibiotic. The results of two types of tests and their merits and demerits were assessed.

Results

A total of 100 patients having urethral discharge were studied. All the patients were males. The age varied from 20 to 40 years, the average being 29.2 years+5.8 years. Majority of patients seen were in the age group of 21-30 years (60%). History of illicit sexual exposure could be elicited in 36 (36%) patients whereas rest of the patients denied it. There was history of solitary sexual exposure in 26 (72.3%) patients and multiple exposures in 10 (27.7%) patients. The duration of symptoms ranged between 4 and 30 days with a mean of 12.8 days and a median of 12 days. The patients with Gonococcal Urethritis presented with purulent discharge (both frank and scanty) in 66 (66%) cases, and dysuria in 49 (49%) cases, 2 (2%) cases had unilateral swelling of testis, 1 (1%) patient had fever and lower abdominal pain, 23 (23%) patients had erythema and swelling at external urethral meatus. No case had anal, eye or oral symptoms. Thirty four (34%) cases had an elevated white blood cell (WBC) count, in the range of 10,000-15,000/ µL. Forty one (41%) cases had elevated erythrocyte sedimentation rate (ESR) in the range of 20-50 mm fall at the end of Ist hour. Eighty seven (87%) cases showed intracellular diplococci on direct

microscopy of Gram stained smear. Sixty-two (62%) cases showed growth of gonococci on culture of urethral pus. No case was seen to be HIV positive. Tetracycline resistance was seen in 34 (55%) strains. Penicillin resistance was seen in 25 (41%) strains of Neisseria Gonorrhea. Five strains (11.5%) showed resistance to Ciprofloxacin. No resistance was seen with Cephalosporins.

Discussion

The duration of symptoms in our study ranged between 4 and 30 days with a mean of 12.8 days and a median of 12 days. Some others studies in this regard have shown duration of symptoms to be 8 days to 2 weeks [8]. Men with Gonococcal urethritis may present with any combination of symptoms [9]. In our study the patients with gonorrhea presented with purulent discharge (both frank and scanty) in 66 (66%) cases, and dysuria in 49 (49%) cases, 2 (2%) cases had unilateral swelling of testis, 1 (1%) patient had fever and lower abdominal pain, 23 (23%) patients had erythema and swelling at external urethral meatus (Table 1). The discharge was mostly present spontaneously at the urethral meatus and in a few cases was elicited by exerting a slight pressure on penis. The discharge was scanty and copious, purulent or muco-purulent in consistency. In another such study discharge was present in 82 percent of cases and dysuria in 53 percent [10]. Unilateral testicular pain and swelling may be the sole presenting complaints of men with epididymitis, with concomitant urethritis often discovered during the history and physical examination as it was seen in 2 (2%) cases in our study. No extra genital symptoms were seen in our study. History of sexual exposure was scarce as it could be elicited only in 36% cases which may be due to considering of illicit sexual contact as a taboo in this part of world. In our study the highest incidence (60%) was found to be in the age group of 21-30 years which is almost similar to certain other studies in this regard. All the cases in our study had urethritis. No case had oral or anal symptoms.

Gender Males
H/O Illicit Sexual Contact 36%
Duration of Symptoms
4-30 days
Mean-12.8 days
Median-12 days
Purulent Discharge 66%
Dysuria 49%
Epididymitis 2%
Fever & Lower abdominal pain 1%
Erythema at External urethral meatus 23%
Elevated WBC count, in the range of 10,000-15,000/μL. 34%
Elevated ESR in the range of 20-50 mm fall at the end of Ist h 41%
Gonococci seen on Gram stain of Smear 87%
Positive Gonococcal Culture 62%

Table 1: Presentation pattern in gonorrhea patients, n=100.

Specific culture of a swab from the site of infection is a criterion standard for diagnosis at all potential sites of Gonococcal infection. In male patients with urethritis, the diagnosis can be made by direct microscopy of stained smears of urethral discharge. Cultures are particularly useful when the clinical

diagnosis is unclear as in asymptomatic males and in females, when a failure of treatment has occurred, when contact tracing is problematic, and when legal questions arise. Following culture of specimens obtained from the genital tract using a highly selective medium, a presumptive diagnosis can be made based on colony morphology, Gram stain and the detection of cytochrome C oxidase. A number of swab
types are suitable for collecting specimens of N. gonococci. These include serum/albumincoated swabs, calcium–alginate swabs and some modern rayon fibretipped swabs. Sterile inoculating loops can also be used. It is always preferable to collect two swabs, one for microscopic examination and the other for culture. If standard culture media are available at the collection site, the specimen can be inoculated at the site and placed in an atmosphere containing 5% CO 2 at 37°C. The inoculated plates can then be transported at a convenient time. In our study the positive Gram stained smears were seen in 87% cases of suspected Gonococcal urethritis. It was easy to perform the test in OPD or on the bedside of the admitted patient. Results were received quickly. The cost of this test was quite low. This test was found to be quite accurate for men but is considered not good in women. It is generally known that only one in two women with gonorrhea have a positive stain. In one study, a Gram stain diagnosed 94 percent of cases in symptomatic men however the sensitivity dropped to 81 percent in asymptomatic subjects. Some other reports have shown that performance of Gram stain in a man is similar to that of culture, with sensitivities of 89 to 94 percent and specificities of 94 to 97%. Thus, in symptomatic men, urethral Gram stain is sensitive, specific, and cost effective.

However, if the Gram stains is negative in an asymptomatic man, additional testing should be performed if Gonorrhea is suspected due to risk factors. Recently developed tests using cycling probe technology, such as examination of urine by PCR, allow diagnosis to be made without the need for culture. However, these tests are costly and culture is essential for surveillance of antimicrobial susceptibility. The positivity of the culture in our study was found to be 62%. Culture test was more difficult to perform than the Gram stain smear and required the patient to be referred to the laboratory as the availability of transport media was sparse and difficult. The culture test was more reliable but required 24-48 h for the results. Over the last decade, strains of Neisseria gonorrhea have been reported to develop high levels of resistance against several antimicrobial agents which have been used previously for the treatment of gonorrhea. Drug resistance to Tetracyclines (55%) and Penicillins (41%) was found to be high in our study. The drug resistance to quinolones although low but was seen in 5 strains (12.5%). This incidence is low as compared to certain Western studies. No resistance to cephalosporins was found which can be considered as the drug of first choice against Gonococcal infection (Table 3). No patient had positive HIV test. However high level of HIV positivity was found in cases of gonorrhea in certain other studies. Khopakar et al. reported 14% positivity rate in all STD cases and Bhushanam et al. 2.3%. CDC's 2015 STD treatment guidelines now recommend only one regimen of dual therapy for the treatment of gonorrhea-the injectable cephalosporin ceftriaxone, plus oral azithromycin . Dual

therapy is recommended to address the potential emergence of gonococcal cephalosporin resistance. A major challenge to monitoring emerging antimicrobial resistance of N. gonorrhoeae is the substantial decline in the use of gonorrhea culture by many clinicians, as well as the reduced capability of many laboratories to perform gonorrhea culture techniques required for antibiotic susceptibility testing. Culture testing is when the bacteria is first grown on a nutrient plate and is then exposed to known amounts of an antibiotic to determine the bacteria's susceptibility to the antibiotic. The decline in culture testing results from an increased use of newer non-culture-based laboratory technology, such as a diagnostic test called the Nucleic Acid Amplification Test (NAAT). Currently, there is no well-studied reliable technology that allows for antibiotic susceptibility testing from non-culture specimens. Increased laboratory culture capacity is needed. CDC recommends that all state and local health department labs maintain or develop the capacity to perform gonorrhea culture.

Drug Sensitivity
Tetracyclines 34 (55%)
Penicillins 25 (41%)
Quinolones 5 (11.5%)
Cephalosporins Nil
Ofloxacin
Table 2: Sensitivity pattern of Neisseria gonorrhoea.

Conclusion

Gram staining and culture for Neisseria gonorrhea are both useful diagnostic tests for Gonococcal urethritis. Drug resistance of Neisseria Gonorrhea is high with Tetracyclines and Penicillins, where as it is mild with Quinolones. No resistance was found with Cephalosporins and ofloxacin.

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Original Article

Clinicopathologic study of ovarian mass.

M M Roshed[1], K H Khan[2], S M Ahsan[3], A Akhter[4], F Hossain[5], M R Khatun[6]

ABSTRACT:

Background: Ovarian masses are common lesions in women across the glob. This is also important for woman in Bangladesh. The incidence of ovarian malignancy ranks only after the carcinoma of cervix and endometrium and it is the 3rd leading cause of cancer death from gynecologic malignancies.

Objective: The aim of the study is to assess the correlation between histopathological examination and clinical findings in making a specific diagnosis and treatment.

Methodology: 110 women with different ages having ovarian mass suspected by clinical findings or ultrasonography were included in this study. Clinical information were obtained by taking history with particular reference to the age, symptoms of ovarian mass and hormone markers. Specimens were collected after surgical resection and processed by paraffin embedding method microscopic examination. The results of this study were calculated by standard statistical formula.

Results: In all of the 110 cases of ovarian masses, histological diagnosis were made by observing morphological characters of the tumour and also by considering relevant clinical information. Out of 85 cases of benign ovarian mass 55 cases (64.71%) within the age range of 20-44 years. Among the 25 cases of malignant ovarian mass 9 cases (36%) were in the age range of 45-54 years and 8 cases (32%) were between the ages of 20-40 years. This study shows that most of the women were married and parous.

Conclusion: It is evident from this study that, correct diagnosis of ovarian masses can be made in majority of cases through careful examination of the routinely stained slides with the aid of proper clinical information. Adequate clinical information, ultrasonogram of lower abdomen and some hormone markers may be helpful in the early diagnosis of ovarian mass.

Index terms: Ovarian mass, histopathology, ovarian tumor.

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Introduction:

Ovarian masses are common gynecological problem in women. Among cancer of the female genital tract, the incidence of ovarian cancer ranks bellows only carcinoma of the cervix and the endometrium1. Ovarian masses progressively getting more importance as it is the most serious disease of the female genital tract. Ovarian cancer is the second

leading cause of death from gynecologic malignancy worldwide and 4th leading cause of cancer death in women. An annual incidence rate is 14/100, 000 2, 3. This high mortality reflects both the frequency of the disease and late stage at which most women with ovarian tumor present There is a striking international variation in the incidence of ovarian masses; with the highest age adjusted rate (15.3/1000,000 in Norway) being five times that of the lowest (3.2/100,000 in Miyagi, Japan4. There are various types of ovarian masses both benign and malignant. The malignant masses are more common in women between the ages of 40 and 65 years6. Two –third of patients present with extensive intra abdominal metastases. Patients with advanced carcinomas usually presents with vague abdominal swelling or discomfort, abdominal bloating, dyspepsia and early satiety, lack of appetite, malaise, urinary frequency and wt change. P/V exam reveals firmness, fixation, nodularity, lack of tenderness, ascitis or cul-de-sac nodules are indicative of malignancy7. From the clinical behavior of the growth of ovarian masses, it is almost impossible to distinguish a benign lesion from its malignant counterpart. So, histopathological examination is the most important and still the best means to confirm the type of tumour and grade of the tumour for further treatment and the prognosis. Thousands of clinicopathologic studies have been performed to find out the aetiological determinant, the relationship of the tumour with age, parity, their incidence and the histological typing8-12. Within this background, it would be relevant to find out the morphologic patterns of ovarian tumors and their possible etiologic factors in the context of Bangladesh.

Materials and methods:

This study was carried out at the department of Pathology, Khulna medical College, Khulna, during the period of January, 2012 to December, 2015. A total of 110 cases of ovarian mass were collected for study. Clinical information were obtained by taking history with particular reference to the age, symptoms of ovarian mass (pain, mass in the lower abdomen , excessive/ irregular per vaginal bleeding, anorexia, weight loss), hormone markers and ultrasonogram findings. Specimens were obtained after surgical resection and were collected in a container containing 10% formalin as a fixative. The specimens were examined with a particular emphasis on size, shape, colour, consistency, presence of capsule or not, cyst contents and appearance of cut surface. All grossed specimens were submitted for routine processing and paraffin embedding. For microscopic examination, routine paraffin sections were stained with hematoxylin and eosin staining method. Routinely stained sections were first examined under low power and then high power magnification. The following points were noted during examination. growth patterns, cellularity type of lining epithelium, any stratification, stromal invasion or any other abnormalities. All the necessary and relevant data were recorded methodically and meticulously as far as possible in clinical proforma. Relevant data were analyzed by standard statistical methods.

Observation and result:

In all of the 110 cases of ovarian masses, histological diagnosis were made on routine H & E stained sections by observing morphological characters of the

tumour and also by considering relevant clinical information. The age distribution of ovarian mass was studied. Out of 85 cases of benign ovarian mass 55 cases (64.71%) within the age range of 20-44 years. Among the 25 cases of malignant ovarian mass 9 cases (36%) were in the age range of 45-54 years and 8 cases (32%) were between the ages of 20-40 years. This study shows that most of the women were married and parous. Only 8 cases were nulliparous women and all of them had benign ovarian mass.

Table -1: Histogenetic distribution of 110 ovarian mass.

Histodiagnosis	No (%)	Benign	Malignant
		No (%)	No (%)
Common epithelial origin	69(62.73)	53(48.18)	16(14.55)
Sex cord stromal origin	8(7.27)	6(5.45)	2(1.82)
Germ cell origin	30(27.27)	26(23.64)	4(3.64)
Germ cell sex cord stormal origin.	1(0.91)		1(0.91)
Metastatic tumour	2(1.82)		2(1.82)
Total	110(100)	85(77.27)	25(22.74)

A total of 85 benign masses were encountered, the most common variant was epithelial origin, and accounted for 62.73% of all benign masses and 48.18% of total ovarian masses. Out of 85 cases of benign ovarian masses, ultrasonogram reports were available in 71 cases (83.53%). In 66 cases site, size and cystic nature of the tumour was mentioned. Only 9 cases (10.59%) CA-125 level were estimated. It was found to be elevated in 4 cases. Out of 25 (22.74%) malignant masses 23 (20.90%) were primary ovarian cancers and 2(1.82%) were metastatic. Among the ovarian malignancies, serous cystadenocarcinoma was the most frequently found. It comprised 13 cases (52%). Ovarian masses usually present with lower abdominal pain, abdominal enlargement, and sign of increased pressure on neighboring organs. Some of the cases ascites was found .The symptoms presented by the patient in these series was shown in table II.

Table -II: Symptoms presented by the patients of 110 ovarian mass.

Symptoms	Number of patient (%)
Lower abdominal pain	4(16)
Pelvic mass	20(80)
Abdominal distention	2(8)
Irregular pervaginal bleeding	2(8)
Anaemia weight loss	10(40)
Ascitis	3(20)

In the present series 20 cases (80%) were presented with pelvic mass and 4 cases (16%) had experienced pain in the lower abdomen. Ascites was found in three cases. Metastatic carcinoma accounted for 1.82% of all ovarian masses and 8% of all ovarian cancers. The age range is 35 to 50 years with the mean age of 42.5 years. Out of two cases of metastatic carcinoma, one is found features of metastatic adenocarcinoma after histopathological examination. Another case 50 years old lady, microscopic examinations reveal it was a case of malignant mixed mullarian tumour of endometrial origin.. Of the total 25 cases of malignant ovarian masses ultrasonogram reports were available in 23 cases (92%), of which18 cases were pelvic mass of suggested ovarian origin. Hormone markers were done in only 8 cases (32%). Elevated CA-125 level was found in 6 cases (24%). The histological types were serous cystadenocarcinoma (4 cases), mucinous cystadenocarcinoma (1 case) and granulosa cell tumour (1 case). In the present study menstrual history were available in 95 cases (86.36%) of which 76 cases (80%) had experienced menarche at the age of 10-12 years. Out of 25 cases of malignant ovarian tumour 23

cases had the history of early menarche. Late menopause and delayed child bearing are two risk factors are uncommonly observed in the present series. Out of 110 cases only 8 cases (7.27%) had the history of menopause at the age of 52 years or more. Nulliparity is another risk factor but in this study only 8 cases of nulliparous women were found and all of them had benign ovarian tumour. Of the total 110 cases, 88 (80%) women were parous and of them 75% had benign and 25% had malignant ovarian mass respectively.

Discussion:

The pathology of ovarian mass is one of the most complex areas of gynaecology because the ovary gives rise to a greater range and variety of masses than does any other organs.

This study was based on the clinical presentation and histological patterns of ovarian mass including the important parameter of age, parity, menstrual patterns, family history, and symptoms. All the features have been compared with reported studies of many worker13-17. There are numerous types of ovarian mass, both benign and malignant. We are studied 110 cases and their findings are mostly agreed with findings of other workers . The benign masses are mostly in young women between the ages of 20 and 45 years. The malignant masses are more common in older women between the ages of 40 and 65 years. In the present series 77.27% of masses were benign and 22.73% of were malignant. The relative incidence of all ovarian masses as follows : Surface epithelial origin 65%-70%, germ cell origin 15% - 20%, sex cord stromal origin 5% - 10% and metastatic to ovaries 5%. Another study of Bennington et al (1968) revealed that 363 cases (66.12%) out of a total 549 cases of ovarian masses were of epithelial origin, 134 (24.40%) were germ cell origin , 26 (4.74%) were metastatic carcinomas. The findings of the present study also agree more or less with finding of the above mentioned workers.

Serous cystadenoma was found as one of the common benign tumors of the ovary. It accounted for 41.17% of benign masses and 31.8% of all ovarian masses. Serous cystadenoma may occur in any age but most common between 20-50 years of age and the average size varies from 10 to 20 cm in diameter (Crum C P, 2004). In these study that 80% of this tumours were between the age of 20-50 years and the mean size was 8.33cm which agreed with the finding of Crum C P,2004. Mucinous cystadenoma is the second most common tumors of epithelial origin. The incidence of this tumour was also studied by various workers and found different in different studies such as 10% (55 in 540) by Bennington et al (1968) and 11.88% (34 in 286) by Tintara H. et al, 2003. The present study also shows the incidence of this tumour which agreed most of the workers. It comprised 17.65% of all benign tumour and 13.64% of all ovarian tumour. Mucinous cystadenoma most frequently develop during third to fifth decades (Young R H. et al, 1999). In the present series the mean age of mucinous cystadenomas was 45years. Most of the mucinous cystadenomas were 15 to 30cm in diameter, multilocular and are filled with thick to watery mucinous fluid (Young R H. et al, 1999). The mean size of mucinous cystadenoma was 12.1 cm and the majority of the tumour (66.67%) was between 10 to 35 cm. Benign cystic teratoma comprised 95% of all masses arising from germ cell and 30% of all ovarian masses. (Young R H. et al, 1999). The present study shown the incidence of

benign cystic teratoma. It represented 30.59% of benign ovarian masses, 23.63% of all ovarian masses which agreed with the finding of Bennington et al (1968) and other workers. Benign cystic teratomas are usually found in young women during the active reproductive years (Crum C P, 2004). The disease was most prevalent in the second and third decades with the peak incidence in the third decades. In the present study the age distribution show that 80% of patients were between the age of 20-40 years and the peak incidence in third decades.

Thecoma fibroma are relatively common and account 4% of all ovarian masses (Crum C P, 2004). In the present series the incidence of thecoma fibroma was 4.53% of all ovarian masses. The mean size the tumour was 10.44 cm and the age range of the patients were 19-45 years. In the present series one case of 19 years nulliparous lady presenting the complain of heaviness in the lower abdomen and ascitis. After investigations it was found that CA 125 level is > 600 U/ml, ultrasongram finding was right adnexal solid lesion with pleural effusion and ascitis and the clinical diagnosis was ovarian tumour. After histopathological examination it was found as cases of fibroma.

Carcinoma of the ovary is the third most common of the malignancy of the female genital tract (Crum C P, 2004). A retrospective study of 990 cases of ovarian carcinoma done by Aure J. et al, 1971. They found 36% were serous cystadenocarcinoma, 20.5% of mucinous cystadenocarcinoma. The findings of the present study also disagreed to some extent with some studies but at the same time correlated with the findings of other studies. There were 23 cases of primary ovarian cancer (92%) and 2 cases of metastatic carcinoma (8%). Frequency of serous cystadenocarcinoma was found to be52%, mucinous cystadenocarcinoma 12%, granulosa cell tumour 8% and dysgerminoma immature teratoma, teratoma with malignant transformation, mixed germ cell tumour and gonadoblastoma were 4% each. Tintara H. et al, 2003 studied that 38-68% of women with ovarian cancer was older than 50 years of age and 5-15% of women were 30-49 years. In the present study the age range was between 10-75 years and ovarian carcinoma was most frequent 14 cases (60%) between the ages of 45-60 years, which is similar with the previous workers. Serous cystadenocarcinoma was the most frequent tumour. It was found 13 cases (52%) and most of the patients presented with pelvic mass, few of them have lower abdominal pain and ascitis. 4 cases (30.76%) were bilateral and 6 cases (46.15%) were omental metastasis at the time of diagnosis. Mucinous cystadenocarcioma was the second common tumour, found 12% in malignant and 2.73% in all ovarian masses. The age range was 30-55 years of age. Two cases (66.67%) were bilateral and the mean tumour size was 20cm. Granulosa cell tumours were found in 2 cases (8%). Patient's age was 55 years and the patients were menopausal and presented with irregular post menopausal pervaginal bleeding and lower abdominal pain. These findings were similar by Crum C P, 2004. The dysgerminoma in an account for 2% of all ovarian cancers and 75% occur in the second and third decades (Crum C P, 2004). In the present series 1 case (0.91%) of dysgerminoma was studied. Gonadoblastoma is a rare tumour found almost exclusively in patients with an

underlying gonadal disorder. Affected patients were typically children or young adults. The clinical picture includes a mass and virilization, (Young R H, et al, 1999). In this present study one cases of gonadoblastoma was identified. The patient was 17 years old and her chromosome analysis found 46 xy pure gonadal dysgenesis. Two cases of metastatic carcinoma (1.82%) were studied in the present sires. Malignant mesodermal mixed tumour (Carcinosarcoma) is a rare tumour and found in postmenopausal women. Most commonly the tumour arises in the endometrium and metastasizes to the ovary. In the present series one case in was studied. The patient was 50 years and postmenopausal and presented with a huge pelvic mass. Her clinical diagnosis was malignant ovarian tumour. But after gross and histopathological examination it was found that it is the metastatic malignant mixed mullarian tumour. Another case of metastatic adenocarcinoma was studied.

Abdominal pain (70.59%) and lump in the lower abdomen (47.06%) were the symptoms most frequently experienced in patients with benign ovarian tumours. Patients with malignant ovarian tumour presented with pelvic mass and some with irregular. Pervaginal bleeding. This findings was overall similar to the observations of develop country.

Conclusion:

It is evident from this study that, the pattern of ovarian masses in Bangladeshi population is roughly similar to that described in Western countries with a few exceptions. Correct histological diagnosis of ovarian masses can be made in majority of cases through careful examination of the routinely stained slides with the aid of proper clinical information. Adequate clinical information, ultrasonogram of lower abdomen and some hormone markers may be helpful in the early diagnosis of ovarian mass. In doubtful cases, intraoperative imprint cytology / frozen section may provide information regarding malignancy and thus aid in plan of surgery and further management.

Illustrations:

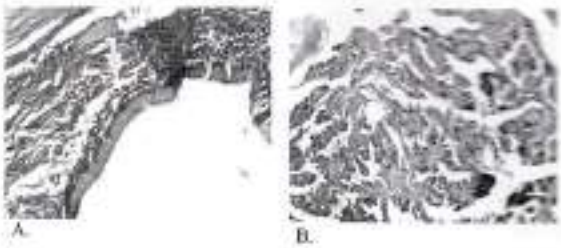

Figure-1(H&Ex40):A. A 68-year-old woman: Photomicrograph showing a case of ovarian mucinous cystadenoma. B: A 35-years woman: Photomicrograph showing a case of ovarian papillary serous cystadenocarcinoma.

A. B.

Figure-2(H&Ex40):A. A 33-year-old woman: Photomicrograph showing a case of ovarian mature cystic teratoma. B: A 45-years old woman: Photomicrograph showing a case of ovarian cellular fibroma.

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Original Article

Dorsal Buccal Mucosa Graft Urethroplasty for Female Urethral Strictures.

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ABSTRACT:
Introduction: Female urethral stricture is an underdiagnosed and overlooked cause of female bladder outlet obstruction. The possible etiologies may be infection, prior dilation, difficult catheterization with subsequent fibrosis, urethral surgery, trauma, or idiopathic. We present our technique and results of dorsal onlay full thickness buccal mucosal graft urethroplasty for female urethral stricture. **Materials and Methods:** A prospective study was performed on 15 female patients with mid-urethral stricture who underwent dorsal onlay buccal mucosal graft urethroplasty from January 2013 to June 2018. Of these, 10 patients had previously undergone multiple Hegar dilatations, 5 had previous internal urethrotomies. The preoperative work up included detailed voiding history, local examination, uroflowmetry, calibration, and micturiting cystourethrogram. **Results:** All patients had mid-urethral stricture. Mean age was 45 years. Mean Qmax improved from 6 to 20 ml/s. Mean residual volume decreased from 150 to 30 ml. Mean duration of follow-up was 8 months (6 months to 1 years). Only one patient required self-calibration for 6 months after which her stricture stabilized. None of the patient was incontinent. **Conclusion:** Dorsal buccal mucosal onlay graft urethroplasty could be considered as an effective way to treat female urethral stricture.

Keywords: Dorsal onlay, female urethral stricture, buccal mucosal graft.

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INTRODUCTION

Female urethral stricture is an usually underdiagnosed condition. It occurs in 2% to 7% of females presenting with lower urinary tract symptoms and surgical treatment is still debatable.[1] Any strict diagnostic criteria has not been documented for female urethral stricture

because of its rare incidence. However, Defreitas et al. stated that a detrusor pressure (Pdet) of 25 cm of H_2O and maximum urinary flow rate (Qmax) of less than 12 ml/s is consistent with obstruction.[2] The most common aetiology for female urethral stricture may be infection, repeated instrumentation, trauma, previous surgeries for incontinence or diverticula, radiation for pelvic malignancy, and idiopathic. As similar to the male urethral stricture disease, results of repeated urethral dilatation and internal urethrotomy are not good in females also as subsequent fibrosis occurs due to bleeding and extravasation[3]. Surgery is often the answer in such cases in the form of meatoplasty for distal urethral strictures and grafts or flaps for mid-and proximal-urethral stricture. Several methods of female urethroplasty have been reported in various small series.

We hereby present our experience of treating female urethral stricture with dorsal onlay buccal mucosal graft in 15 patients.

MATERIALS AND METHODS

A prospective study was performed on 15 female patients with mid-urethral stricture who underwent dorsal onlay buccal mucosal graft urethroplasty from January 2013 to June 2018. Full informed consent was taken from all the patients. The diagnostic criteria taken were: A maximum urinary flow rate of less than 10 ml/s, inability to calibrate urethra with 10 Fr catheter, and narrowing of urethra with proximal dilatation on micturiting cystourethrogram. All patients had preoperative evaluation including detailed history, physical examination, uroflowmetry, residual volume, and micturating cystourethrogram. Almost all 15 patients presented with poor flow and feeling of incomplete voiding, two of them had recurrent urinary tract infections and two had frequency and urgency as their main presenting complaints. 10 out of 15 patients had previously undergone multiple Hegar dilatation, 5 had previous internal urethrotomies for bladder outlet obstruction. The stricture etiology was idiopathic in 10 cases, 1 had undergone multiple transurethral resections for a bladder tumor, 4 had history of difficult cathetarisation during other surgery. None of the patients had preoperative incontinence or any grade of prolapse. All patients had normal preoperative serum creatinine.

PROCEDURE

Urethra is dissected dorsally and laterally from 3 to 9' 0 clock position by an inverted U-shaped incision. Stay sutures are taken at urethral angles to help in dissection. Sharp dissection is done with scissors. Urethra is dissected proximally above the stricture in retropubic space. A full-thickness urethrotomy is then made over the stricture site at 12' 0 clock position with a surgical blade and then extended with scissors upto proximal and distal healthy area which may extend even upto urethral meatus. Urethra is now again calibrated with an 18 Fr Foley catheter to ascertain that there is no proximal stenosis beyond the incised strictured site. Saline is injected in submucosal plane in lateral buccal mucosal wall and full-thickness buccal mucosal graft is harvested and defattened. The dimensions of the harvested graft are in accordance with the length of the stricture plus additional healthy margin. Then an 18 Fr silastic catheter is placed in urethra over which buccal mucosal graft has to be sutured to urethrotomy site. The buccal mucosal graft

is then sutured on the dorsal surface of urethra as onlay graft with 4-0 vicryl sutures in continuous fashion. First suture is taken at the apex of urethra and then onto the graft and tied. Then suturing of right and left margin of urethra is done with buccal mucosal graft and urethra is sutured back to its normal position with 4-0 vicryl.

Mean hospital stay was 7 days. After 14 days patient is again called for voiding cystourethrography and catheter removal.

Our follow-up protocol includes every 3 monthly assessment of voiding and storage lower urinary tract symptoms, uroflowmetry, and one weekly self-calibration. Patient is followed-up for a minimum of 1 year.

RESULTS

Site of stricture was mid urethra in all 15 patients. Mean age of patients was 45 years. Mean preoperative versus postoperative Qmax was 6 ml/s versus 20 ml/s, mean residual urine was 160 ml versus 30 ml. Mean stricture length was 1 cm. Mean operative time was 120 minutes. Mean duration of follow-up was 1 year. None of the patients had evidence of any buccal mucosal bleeding or graft necrosis in form of either discolouration or sloughing of buccal mucosal graft. Patients did not report any significant postoperative pain or discharge suggestive of wound infection and were advised to return to their normal daily activities after 3 to 4 days. At first follow-up 3 weeks after surgery, micturating cystourethrogram showed a normal urethra without any proximal dilatation. The criteria of successful reconstruction was a postoperative Qmax greater than 15 ml/sec with minimal post void residue(<30 ml) and normal appearing voiding cystourethrogram. One weekly self-calibration is advised for initial 3 months.

At 1 year of follow-up, all patients had Qmax >15 ml/sec without any significant residual urine or voiding and storage lower urinary tract symptoms. At mean follow-up of 12 months, all patients voided well with good flow. None of the patients reported incontinence during follow-up based on patient physician interview.

DISCUSSION

Female urethral stricture is usually an underdiagnosed condition. It was treated in past with repeated urethral dilatations and internal urethrotomies. As in males, urethral stricture disease in females can cause voiding and storage lower urinary tract symptoms, recurrent urinary tract infections, and even renal impairment. These symptoms are usually of long duration and severe which cause significant impairment in quality of life. Stricture is usually distal to external urethral sphincter and can occur in any part of urethra, although it seems to occur most commonly in mid and distal urethra and less in proximal urethra.

Often these females are referred by physicians and surgeons as there is no means by which they can be relieved medically. These patients may be evaluated by detailed voiding history including symptoms of stress and urge incontinence and recurrent urinary tract infections. Local examination should be done along with uroflometry and measurement of residual volume. Calibration may be done gently with 10 Fr catheter for diagnosis as a wider bore catheter could dilate some soft stricture and then micturating cystourethrogram would not show narrowing of stricture site and proximal urethral dilatation.

Surgical treatment of female urethral stricture disease has not been adequately addressed in literature and few small series describing various techniques of female urethroplasty are available.

Smith, et al.[3] reported their experience with dilatation and intermittent catheterization in seven female urethra stricture patients with seemingly good results, as amongst patients declared cure, none required more than four dilatations. However, he stated that for patients who are not compliant or cannot self-catheterize, this procedure is inadequate and urethroplasty could be a better option.[4]

The dorsal approach for vaginal graft has the same advantages as described in that of male stricture urethra of strong mechanical support and vascular bed provided by clitoral: cavernosal tissue, decreasing the risk of diverticula formations. It is a more physiological reconstruction that directs the urinary stream away from vagina and spares the ventral aspect of urethra for further anti-incontinence surgery.

Montorsi et al.[5] described vestibular flap urethroplasty in 17 patients. Under optical magnification, an inverted Y-shaped incision was made around the meatus and the distal part of the urethra was dissected from its perimeatal tissue from the 9 o'clock to the 3 o'clock position. The urethra was then incised "dorsally" (close to the vagina) and a vestibular flap was developed superior to the urethra. However this procedure could not be used in cases of buccal mucosal fibrosis. Tanello et al.[6] reported the use of a pedicle flap from the labia minora for the repair of female urethral strictures in two patients. Berglund et al.[7] presented the technique of ventral onlay buccal mucosal graft urethroplasty for recurrent urethral stricture disease 30 months of follow-up. After surgery one of the two patients developed a recurrence of LUTS because of meatal stenosis. Swender et al.[3] used the technique of anterior buccal mucosal mucosal flap in eight patients with complete cure in seven patients after a single procedure who previously underwent multiple dilatations. Simonato et al. presented a series of six patients who underwent buccal mucosal inlay flap urethroplasty inspired by Orandi technique with good results.

To summarize the advantages, the procedure that we have described is inherently simpler to perform since it does not require tissue tunneling or flap rotation. It provides a more physiological voiding with urinary stream directed away from vagina and spares ventral urethra for further anti-incontinence procedures. We did not observe any de novo incontinence in any patient during follow-up. Whole of the procedure can be completed in spinal anaesthesia and does not require nasotracheal intubation and general anaesthesia which are required in patients in whom buccal and lingual mucosa are used as a graft. It would be worthwhile mentioning that we were not very stringent in documenting radiographs and endoscopic pictures of this rare entity which would certainly be of much interest for readers.

This procedure of dorsal onlay buccal mucosal graft seems to be an effective way to treat female urethral stricture. It may be done in cases of mid-and proximal-urethral stricture. It seems that the operative concept of the dorsal buccal mucosal onlay graft could be tested in a larger series with a long-term follow-up, and compared with other urethroplasty techniques to further evaluate benefits and pitfalls.

CONCLUSION

Dorsal onlay buccal mucosal graft

urethroplasty for mid- and proximal-urethral stricture is a simple and effective technique which can avoid repeated painful dilatations and multiple urethrotomies in females. Further studies with more patients and long follow-up are required to endorse the success of this procedure.

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Original Article

A Comparative Study on Attenuation of Propofol Induced Pain by Fentanyl and Palonosetron

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ABSTRACT:

Background and aim of study: Propofol is widely used for induction of anesthesia, although the pain during its injection remains a concern for all anesthesiologists. A number of techniques have been adopted to minimize propofol-induced pain. Various 5-hydroxytryptamine (5-HT3) antagonists have shown to reduce propofol-induced pain. Hence, this placebo-controlled study was conducted to compare the efficacy of palonosetron and fentanyl in terms of attenuation of propofol-induced pain during induction of anesthesia. ***Materials and methods:*** Seventy five American Society of Anesthesiologists (ASA) physical status I and II patients undergoing general anesthesia were randomly allocated into three groups. A 20-gauge cannula was inserted into a superficial vein of dorsum of the left hand, and after the occlusion of venous drainage, Group F (fentanyl), group P (palonosetron) and group C (control) were pretreated with 100 mcg of fentanyl in 10 ml saline, 0.075 mg of palonosetron in 10 ml saline and 10 ml of saline without any drug, respectively. The occlusion was released after 90 seconds and one-fourth of the total propofol dose was injected into the vein over a period of 5 seconds. During the injection of propofol, patients' pain was assessed and recorded as 0–3, corresponding to no, mild, moderate or severe pain, respectively. Chi squire test was used for the statistical analysis of propofol injection induced pain. For all analysis, differences were considered to be significant at $p<0.05$. ***Results:*** The overall incidence of pain on propofol injection was lower in fentanyl group (16%) and palonosetron group (12%) than in control group (44%) ($P<0.05$). There was no significant difference in the incidence of pain between fentanyl and palonosetron group ($P>0.05$). Three patients (12%) in control group had moderate pain. Four patients (16%) in fentanyl group and three patients (12%) in palonosetron group and eight patients (32%) in control group had mild pain. ***Conclusion:*** Pre-treatment with intravenous 100 mcg fentanyl is equally effective as intravenouspalonosetron 0.075 mg in preventing propofol injection induced pain and both were better than pretreatment of normal saline.

Keywords : Palonosetron, fentanyl, pain on propofol injection (POPI)

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Introduction

Pain on injection of propofol (2,6-diisopropyl phenol) is considered to be a problem for the anesthesiologists. The incidence of pain on propofol injection (POPI) is 28% to 90% in adults and 28% to85% in children[1]. Propofol has been commonly used for induction andmaintenance of anesthesia, but pain of propofol injectioncan be extremely distressing to the patients[2]. The mechanism of pain due to propofol injectionhas been unclear. Propofol belongs to the group ofphenol and can directly irritate the skin, mucousmembrane and venous intima and could immediately stimulate nociceptors and free nerve endings[3].The concentration of propofol in solution is associatedwith the pain. By its indirect action on theendothelium, it was considered that propofol activates the kallikrein-kinin system and releases bradykin in, through producing venous dilation and hyper permeability, which increases the contact betweenaqueous phase of propofol and free nerve endings, arisesin delayed pain within half a minute[4,5]. Pain on injection of propofol may be related to release of local kininogensand that the non-steroidal anti-inflammatory drugs (e.g.ketorolac) may have a role in reducing that pain[6]. Although it is not aserious complication, efforts are assumed to reduce the severity of the pain or discomfort.

Various pharmacological and non-pharmacological interventions have been done for investigation and elimination of propofol-induced pain [7,8,9].Such as, lignocaine, cooling or diluting the propofol solution, and pretreatment with lignocaine, ephedrine, ondansetron, metoclopramide, nafamostatmesilate, opioids, thiopental, or ketamine [3,7,10-14].

5-hydroxytryptamine3(5-HT3) antagonists such as ondansetron, granisetron, ramosetron and palonosetron have been shown to effectively alleviate propofol induced pain individually[3,15-17]. 5-HT3 antagonists are commonly used as antiemeticdrugs[18]. They have the ability to block sodiumchannels. Peripheral 5-HT3 receptors involve nociceptive pathways [19]. They bind to the opioid μ receptors in humans and exhibits agonist activity[20].

As a result of its action as a Na channel blocker, a 5-HT3 receptor antagonist, and μ-opioid agonist, palonosetron may potentially be used to alleviate pain produced by a drug similar to propofol. Fentanyl is a short-acting pure opioid agonist commonly used for intraoperative and postoperative analgesia. Also, it has some peripherally mediated analgesic action within the clinical dose range[21].

Materials and methods

The study was conducted at National Institute of ENT, Dhaka during the period of February to April, 2018. Having obtained the informed consent, 75 patients aged 18–55 years, American Society of Anesthesiologists (ASA) physical status I and II and scheduled for general anesthesia were included in this study. All relevant investigations for GA fitness were done. Patients were randomly allocated into one of the three groups of 25 each. Patients with habituation to analgesics, sedatives or anti-anxiety drugs; allergic diseases or sensitivity to opioids, 5-hydroxytryptamine (5-HT3) antagonists, propofoland infection on the dorsum of their left hands were excluded from the study.

None of the patients were pre-medicated

before entering the operation room. After routine monitoring (ECG, noninvasive arterial pressure and pulse oximeter) a 20-gauge cannula was inserted into a superficial vein of the dorsum of left hand and lactated Ringer's solution was infused at 100 ml per hour. After 5 minutes, lactated Ringer's infusion was stopped and the arm with the intravenous(i.v.) line was elevated for 15 seconds for gravity drainage of venous blood. After occluding the venous drainage using a manual blood pressure cuff as tourniquet (pressure inflated to 50 mm Hg) on the upper arm, the patients were pretreated over a period of 10 seconds with one of the pretreatment solutions; 100 mcg of fentanyl diluted to 10 ml (Group F), 0.075 mg of palonosetron (Group P) or 10 ml of normal saline without any drug as control (Group C).An independent anesthesiologist prepared the solutions and the investigator was blind to the contents of the solutions. After 90 seconds, the occlusion was released and one-fourth of the total calculated dose of propofol was delivered through the i.v. line over a period of 5 seconds. No other analgesics or sedatives were administered before propofol injection. During the injection, the patients were asked standard questions regarding comfort of the injection. A clinician blinded to the group assignment evaluated propofol-induced pain as described in Table-I. Thereafter, induction of anesthesia was continued by the remainder of the calculated dose of propofol (2 mg/kg) and vecuronium0.1 mg per kg to facilitate endotracheal intubation. General anesthesia was maintained with oxygen, nitrous oxide and halothane. After the end of surgery patients were reversed by neostigmine and atropine as usual. Heart rate and mean arterial pressure were recorded as basal, pre-intubation and 1 minute after intubation (post intubation). Within 24 h after the operation, the injection site was checked for pain, edema or allergic reaction by an anesthesiologist who wasblinded to group assignment.

Table I: Grading of pain:

0= No pain

1=Mild pain (pain reported only in response to questioning without any behavioral signs)

2= Moderate pain (pain reported in response to questioning and accompanied by a behavioral sign or pain reported spontaneously without questioning).

3= Severe pain (strong vocal response or response accompanied by facial grimacing, arm withdrawal or tears).

Statistical analysis: For comparison of quantitative variables between the three groups, the ANOVA test and for qualitative variables the Chi-squared test was used. The statistically significant level was $P<0.05$.

Results

Table II- shows there were no significant differences in demographic data including age, weight and sex between the study groups.

Table III- shows the base line, preintubation and postintubation hemodynamic changes. Basal MAP and HR are comparable in all three groups. There is significant difference of MAP and HR between control and other two groups during postintubation period ($p<0.05$).

Table IV- shows the overall incidence of pain on propofol injection was lower in group F (fentanyl group) (16%), group P (palonosetron group) (12%) than in group C (control group) (44%) ($P<0.05$). There was no significant difference in the incidence of pain between fentanyl and palonosetron group ($P>0.05$). Three patients (12%) in control group had

moderate pain. Four patients (16%) in fentanyl group and three patients (12%) in palonosetron group and eight patients (32%) in control group had mild pain. There were no complications related to study drugs in the groups.

Table II: Comparison of demographic data between the groups

Parameter	Group F (Fentanyl)	Group P (Palonosetron)	group C (Control)	p value
Age in year (mean±SD)	41.76±7.83	43.03±8.21	42.92±7.94	>0.05
Weight in kg (mean±SD)	70.85±9.62	68.83±9.41	68.12±8.48	>0.05
Sex (M/F)	14/11	13/12	12/13	>0.05

Table III: Changes of mean arterial pressure and heart rate between the groups

Hemodynamic parameter	Basal Group F/P/C	Pre intubation Group F/P/C	Post intubation Group F/P/C
Mean arterial pressure (mm Hg)	90/87/88	81/83/80	87/90/116
Heart rate/ min	81/83/80	64/70/72	80/83/102

Table IV: Incidence and severity of pain following propofol injection between the groups

Characteristics of pain	Group F (Fentanyl) (n=25) %	Group P (Palonosetron) (n=25) %	Group C (Control) (n=25) %	p value
No pain	21 (84%)	22 (88%)	14 (56%)	<0.05
Pain	4 (16%)	3 (12%)	11 (44%)	<0.05
Mild pain	4 (16%)	3 (12%)	8 (32%)	<0.05
Moderate pain	0	0	3 (12%)	<0.05
Severe pain	0	0	0	

Discussion

Considering the extensive use of propofol in clinical practice, the pain frequently reported on induction of anesthesia cannot be neglected. Although it is not a serious complication, efforts are assumed to reduce the severity of the pain or discomfort. Propofol belongs to the group of phenols that can irritate the skin, mucous membranes, and venous intima[3]. The main mechanism for the induction of pain with propofol injection has yet to be established; however, studies have shown that high concentrations of free propofol in the aqueous phase of an emulsion[22] and the lipid carrier are associated with pain on injection.

The effectiveness of lignocaine and fentanyl are consistent with the reports of other researchers who also reported that lignocaine and fentanyl were effective in reducing the intensity of propofol injection pain [7,23,24,25].

In our study the overall incidence of pain on propofol injection was lower in fentanyl group (16%) and palonosetron group (12%) than in control group (44%). There was no significant difference in the incidence of pain between fentanyl and palonosetron group. Three patients (12%) in control group had moderate pain. Four patients (16%) in fentanyl group and three patients (12%) in palonosetron group and eight patients (32%) in control group had mild pain.These findings are more or less similar to those in the studies by researchers in the same field [23,24,26].

There are currently many 5-HT3 receptor antagonists[27] (ondansetron, granisetron, dolasetron, palonosetron, alosetron, tropisetron and ramosetron) are available and the effect of many of these drugs has been studied in reducing propofol-induced pain. 5-HT3 receptor antagonists bind to opioid μ-receptor thus acting as agonists. In addition, 5-HT3 receptors are involved in the nociceptive pathway, and this may be the mechanism of these drugs' analgesic effect.

In a study by Ahmed et al.[28], the incidence of propofol injection pain was reduced from 60% to 15% after granisetron pre-treatment. In another study, severity but not the incidence of pain on injection was significantly reduced by dolasetron (50%) compared with placebo, and there was no significant difference between dolasetron and lignocaine[29]. The incidence of pain was reported to be 60% and 38% respectively with pre-treatment by ramosetron 0.3 mg or combination with ramosetron and lignocaine 20 mg in another study30. These results show effective reduction in propofol injection pain.

Rye HB et al[17] performeda study of the effect of pretreatment by palonosetron (0.075 mg) on propofol-induced pain and found 72.5% of patients experienced a decrease in the occurrence of propofol-induced pain. In our study we found 88% of patients experienced a decrease in the occurrence of propofol-induced pain by pretreatment with 0.075mg palonosetron.

There were no complications related to study drugs in the groups in this study.

Conclusion

It can be concluded after this study that, pre-treatment with intravenous 100 mcg fentanyl is equally effective as intravenous palonosetron 0.075 mg in preventing propofol injection induced pain and both were better than pretreatment of normal saline, also with an added advantage of palonosetron in preventing postoperative nausea and vomiting.

Conflict of interest: All the authors hereby declare that they have no conflicts of interest, financial or otherwise, with respect to publication of the submitted manuscript.

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Original Article

Domestic Violence Against Women in Bangladesh & Steps to Reduce the Incidences.

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ABSTRACT:
Background: This study is aimed to investigate the causes of Domestic violence against the women in Bangladesh at different levels. **Objectives:** To study the cause of violence and suggest corrective measures at family & society. To suggest some steps for increasing the awareness between the family and the members. **Results:** Results of the study showed high prevalence of lifetime sexual violence: 37% in urban and 50% in rural areas. An overwhelming majority of the women reported being sexually abused by husbands more than once. The study further revealed that about 75% of the sexually abused women experienced other forms of violence by husbands as well. For example: 51% urban women and 38% rural women experienced three forms of violence: physical, sexual and emotional. The common factors positively associated with physically forced sex by husbands were: dowry demand, history of physical abuse of husband's mother by his father and controlling behavior of the husband. **Conclusion:** The study suggests that domestic violence is a subtle multifaceted problem in contemporary Bangladesh and it inflicts trauma on women from a number of perspectives.

Keywords: Women, Violence, Abuse, Assault.

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Introduction:

Although domestic violence against women is pervasive worldwide, there is no universally accepted definition or terminology. Unfortunately, domestic violence is a complicated and difficult issue to study and the research findings are inconsistent[1]. The general concept of "domestic violence" includes many different categories and meanings, such

as: "intimate partner violence", "domestic abuse", "domestic assault", "battering", "partner abuse", "marital strife", "marital dispute", "wife beating", "marital discord", "women abuse', "dysfunctional relationship", "intimate fighting", "mate beating" , "spouse abuse", "wife abuse" and "wife assault" , "conjugal violence", "marital violence", "family violence", 'gender violence', "partner aggression", and "intimate terrorism".[2-7] Domestic violence is defined as a subset of violence perpetrated by intimate partners. Specifically, it refers to the acts that are perpetrated by intimate partners or other family members, resulting in, great cost on the physical, sexual, psychological and economic wellbeing of women and girls.[8-9] UNIFEM defines domestic violence as a form of violence against women that is perpetrated by intimate partners and family members.[10] Domestic violence often occurs in private spaces and is often tacitly condoned by society as a private or family matter.[11] The term "domestic" refers to the family home where such violence is perpetrated against women. [12] Violence against women in the home is especially dangerous because while the home is said to be the safest palace for men, the home can be the least safe place for women[13].

Domestic violence against women is a serious problem in Bangladesh. Although the term "domestic violence" is now being replaced by the term "intimate partner violence" in the global literatures. This article shall use the term "domestic violence" since some features of the concept of intimate partnerships or relationships, such as the idea of civil partnerships - living together without marriage, are not culturally accepted, socially practiced or religiously permitted in the context of Bangladesh [14-15].

Objectives of the Paper

1. To identify the major causes of domestic violence against women in Bangladesh;
2. To Prevent the major causes of domestic violence against women in Bangladesh.

Materials and Methods:

This study was carried out among 100 women of different districts of Bangladesh between 1st July 2015 and 30th June 2016. Daily coverage's over domestic violence against women in Bangladesh. Over the years, some agencies and scholars, based on newspaper reports, court cases, reported incidents to the police, have produced and analysed data and information on their own ways about various incidents/events of violence against women in Bangladesh. But due to the lack of standard reporting practices, the majority of the studies are contradictory, uneven, selective and, in some cases, overlapping. For example: the BNWLA (2002), as well as, Naripokkho & Bangladesh Mahila Parishad (n.d.) found discrepancies among figures on domestic violence from by different newspapers. Farouk (2005) identified that newspapers have a tendency to cover sexual crimes rather than domestic violence. Of late, Bangladesh Police and Multi-sectoral Programme on Violence against Women (MSPVAW) of Ministry of Women and Children Affairs have started to collect and maintain statistical information about incidents of violence against women. For example: in 2013, Bangladesh Police recorded 19,601 various incidents of violence against

women (Bangladesh Police, n.d.). However, based on newspaper reports, MSPVAW collects information only on three categories of violence such as; physical assault, sexual assault and burning. In 2013, MSPVAW reported 4476 various incidents of physical violence (MSPVAW, n.d.). Then again, the main problem with police statistics is that it does not give segregated information on various types of violence no specific or concrete statistical information can be obtained about the problem of domestic violence. The articles are categorized into three broad domains: i) forms, practices and factors of domestic violence, ii) consequences of domestic violence and iii) coping strategies/help-seeking practices.

Results:

Results of the study showed high prevalence of lifetime sexual violence: 37% in urban and 50% in rural areas. An overwhelming majority of the women reported being sexually abused by husbands more than once. The study further revealed that about 75% of the sexually abused women experienced other forms of violence by husbands as well. For example: 51% urban women and 38% rural women experienced three forms of violence: physical, sexual and emotional. The common factors positively associated with physically forced sex by husbands were: dowry demand, history of physical abuse of husband's mother by his father and controlling behaviour of the husband. One of the early empirical attempts to investigate violence against women was made by Jahan (1994). She interviewed 50 self identified female victims of marital violence around Dhaka city. The researcher combined both qualitative and quantitative approaches in the study. The study identified physical violence as the most prevalent form of violence. The most common forms of physical violence were found as pushing and shoving. Around 56% women reported to have been beaten once within the past year while 20% reported to have been beaten three to five times. The researcher's conclusions noted a sense of desperation, fear and helplessness were more pronounced among the survivors who suffered severe beatings. Disagreements over household matters, provocation of in-laws, different situational factors, husband's sense of superiority, and demand for dowry were identified as some of the major factors of marital violence. In the study, verbal/emotional abuse was also found as a frequent feature of domestic violence. Some of the common forms of violence were identified as scolding 40%, mental torture 24%, slapping 44%, severe beating 19% and forced sex 15%. The study further found five important factors that contribute significantly in triggering violence: not meeting the husband's expectations in managing household works, sexual relationship, poverty, dowry demand and economic dependence of women.

Discussion:

Although the issue of violence against women can be traced back to the 1980s in Bangladesh , the issue is actually a re-emergence and an outcome of the worldwide women's movement throughout the 1970s. The re-emergence is in the form of organised protests from women's groups that pressure the government to punish the perpetrators of violence.[16] The organized protests involve both female and male concerned

citizens and have contributed to the recognition of the need for action by the government and the public against violence against women.17 The pressure from women's groups also resulted in the media and local newspapers reportage of violence against women starting the 1980s.

The most common forms of physical violence were found as pushing and shoving. Around 56% women reported to have been beaten once within the past year while 20% reported to have been beaten three to five times. The researcher's conclusions noted a sense of desperation, fear and helplessness were more pronounced among the survivors who suffered severe beatings. Disagreements over household matters, provocation of in-laws, different situational factors, husband's sense of superiority, and demand for dowry were identified as some of the major factors of marital violence. In the study, verbal/emotional abuse was also found as a frequent feature of domestic violence.

In WHO's Multi-country study of 10 countries including Bangladesh, confirms that Bangladeshi women experience the greatest amount of physical and sexual violence by their intimate partners.[18] The life time prevalence of physical and sexual violence was reported as 62% in the rural site and 53% in the capital city. Interestingly, sexual violence was reported more frequent than physical violence in rural sites. Moreover, in all ten countries, including Bangladesh, between 20% and 75% of women experienced various types of emotional acts such as; insult, humiliation and threat.19 The study further confirmed that the experience of physical and/or sexual violence tends to be accompanied by more controlling behaviour by an intimate partner. In Bangladesh, domestic violence not only threatens the health and well-being of women but also has a negative impact on the health and well-being of their young children.[20]

Conclusion:

The study suggests that domestic violence is a subtle multifaceted problem in contemporary Bangladesh and it inflicts trauma on women from a number of perspectives. However, many issues of domestic violence against women are yet to be explored. It is true that all forms of violence might not be experienced by all women within the same scale or intensity but it is only the prolonged in-depth interview of the research participants which can explore the women's experiences of the different forms of domestic violence. Moreover, all the forms of domestic violence are inextricably interlinked and interwoven. For example: if a woman refuses sex with her husband, she might be physically battered, emotionally or psychologically tortured, not given money for household expenses or her income might be taken away by her husband. Unfortunately, the existing studies have failed to exhume the important dynamics underlying the problem. Furthermore, it is noteworthy that no attempt as yet has been made to specifically explore women's experiences of economic violence. Domestic Violence (Prevention & Protection) Act 2010, is being implemented at the local level, and in particular, the experiences of frontline implementers in implementing the policy. In the this section, a critical look into the implementation of the

Domestic Violence (Prevention & Protection) Act 2010 from the local level is imperative. Over the years, the problem of domestic violence has not only increased but taken newer and more morbid forms and shapes in Bangladesh. It has, thus become urgent to investigate the policy protection available to women experiencing domestic violence and the effectiveness of the policy so that policy makers are able to make systematic judgements about the existing policy intervention.

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Original Article

SERUM VITAMIN D LEVEL IN ACUTE MYOCARDIAL INFARCTION PATIENTS

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ABSTRACT:

Introduction: Incidence of Myocardial Infarction is increasing day by day in developing countries. Most of the patients who sustain myocardial infarction have coronary atherosclerosis. There are several risk factors for the development of atherosclerosis. Among all the risk factors, vitamin D deficiency has been proposed to play an important role in the development of atherosclerosis.

Materials and methods: With this aim, a case-control study was carried out to explore the association of serum vitamin D with acute myocardial infarction. The enrolled study subjects were categorized into group A which comprised of STEMI, group B, comprised of NSTEMI and group C comprised of age and sex matched individuals free fromacute myocardial infarction.

Results: The mean values of serum vitamin D (in ng/ml) were 20.17, 20.8 and 24.77 respectively in STEMI, NSTEMI and control groups. It differed significantly among groups ($p<0.001$) and it was significantly low in STEMI and NSTEMI groups compared to control group ($p<0.001$ and$p=0.004$).

Conclusion: From this study it can be concluded that low serum vitamin D is an independent risk factor for developing acute myocardial infarction. Individuals with serum vitamin D <20 ng/ml have higher chance of developing acute myocardial infarction compared to those with serum vitamin D >20 ng/ml.

Key words: Acute myocardial infarction, serum vitamin D.

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Introduction

Cardiovascular diseases (CVD) are the leading cause of morbidity & mortality and are responsible for one third of death worldwide (WHO 2006).The South Asian countries like India, Pakistan, Bangladesh, Sri Lanka and Nepal contribute the highest proportion of the burden of CVD compared to any other region globally (Mohammad et al. 2014). A study from Bangladesh demonstrated a dramatic increase in cardiovascular diseases from 1986-2006. The age standardized CVD mortality rates increased by 30 folds (from 16 deaths per 100,000 to 483 deaths per 100,000) among males and 47 folds (from 7 deaths per 100,000 to 330 deaths per 100,000) in females (Islam et al. 2009).

The onsets of cardiovascular diseases are rising in prevalence and will be predicted to the main cause of mortality by 2020 (Anwaruddin et al. 2007). According to the health bulletin 2014, published by Ministry of Health and Family welfare, Bangladesh, death caused by diseases of circulatory system (33.2%) was highest among all causes of death followed by diseases of respiratory system (13.9%) and diseases of cerebrovascular system (10%). Coronary artery disease is the most common form of cardiovascular disease in adults and is the single most important cause of premature death in Europe, Russia, North and South America, Australia and New Zealand. In UK, 1 in 3 men and 1 in 4 women die from coronary artery disease. The death rates from coronary disease in UK have fallen but, in Eastern Europe and much of Asia, the rates of coronary artery diseases are rapidly rising (eds Walker, Colledge, Ralton& Penman 2014).

The term myocardial infarction pathologically denotes the death of cardiac myocytes due to extended ischemia, which may be caused by an increase in perfusion demand or a decrease in blood flow (ACC & AHA 2012). Acute myocardial infarction (AMI) falls in the spectrum of acute coronary syndromes (ACS), which includes unstable angina (UA), Non–STelevated myocardial infarction (NSTEMI), and ST-elevated myocardial infarction (STEMI) (eds Walker, Colledge, Ralton & Penman 2014). Myocardial infarction may be the first manifestation of coronary artery disease. It is one of the major causes of death and disability worldwide. Myocardial infarction may be a minor event in a lifelong chronic disease, it may even go undetected. But it may also be a major catastrophic event leading to sudden death or severe hemodynamic deterioration (Thygeson et al. 2007). Persistent elevation of the ST-segment on ECG signifies total occlusion of a coronary artery that causes necrosis of the myocardial tissue. This condition is known as STEMI. ACS without ST-segment elevation may either be NSTEMI or UA. NSTEMI is more severe than UA. In this condition, the ischemia in the cardiac tissue is extensive enough to release cardiac biomarkers (troponin I or T) into the blood, but the occlusion is not as complete enough to cause elevation of the ST-segment (ACC & AHA 2012).

It is now increasingly recognized that adequate vitamin D status is not only important for bone health and the prevention of osteoporosis but also for optimal function of many other organs and tissues throughout the body, including the cardiovascular system (Zittermann et al. 2005). Cardiac myocytes have cytosolic Vitamin D receptors (VDRs) (Bischoff et al. 2006) that bind active Vitamin D (1, 25 dihydroxy Vitamin D, but unlike vascular smooth muscle cells, cardiac

myocytes lack 1α-hydoxylase activity (Hewison et al. 2004), an enzyme that converts inactive Vitamin D to active Vitamin D. Hence cardiac muscle is strongly dependent upon circulating active Vitamin D or calcitriol levels. In the past several in vitro studies have shown that calcitriol regulates intracellular calcium metabolism and thus myocardial contractility. Consequently, 25(OH)D deficiency has been associated with aberrant cardiac contractility, cardiomegaly and increased ventricular mass due to myocardial collagen deposition (Mozos et al. 2015). Apart from its effects on the myocardium, 25(OH)D deficiency also leads to enhanced atherosclerosis secondary to vascular smooth muscle cell proliferation and increased production of proinflammatory cytokines (IL-6 & TNF-α) (Muller et al. 2010).

Low vitamin D levels have been associated with increased prevalence of hypertension and thereby myocardial infarction. Mice having lack of vitamin D receptor had an increased renin expression and angiotensin II production and developed also hypertension and cardiac hypertrophy. Calcitriol exerts a protective effect on human Reno vascular function, restoring the impaired endothelium-dependent relaxation in renal arteries. The augmented production of reactive oxygen species is induced by angiotensin II in human renal arteries and endothelial cells and impairs vascular function enabling the development of hypertension. Hypertensive patients with vitamin D deficiency were associated with a twofold risk of cardiovascular events, including myocardial infarction, angina and prolonged chest pain with documented ECG changes (Marginean et al. 2013).

In different studies, there are multiple proposed mechanisms by which vitamin D causes myocardial infarction (MI). But yet there may be some factors that intervene between vitamin D and myocardial infarction which should be looked for. Till now, in our country, there is lack of studies to establish the foresaid association. So, this study was done to test the hypothesis that low serum vitamin D is associated with myocardial infarction.

Materials and methods

It was a case-control study was carried out to explore the association of serum vitamin D with acute myocardial infarction. The enrolled study subjects were categorized into group A which comprised of STEMI, group B comprised of NSTEMI and group C comprised of age and sex matched individuals free from acute myocardial infarction. 90 study subjects were enrolled by non-probability sampling, 30 from each group. We included both sexes in the age group of 30-60 years with characteristic chest pain with characteristic ECG changes & rise of serum cardiac markers suggesting myocardial infarction. But we excluded, terminally ill patients, patients with heart failure, advanced chronic liver or renal disease, malignancy, pregnancy and subjects who were taking vitamin D supplement. Then data of random blood sugar, HbA1C, serum creatinine, lipid profile, troponin I and CKMB were collected from the patient's recent hospital records. And then association of serum vitamin D in acute myocardial infarction patients and control individuals were explored.

Results

It was a case control study carried out in the Department of Biochemistry, BSMMU from March 2015 to February 2016 with an aim to evaluate the association of serum vitamin D with acute myocardial

infarction. The cases were Acute Myocardial Infarction patients who were admitted in the department of cardiology, BSMMU and were categorized into STEMI (n=30) and NSTEMI (n=25) groups according to the ECG findings. Another 30 (thirty) age and sex matched subjects, free from Acute myocardial infarction were enrolled as control. Blood samples were taken with proper written consents and with appropriate measures serum vitamin D were measured to find out the aforesaid association among groups.

Age and sex distribution of study subjects were shown in table 1 and ANOVA test was done to see the level of significance.

Age (years)	Groups			p value
	Acute MI			
	STEMI n (%)	NSTEMI n (%)	Control n (%)	
≤40	2 (6.67)	6 (24)	12 (40)	
41-50	9 (30)	1 (4)	11 (36.67)	
51-60	19 (63.33)	18 (72)	7 (23.33)	
Total	**30 (100)**	**25 (100)**	**30 (100)**	
Mean±SD	52.47±7.46	52.12±9.79	49.23±9.13	0.378

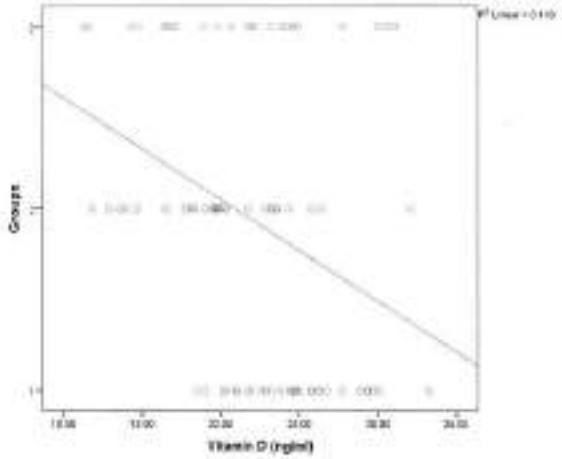
Baseline clinical & anthropometric characteristics of study subjects were shown in table 2.

Parameters	Groups			p value
	Acute MI		Control	
	STEMI	NSTEMI		
SBP (mmHg)	120.33±14.02*	119.6±17.91*	110±10.5	0.011
DBP (mmHg)	76.33±8.9	73.8±10.13	73.33±9.22	0.422
Height (cm)	164.30±5.44	163.12±6.60	160.90±8.10	0.086
Weight (Kg)	65.17±7.64	66.00±7.15	63.13±8.54	0.073
BMI (Kg/m²)	24.47±1.35	24.56±1.92	24.23±1.79	0.768

Level of serum vitamin D and serum calcium was shown in table 3. After doing ANOVA test the level of serum vitamin D was low in STEMI and NSTEMI patients which was statistically significant.

Parameters	Groups			p value
	Acute MI		Control (mean±SD)	
	STEMI (mean±SD)	NSTEMI (mean±SD)		
Serum vitamin D (ng/ml)	20.17±4.34	20.8±5.63	24.77±3.61	<0.001
Serum calcium (mg/dl)	8.47±1.01	8.2±0.96	8.97±0.67	0.176

Figure 1 showed that, there is a negative correlation between acute myocardial infarction and serum vitamin D level (Spearman's correlation co-efficient, r= -0.356 and p=0.001).



In table 4, using a logistic regression analysis of serum vitamin D, age, BMI, smoking, DM and HTN, in relation to myocardial infraction, the model showed vitamin D and age were independently associated with acute myocardial infarction (p=0.028 and p=0.003).

Parameters		p value	OR	95% CI for OR	
				Lower	Upper
S. Vitamin D	(≤20 ng/ml) (>20 ng/ml)	**0.028**	6.57	1.22	35.35
Age	(>50 years) (≤50 years)	**0.003**	5.88	1.80	19.22
BMI	(≥25 kg/m2) (<25 kg/m2)	0.73	1.22	0.39	3.79
Smoking	Yes No	0.32	1.80	0.56	5.80
DM	Yes No	0.20	0.47	0.14	1.50
HTN	Yes No	0.60	1.36	0.41	4.49

Discussion

Incidence of Myocardial Infarction is increasing day by day in developing countries. Most of the patients who sustain Myocardial Infarction have coronary atherosclerosis. There are several risk factors for the development of atherosclerosis. Among all the risk factors, vitamin D deficiency has been proposed to play an important role in the development of atherosclerosis.

With this aim, a case-control study was carried out to explore the association of serum vitamin D with acute myocardial infarction. The enrolled study subjects were categorized into group A which comprised of STEMI, group B, comprised of NSTEMI and group C comprised of age and sex matched individuals free from acute myocardial infarction.

We compared some baseline demographic, clinical and anthropometric characteristics of study subjects among groups. Demographic profiles such as smoking status, diabetes mellitus and hypertension did not differ statistically significantly among groups. The findings were supported by that of Correia et al. (2013). The authors also found no difference among groups in terms of smoking, diabetes mellitus and hypertension ($p=0.86$, $p=0.28$ and $p=0.77$ respectively). However, there were some studies which were contrary to our study and the study by Correia et al. (2013) in this regards.

We also compared some clinical characteristics like systolic and diastolic blood pressure in our study, revealing that systolic blood pressure were significantly differ ($p=0.011$) but no significant difference of diastolic blood pressure among the groups. These findings were also consistent with that of Siadat et al. (2012) ($p<0.05$ (Significant) and $p>0.05$ (Not Significant), for systolic and diastolic blood pressure respectively. Among the anthropometric characteristics there were no significant differences among groups in terms of height, weight and BMI. Comparing these results with the results of Karakas et al. (2013), we observed BMI were not significantly different among coronary heart disease cases and non-cases male ($p=0.128$) but it differed significantly among coronary heart disease cases and non-cases female ($p<0.001$).

In our study, we wanted to compare serum vitamin D and serum calcium levels among the groups and the mean value of serum vitamin D differed significantly among groups with a p value of <0.001. The mean value of serum calcium level among the groups did not differ significantly. These findings were in agreement with that of Lee et al. (2011). The authors found significant difference in vitamin D level but no significant difference of serum calcium level among acute myocardial infarction and control groups. There was another study which was inconsistent with our findings. Karur et al. (2014) found both vitamin D deficiency along with calcium deficiency were associated with risk of cardiovascular disease. There was no other study to compare our results where serum calcium was measured along with vitamin D. Roy et al. in 2015, conducted a case-control study to explore the association of vitamin D and acute myocardial infarction. When the authors compared the biochemical characteristics of patients with acute myocardial infarction with age and sex matched individuals, they found that vitamin D [25(OH)D] level was significantly lower in acute myocardial infarction group than in control group with a p value of<0.001. Our findings also correlated with the findings of a

cross-sectional study by Siadat et al. (2012) where authors observed similar findings in this regard. They found that vitamin D level (ng/ml) were 58.7±39.6 in AMI group and 39.6±18.9 in control group and it was significantly different with a p value 0.001.

We did the Spearman's correlation between acute myocardial infarction and serum vitamin D level and it was observed that there was a significant negative correlation between acute myocardial infarction and vitamin D level (r=-0.365, p=0.001).These findings were also consistent with the findings of Lee et al. (2008). They concluded in their study that vitamin D deficiency is inversely associated with risk of cardiovascular disease.

Finally, we did multinomial logistic regression analysis of serum vitamin D, age, BMI, smoking, diabetes mellitus and hypertension to evaluate the independent factor of acute myocardial infarction. The analysis showed that low level of serum vitamin D (<20 ng/ml) was independently associated with the development of acute myocardial infarction (Wald=4.81, p=0.028) (OR 6.57, 95% CI 1.22-35.35). This result suggested that low serum vitamin D is the sole contributing factor in developing acute myocardial infarction irrespective of the BMI, smoking, diabetes mellitus and hypertension. Our study result also revealed that age was independently associated with the development of acute myocardial infarction (p=0.003) (OR, 5.88, 95% CI 1.80-19.22) along with vitamin D. Roy et al. (2015), did a case – control study with 120 acute myocardial infarction patients and 120 age and sex matched controls at All India Institute of Medical Sciences, New Delhi. Multiple logistic regression analysis of their study concluded that along with low serum vitamin D level (p <0.001), central obesity (p=0.006) and diabetes mellitus (p=0.02) were also independent risk factors for acute myocardial infarction.

Conclusion

From this study it can be concluded that low serum vitamin D is an independent risk factor for developing acute myocardial infarction. Individuals with serum vitamin D <20 ng/ml have higher chance of developing acute myocardial infarction compared to those with serum vitamin D >20 ng/ml.

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Original Article

Effect of Rising Rate of Caesarean Section: Should we & Can we reduce it?

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ABSTRACT:
Background: Caesarean section is the most commonly performed surgery in obstetrics. Newer indications for doing caesarean surgery have resulted in dramatic rise in caesarean section rate in last several years. **Objectives:** The aim of this study was to evaluate the rate and indications of caesarean section and to identify the measures to decrease its incidence of possibilities. **Method:** This prospective study was done in Obstetrics and Gynaecology department of Khulna Medical College, Khulna. Over a period of 12 months from January 2016 to December 2016, 1454 caesarean sections were done among total 3391 deliveries. An attempt was made to find out the caesarean section rate but conception after ART and estimated foetal weight over than 4kg were excluded from the study. **Result:** During one year study period, there were total 3391 deliveries, out of which 1454 were caesarean section and rate was 42.88%. Repeat caesarean section after prior caesarean delivery was the leading contributor of caesarean section rate (34.11%). Other leading indications were foetal distress 8.12%, pregnancy induced hypertension 8.04%, premature ruptured membrane 6.67%, cephalopelvic disproportion 6.05%, post-dated pregnancy 5.92%, and breech presentation-5.64%. **Conclusion:** Some measures that can reduce caesarean section rate are reduction in primary caesarean section, trail of VBAC to women with one prior caesarean section, use of foetal blood scalp sampling for foetal monitoring, use of oxytocin and plotting of the partogram for every labour.

Key words: Caesarean section rate, Raising rate, Indications, Prior one section.

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Introduction

The Caesarean section has been increasing worldwide. CS is the most common abdominal surgery procedure, performed around the world, explaining its high prevalence worldwide. The world health organization (WHO) suggests a caesarean section rate between 5% and 15%: a rate above 15% implies an unnecessary and unjustified use of surgical delivery, whereas a rate below 5% may be related to the population's lack of access to the medical technology[1,2]. The rising trend of caesarean section in modern obstetrics is a major concern in health care system all over the world[3].With all the limited

health care resources in a developing country like Bangladesh, this rising trend definitely has a major implication. According to WHO, rate of caesarean section in many countries have increased beyond the recommended value of 15%, almost doubling in last decade especially in high income areas like Australia, France, Germany, Italy, North America, and United Kingdom [4,5,6,7]. Similar trend is also seen in low resource countries like China, Brazil and India, especially due to birth in private hospital[3]. Some factors that contribute to the increased use of CS are: the improvement of surgical and anaesthetics techniques, reduction of post-operative complications and perception of greater safety during the procedure [8].

CS rate has become more prevalent over the years, without medical justification and regardless of the risk that it may bring to mother and children born by CS. There are several adverse effects that it may affect the mother, which include maternal death, the greater number of hospital admission and increase the risk in future pregnancies for placenta praevia. Respiratory distress syndrome is the only adverse outcome that is well documented in the babies born by CS [9, 10, 11].

Now the woman's motivation for the choice of CS include: fear of vaginal delivery, preservation of coital function, relief from the pain of labour and opportunity to obtain tubal ligation [12]. Current available data from developed countries related morbidity and mortality from CS is more than in vaginal delivery for both the mother and foetus. The aim of our study was to evaluate the rate and indication for Caesarean section and to identify the measures to decrease its incidence of possibilities.

Material & Methods:

This prospective study was done in Obstetrics & Gynaecoloy department of Khulna Medical College Hospital over a period of one year from January, 2016 to December, 2016. During that period total 3391 patients were delivered in this institution and those were selected in this study .Patients with history of conceptions after artificial reproductive technology (ART) and estimated foetal weight over than 4 kg were excluded from the study. Preliminary investigations done were haemoglobin estimation, blood grouping & Rh typing, random blood sugar, urine R/M/E, obstetrics ultrasonography and in some selected cases blood urea, serum creatinine, serum uric acid level, SGPT, & serum electrolytes. After taking consent, detailed present & past history were taken from all the cases, general and local examination were done on the day of LSCS. Cephalopelvic disproportion was assessed mainly by clinical pelvimetry. Labour patients were monitored by partograph and foetus was monitored clinically as well as CTG.

Blood donor was kept ready in some selected case such as placenta praevia, obstructed labour. Antibiotic & pain killer were given in all cases for 5 days. Oxytocic drug was given in 24 hours. Most of the cases were discharged within 7 days in good conditions. In any complication management was done accordingly. Detailed analysis of cases was done in terms of emergency/ elective, types of CS, indications of CS, complications, risk factors and other contributory factors those were documented in pre structured proforma. Statistical analysis was done by using SPSS-17.

Result:

Between January 2016 to December 2016, total 3391 patients were delivered in obstetrics & gynaecological department of Khulna Medical College Hospital. Out of which 1833 (54.05%) patients were delivered normal vaginally. Breech vaginal delivery was 23 (.68%) patients and 81 (2.39%) patients needed instrumental vaginal delivery. But main findings were that 1454 (42.88%) patients needed caesarean section for different indications (Table-1). obtained the base line variable: age, parity, occupation, and gestational age at the time of caesarean section. The patients were selected in three age groups: below 20 years, between 20- 30 years, and above 30 years. Among these three groups, maximum 1283 (88.24%) patients were in age group between 20- 30 years. Most of the caesarean patients were miltiparity & grand multiparity (52.06%) and also home maker was 53.99%. Only 15.06% was service holder. Maximum caesarean section (67.54%) was done at term. But special scenario was that 146 (10.04%) patients needed caesarean section in preterm conditions in some dam special situations. (Table-2)

Clinical indications of caesarean section of the study population were observed very carefully. Maximum caesarean section (37.41%) was done due to previous history of caesarean operation. Breech presentation and transverse lie were 6.05%. Other leading indicators were foetal distress (8.12%), CPD (6.05%), PROM (6.67%), hypertensive disorder (8.04%) and post-dated pregnancy (5.92%) (Table-3)

Table -I: Mode of delivery

Mode of delivery	Number of cases	Percentage
Normal vaginal delivery	1833	54.05
Instrumental vaginal delivery	81	2.39
Breech vaginal delivery	23	0.68
Caesarean delivery	1454	42.88
Total delivery	3391	100

Table-II: Base line variables of study populations

Age	Number	Percentage
< 20 yrs	48	3.30
20- 30 Yrs	1283	88.24
> 30 Yrs	123	8.46
Parity		
Primipara	697	47.94
Multipara	750	51.58
Grand Multipara	7	0.48
Occupation		
Home maker	785	53.99
Manual labourer	450	30.95
Office worker	219	15.6
Gestational age at the time of C-Section		
Preterm	146	10.04
Term	982	67.54
Post dated	320	22.01
No Information	6	0.41

Table-III: Indication for all Caesarean section

Indication	Number	Percentage
Previous one Caesarean section	496	34.11
Previous tow or more C- section	48	3.30
Foetal distress	118	8.12
Cephalo pelvic disproportion	88	6.05
Post dated pregnancy	86	5.92
Hypertensive disorder of pregnancy	117	8.04
Breech presentation	82	5.64
Tranverse lie	6	0.41
Failed induction	29	2
Floating foetal head	31	2.12
IUGR	33	2.27
Prom	97	6.67
Oligohydramnios	22	1.51
Contracted pelvis	22	1.51
Precious pregnancy	18	1.24
Twin pregnancy	13	0.89
Prolong labour	29	2.0
Obstructed labour	28	1.93
APH	44	3.03
Bad obstetric history	13	0.89
Elderly primi	6	0.41
Deflexed head	5	0.35
Face presentation	2	0.14
Hand prolapse	2	0.14
Cord prolapse	1	0.07
Failed induction	15	1.03
Maternal distress	2	0.14
Rhesus incompatibility	1	0.07

Discussion:

Increased caesarean rate is a major health concern world-wide, which has increased from 5-7% in 1970 to 25-30% in 2003 [13]. The caesarean section rate in our study was 42.88%. Different studies in different countries revealed caesarean section rates 32.6% in India, 27.4% in China, 51.6% in Brazil and 57.3% in Mexico [14,15,16,17] which were compatible with this study. The reason for this high rate was probably, because ours is a referral hospital which received complicated pregnancy from periphery. The most common indication for caesarean section in our study was repeat caesarean section (34.11%) in woman with one prior caesarean section. A trial for vaginal birth after a previous caesarean section (VBAC) is considered safer than routine repeat caesarean section. But it is unfortunate that there is currently less enthusiasm for VBAC by trial of labour. It is evident that caesarean section is doctor friendly, VBAC is not[18]. RCOG recommended that all women previously delivered by one lower segment caesarean section should be offered an opportunity to labour during their next pregnancy by promoting a trial of labour [19]. But here the decision for primary caesarean section is important and every effort for vaginal delivery should be made in primigravida by a carefully supervised trial of labour.

The reasons for caesarean section in women with one prior c- section were mainly short inter pregnancy interval of 6-12 months, post-dated pregnancy and poor monitor facilities during labour. Trial of labour was given only to woman who came in active phase of labour with a cervical dilatation of > 3 cm .All these factors lead to a rise in repeat sections. Many studies have recommended that the option of VBAC should give to women with prior one scar [20].

In our study another common indication was foetal distress (8.12%) which was compatible with Indian study[21]. The gold standard method of estimation of foetal distress was not done in our set up. We had for foetal monitoring been cardiotocography. CTG is known to overestimate the foetal distress. The accurate method of estimation of foetal distress is foetal scalp blood pH estimation[22].

Next common indication for caesarean section was Breech presentation (5.64%). In some countries caesarean section rate for breech is now the order of 80%. This trend has implication not only for the index pregnancy but increases the chance of repeat caesarean section in subsequent pregnancy[23].

This was also evident from our study also wherein PIH accounted for 8.04% of caesarean section. Other important indications for caesarean section in our study were PORM (6.67%) Post-dated pregnancy (5.92%) CPD (6.05%), which were compatible with Shamshad study[24]. There were various studies that have shown that rising caesarean section rated does not indicate better healthcare either to the mother or to her new born. Now with these in-depth analysis of underlying causative factors, indications, adopting appropriate technical and remedial measures can reduce the high caesarean rate in tertiary teaching level hospital.

Conclusion:

Patient pressure and competing private interest play an important role in the decision making process of caesarean section. So awareness should be raised among the providers as well as among the pregnant women and their families regarding the potential dangers associated with delivery by caesarean section.

Women with prior one scar should be

given trial of VBAC after careful assessment; care provider should need to relearn the art of instrumental vaginal deliveries and external cephalic version (ECV) as an important step towards reducing caesarean section rate.

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Original Article

Septoplasty Under Local Anaesthesia in Satkhira Medical College Hospital

MZ Islam[1], ARM M Haque[1], NP Shannyal[2], MK Arefin [3], MK Patuari[4], HK paul [5]

ABSTRACT:
Introduction: In Bangladesh the septoplasty is a common ENT surgical procedure. Aim: To report our experience in the appropriate management of nasal septal deviation Satkhira District. **Patients and methods:** A retrospective study was carried out in 90 patients with symptomatic deviated nasal septum who underwent septoplasty in the ENT Unit of Satkhira Medical College Satkhira Bangladesh , from June 2015 to Jan 2017. All patients were operated under local anesthesia; a Killian's incision was used in all patients. **Results:** A total of 90 patients, aged 16-40 years, 75 male and 15 female, underwent septoplasty for deviated nasal septum. The observed probable causes were: not established in 50 cases and traumatic in 15 cases. The essential symptoms were: nasal obstruction, facial pain, vasomotor rhinorrhea. The total disappearances of the preoperative symptoms were observed in 90% of cases and increased moderate in 10% of cases. **Conclusion:** Despite its rarity in our unit, the septoplasty is a procedure that must occupy a significant place in rhinologic surgery of our country considering the results of this study.

Keyswords : Septoplasty, Deviated nasal septum

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Introduction

Septoplasty is a common surgical procedure performed by otorhinolaryngologist [1-4].

The nasal septum is a rare rectilinear area; it is often the seat of morphological abnormalities that cause functional disorders [5-7].

Major anatomic variants leading to osteo-meatal obstruction are deviated nasal septum, concha bullosa, paradoxical middle turbinate and infra orbital (Haller cell) [6].

Septal deviation can be cartilage and/or bone; causes a narrowing of the nasal area in the convex part with a decrease in respiratory field (linear thickening); the overall impact on the human organism can then occur secondary to this condition [3,7,8].

Some people are born with a bent septum, overs acquire a bend as a result of trauma [6,9].

Osteal obstruction may lead to fluid accumulation and stagnation, creating a moist, hypoxemic environment ideal for

growth of the pathogens [5,6].

A disorder of the nasal architecture can join: there is a tip of the nose without support.

Diagnosis is often delayed, in the tropical area most patients are seen before by other health professionals not specialized in the field of ENT diseases. This state of doing favors a non-adequate care based on poorly adapted treatments for these patients with deformity of the nasal septum: iterative treatments to the nasal mucosa (nasal drops vasoconstrictor, inhalation of often toxic substances traditional); such a situation can only complicate an eventual surgery of the nasal septum.

Aim of study

To report our experience in the appropriate management of nasal septal deviation in Satkhira Medical College Hospital under Local Anaesthesia

Patients and Methods

A retrospective study was carried out in patients with symptomatic deviated nasal septum who underwent septoplasty in the ENT Unit of Satkhira Medical College Satkhira Bangladesh , from June 2016 to June 2017 . All patients were operated under local anesthesia; a Killian's incision was used in all patients. Our exclusion criteria were patients suffering from medical problem (e.g. uncontrolled diabetes and hypertension, heart problems, coagulopathies and those case done under General Anaesthesia

Informed written consent was taken from every patient. A detailed examination of the nose, throat and ears was performed. Laboratory tests were carried out on patients before surgery, and systemic diseases were not present in any case. X-ray examination of associated paranasal sinuses and nasopharynx was also done (Figure 1).

Figure1: X-ray of sinuses

Figure 1: X-ray of sinuses

The various nasal symptoms are evaluated.

Our surgical procedure:

All patients were operated under local anesthesia:

- Topical anesthesia of the nasal mucosa by 5% xylocaine
- Infiltration anesthesia with 2% xylocaine with adrenaline
- Premedication was conducted one hour before the operation by Inj Diazepam I/M , Inj Ketorolac I/M
- - A Killian incision was used in all patients
- All incisions were sutured using 3/0 Atraumatic catgut
- The nasal packing impregnated with antibiotic ointment was removed after 48 hours.
- After surgery, antibiotics were recommended to all patients for 10 days, and oral analgesic, nasal saline lavage and anti-inflammatory treatment was used as needed.

Results

Between 2015 and 2017, a total of 90 patients, aged 16-40 years, 75 male and 15 female, underwent septoplasty for deviated nasal septum. The observed probable causes were: not established 50 cases and traumatic 15 cases. The essential symptoms were: nasal obstruction, facial

pain, vasomotor rhinorrhea. The total disappearances of the preoperative symptoms were observed in 90% of cases and increased moderate in 10% of cases. Short and long-term postoperative were simple. Minor hemorrhage was observed in few cases 10 patients (11.11%) have only benefited a nasal packing and 3 patients (9.10%) had a septal suturing and a nasal packing. All patients were able to join home 24 hours' time after the operation. The total disappearance of the preoperative symptoms were observed in 90% of cases and increased moderate in 10% of cases.

Age distribution

16 -20 yrs	10
21-25 yrs	35
26-30 yrs	28
31-35 yrs	15
36-40yrs	12

Complications

Haemorhage	10
Septal haematoma	7
Vasovagal attack	6
Cardiac arrest	1

Discussion

Septoplasty is one of the most widely used surgical methods for correction of septal deviation [8,10]. Many obstructive nasal disorders are caused by the septal deviation. Management for the traumas of the nose in distant areas far from the hospital structures specialized promotes huge problems and most patients remain with their deviation from the nose without early correction after a trauma.Our study will no doubt allow emphasis on this neglected rhinological pathology and which negatively influence the quality of life of patients.

This study confirmed the role of the septoplasty in rhinologic surgery within our unit despite the inadequacy of the medical equipment; this is a surgery that does not generally require expensive means that can represent an obstacle to its realization in such a unit like ours.The majority of our patients is male with an average age of 26 years, confirmed numerous works dealing with the septoplasty [2,9,11].The main indications of the deviation of nasal septum surgery are dominated mainly by traumatic, congenital malformative etiologies [1,3,8]. The low rate related to trauma in our study only - cases could be explained by the ridge that most patients have not been able to assert or set aside a history of nasal trauma.

Contraindications to the septoplasty apart from those inherent in any intervention, concern mainly under age 18 years, for some authors at this age, the development of the facial skeleton is incomplete and it has a risk for reproduction of the deviation [1,3,6,].Deviations of the nasal septum may to concern two portions of the septum (cartilage and bone) or one of the two [3,6]. Deviation at the level of the cartilaginous portion was especially found our patients as is the case in some reported works [1,2].

The symptoms caused by septal deviations are entirely the result of their effects on nasal function. The dominent symptom being nasal obstruction, but this is rarely severe enough to cause anosmia [6]

The effects of septal deviation are not negligible: nasal obstruction, mucosal changes, neurological changes [2,3,6].

The main symptoms observed in our patients (nasal obstruction, facial pain, catarrh) are usually those found in the literature [1,2,6].

Our patients presented primarily symptoms of deviation of nasal septum of type 2 and 3 according to the classification of Cottle [2,10]. Cottle classified septal deviation in to 3 types i.e

1) Simple deviation: only mild deviation with no obstruction and it is the most common type seen.

2) Obstruction: here the deviated septum touches the lateral wall, but on decongestion with vasoconstrictors the turbinate shrinks and the obstruction is relieved.

3) Impaction: massive angulation of the septum with a spur.

Surgical techniques for deviated nasal septum are diverse they relate mainly to used anesthesia, the incision of the nasal septum, the packing of the nose, the suture of the cartilage, the postoperative follow-up [1-3,9].

Submucosal resection of nasal septum is ideally performed under local anaesthesia [3,8].

All our patients were operated under local anaesthesia, mode of anesthesia that we considered suitable to our technical conditions bearable on the cost plan and reassuring for our patients whose most don't have too much confidence in general anesthesia. A non-negligible number of operators have recourse.

There are several types of incision of the nasal mucosa for the septoplasty: Killian, Passow, Halle and Freer Incisions [7,10,]. We opted for the Killian's incision .

Killian's incision is preferred for sub mucosal resection operations, it's the commonly used incision [2,3,8]. It is an oblique incision given about 5 mm above the caudal border of the septal cartilage [2].

The peculiarities of the septoplasty are variously cited according to the authors: difficult detachment caused by a cartilage deflected in various directions, complicated crests, pre-existing perforations, anterior galvanocauterization, adhesions of septal cartilage (risk of perforation) [1-3].

Opinions are divided on a nasal packing tamponade or a suture of the nasal septum during a septoplasty .

Anterior nasal packing is done routinely in many nasal surgeries, particularly in septoplasty [3,8].

History of nasal packing after nasal surgery falls back to 1847 in the time of Gustay Killian of Germany [11] and Otto Tiger Freer of USA yet systematic sub mucosal resection (SMR) and nasal packing was started in 1882 by Ephraim in Chicago and Peterson in Germany. Different types of nasal packing have been used like ribbon gauge soaked in bismuth iodoform paraffin paste, liquid paraffin, antibiotic ointments and others. Numerous other agents like polyvinyl acetate sponge (merocel), Nasopore (bioresorbable dressing), various balloon tamponade devices are also available

Nasal packing after septoplasty has been used to approximate septal mucopericondrial flaps mechanically, to prevent bleeding and septal haematoma, to support the septum, to stabilize the repositioned cartilage and bone fragments, and to prevent synechiae between the septum and lateral nasal wall [3,8,].

But few studies suggested that nasal packing is not necessary after nasal septoplasty as it causes discomfort when it is being removed

Thus some authors opt for the suturing the septum after septoplasty has the advantage of eliminating discomfort for the patients, has minimal complications and the hospital stay is less than with the nasal packing [1,].

Whereas the conditions of the tropical

environment with its adverse impact on the nasal mucosa, we especially preferred anterior nasal packing. Thus all of our patients have benefited of a the nasal packing without suture and three patients had in addition to packing a suture of the nasal septum to better approach the flaps after a difficult septoplasty.

This approach allowed a perfect mastery of bleeding associated with the chirurgical procedure and all of our patients have joined the home after 8 hours of observation. We have removed the packing in our patients on the 3rd day of the intervention with virtually no observed bleeding contrary to the approach taken in the majority of studies that have mentioned a nasal packing maintained for 48 hours.

The septoplasty complications may occur: synechiae, perforation, and deviation from the Mucosa, often very serious epistaxis, rarely an intracranial complication, thrombophlebitis of lower extremities causing a pulmonary complications... [1,3,6,8,].

A well suitable surgical technique allows to make it bearable and beneficial for the patient and reduce the risk of complications [2,3,].

We have observed minor intraoperative bleeding in the majority of cases and our postoperative suites were simple without major complications. In 3 cases we observed Vaso vagal shock and in 1 patient we observed cardiac arrest before incision and post ponned the procedure and ensure effective resuscitation .

Conclusion

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Original Article

Cranial Anthropometry of the Santhal's and Bengalis in Bangladesh

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ABSTRACT:
Context: The cranial anthropometry also called cephalometry, is the dimensions in which the length and breadth of the head are measured to find out the racial and sexual difference. Cephalic index also gives information about some disease condition. The Santhal's, our study subject living in north-west zone of Bangladesh are usually recognized as an ethnic group, because they have separate identity and their physical appearance is distinctive to some extent. The aim of this study was to compare the measurement between the Santhal's and Bengalis and with the other races from previous available data.
Study design: The study was an observational, cross sectional and descriptive in nature with some analytical component.
Study setting and study period: The study was carried out in Rangpur Medical College under Rajshahi University during the period of January to December 2012.
Selection of subjects: 100 adult male Santhal's and 100 adult male Bengalis from deferent areas of Dinajpur and Rangpur districts in Bangladesh.
Methods: Cranial dimensions, such as head length and head breadth were measured using Sliding and Spreading caliper and cephalic index was calculated.
Results: The head length and head breadth were significantly higher in the Santhal's than the Bengalis but the cephalic index of the Bengalis were significantly higher than the Santhal's. According to cephalic index the Bengalis were mecocephalic to brachycephalic type and the Santhal's were dolichocephalic to mecocephalic type.

Key wards: Anthropometry. Head length. Head breadth. Cephalic index.

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Introduction:

The anthropometry is the science of measuring the human body and its parts. The craniofacial anthropometry involves measurement of the skull and face[1]. By studying various methods such as cranial capacity, cephalic index and observation like craniometry have beenused to determine the racial trait in past[2]. Craniofacial anthropometry is an important technique used in both physical and clinical anthropology. It is very important for the study of human growth and variation in difference raceses and also for clinical diagnosis and treatment[3]. Several study have investigated the anthropometric characteristics of the different ethnic groups[4]. Information is scares on the anthropometric status of various tribal population and there is no any craniofacial measurement or research data among the Santhal's population in Bangladesh. The Santhal's are known as one of the oldest and largest indigenous communities in the northwestern belt of Bangladesh. They are largely seen in the northern districts of Dinajpur, Rangpur, Naogon, Thakurgaon and Panchagar[5].The Santhal's are dolichocephalic means long narrow headed, their speaking language is Santhal's that belongs to Austro-Asiatic sub family of the Austric family[6]. Records on cephalometry of the Santhal's tribal population is very scanty specially the measurement like craniofacial profile. Also, there is no comparative study between the Santhal's and Bengalis in Bangladesh. So, the present study thus attempted to document the cranial anthropometric measurement and cephalic indices of the Santhal's population and to assess the type of head and their cranial measurement in relation to the Bengalis and to determine their status in relation to other population studied elsewhere.

Methods and materials:

The study was descriptive observational cross-sectional in nature with some analytical component carried out in Anatomy department of Rangpur Medical College in the season of January to December 2012. The study subject consisted of a random sample of 100 adult male Santhal's and 100 adult male Bengalis age between 25-45 years residing at different locations of mithapukur and badargang of Rangpur district and parbotipur and nowabgang of Dinajpur district. Most of them were illiterate so their date of birth was recorded from national ID card. Age was calculated by subtracting the date of birth from the date of data collection. The Santhal's and Bengalis mixed in origin, history of congenital cranial anomaly, major craniofacial trauma, cranial re-constructive surgery that might affect the measurement were excluded from the study. The variables were head length (maximum cranial length) from glabella to opisthocranion (g-o) and head breadth (maximum cranial breadth) from enion to enion (e-e). Measurement of the two variables were taken by physical procedure and the cephalic index were calculated as a percentage of head breadth to the head length.

The head was than classified according to the cephalic index and compared to each other and with the other ethnic groups describe elsewhere.

Procedure of measuring the variable: By using spreading caliper physical measurement were taken at a fixed time between 9am to 5 pm to eliminate the discrepancies due to diurnal variation.

The following measurement were taken

1. Head length: it was measured from glabella to opisthocranion (g-o)
2. Head breadth: it was measured from

enion to enion(e-e)

3. Cephalic index was calculated from the percentage of head breadth multiplied by head length

All the measurement was taken twice, the final value that was used in the study was average of the two-obtained value.

2.3 Data processing and analysis:

After data collection, their frequency distributions, central tendency and dispersions was determined and result were prepared in terms of frequency, ranges, mean and slandered deviations using SPSS version13.0. Un paired T-test was done to compare the mean value with each other and with the other ethnic groups.

Results:

In case of head length, the mean value was significantly higher in Santhal's (18.75cm) than Bengalis (18.49cm) (p=0.00) table 1.1. Both groups were classified according to maximum head length. It was found that 70% of the Santhal's and 60% of the Bengalis belongs to very long head length type, this was followed by long type in which the Santhal's were 27% and the Bengalis were31% (fig-1 a and b)

Again, the head breadth was significantly higher in the Bengalis (14.82cm) than the Santhals' (14.57cm) (p=0.00) table 1.1. Both groups were classified according to head breadth, and were belongs to the middle type. The Santhal's 62% and the Bengalis 60% more middle type. Where as 19% of the Santhal's were narrow type and 18% of them were wide type. 7% of the Bengalis had narrow type and27% had very wide type head. Fig-2 a and b.

In case of cephalic index there was significant difference between the Santhal's and the Bengalis (p=0.00).

The mean cephalic index of the Santhal's (77.78+3.0) was significantly lower than the Bengalis (80.19 3.4) (table 1.1). Both groups were classified according to cephalic index. The Santhal's and the Bengalis respectively were mecocephalic 56% and 55%, though 29% of the Bengalis were brachycephalic and only 12% of the Santhal's were in these types. Whereas 31% of the Santhal's were in dolichocephalic group and only 10% of the Bengalis were in these group. So according to cephalic index the Bengalis were mecocephalic to brachycephalic type and the Santhal's were dolichocephalic to mecocephalic type. Fig-3.

Table 1:1 Distribution of the subjects by cranial measurements

Variables	Subjects		p value
	Santhal's	Bengalis	(p≤ 0.05)*
Maximum cranial length (cm)	18.75± 0.59 (17.1-20.3)	18.49± 0.58 (17-19.9)	0.002*
Maximum cranial breadth (cm)	17.57± 0.46 (13.6-16.1)	14.82± 0.51 (13.4-16.2)	0.000*
Cephalic index	77.78± 3.0 (71.28-85.64)	80.19± 3.4 (73.62-90.50)	0.000*

*p values reached from unpaired t test were found to be significant at 5% level

Result are shown as ranges and mean SDs.

n=100 in each groups

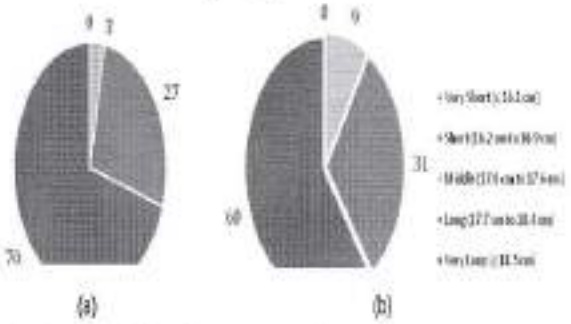


Fig. 1. Pie diagram showing percentage frequencies of different types of cranial length. The values within parentheses represent cranial length in the a) Santhals and b) Bengalies.

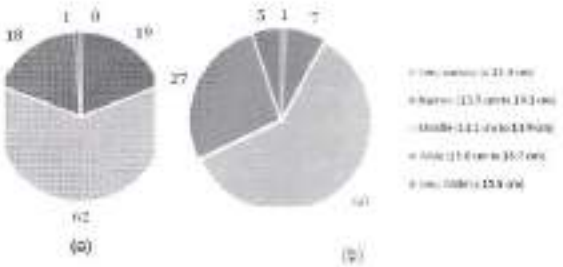
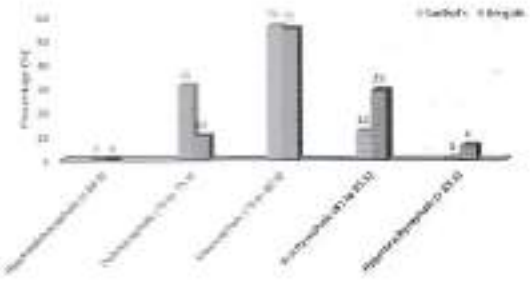


Fig. 2. Pie diagram showing percentage frequencies of different types of cranial breadth. The values within parentheses represent cranial breadth in the a) Santhals and b) Bengalies.



The head is classified

Hyperdolichocephalic (Very long and narrow)	≤ 69.9
Dolichocephalic (Long and narrow)	70 to 75.9
Mesocephalic (Medium)	76 to 80.9
Brachycephalic (Short and broad)	81 to 85.5
Hyperbrachycephalic (Very short and broad)	≥ 85.6

Fig. 3: Distribution of subjects by cephalic Index

Discussion

Discussion on head length and head breadth

The findings of the present study regarding cranial (head) variable were compared between the Santhal's and the Bengalis in Bangladesh and with the findings of various other ethnic groups. The Santhal's were proto-australoid on the basis of anthropological origin[7] but the Bengalis were australoid type 4. The mean head length of the Santhal's (18.75 0.59) were significantly higher than the Bengalis (18.49 0.58) table 1.1.

According to the head length type the Santhal's were mostly in very long head length group (70 %), the similar very long head length type were found in Malaysian[8], Syrian[9], MalayIndian[10], karkar[11], lufa[12], croasian[9], Santhal's of west Bengal[6], Latvian[13] and Bengalis in Bangladesh.

In case of head breadth the mean value were lower in the Santhal's (14.5 0.46) than the Bengalis (14.8 0.51) table 1.1. According to head breadth the Santhal's were belongs to middle type (60%). Similar middle type of head breadth were found in onges[14], gurung[15], karkar[11], lufa[12], and Bengalis in Bangladesh.

Discussion on cephalic index

In the present study, majority of the Santhal's were mecocephalic or medium (56%) followed by dolichocephalic or long narrow head (31%) fig-3. Similar mecocephalic head were found in the Bengalis in present study (55%) these were followed by brachycephalic or short head type (29%) fig-3. So according to cephalic index the Santhal's were dolichocephalic to mecocephalic type, whereas the Bengalis were mecocephalic to brachycephalic type. Bhatia et all-2006 reported that the Santhals' of india were dolichocephalic but tendency to mecocephalic. The Santhal's and the Bengalis In Bangladesh and the Indian were proto-australoid nearest to the Caucasoid group. So these support to Bhasin(2006) [4], who described as mecocephalic to brachycephalic.

Conclusion

The study showed that the adult male Santhal's of Bangladesh are mostly very long head length, middle head breadth and dolichocephalic to mecocephalic, whereas the Bengalis are very long head length, middle head breadth and mecocephalic to brachycephalic. The two communities studied, though belongs to nearest race

(australoid) showed significant variation possibly due to multifactorial etiological cause, which play significant role. The study may be useful and essential to the researcher, clinician, anatomist, anthropologist, nutritionist and forensic expert in respect to their field of study. The data may also provide as the basic framework for estimating the standard of the cranial dimensions.

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3) Editor, complier as number in a book: Robbins SL, Cortan RS, Kumar V, eds. Pathological Basis of Disease. 3rd ed. Philadelphia: WB Saunders, 1984: 236 - 48.

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Weinstein L, Swartz MN, Pathologic properties of invading microorganisms. In: Sodeman Jr, Sodeman WA, ed. Pathologic physiology: mecganism of disease. Philadelphia: WB Saunders, 1974: 457 - 72.

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