Welcome to Clinicopathological Seminar

Presented by-

Dr. Srikanto Karmaker

MS phase B Resident

Department of Orthopedic Surgery

Dhaka Medical College & Hospital

20 years old male with paraplegia

Particulars of the patient

Name	: Md. Mobinur Rahaman
Age	: 20 years
Sex	: Male
Reg. no	: 101855/185
Address	: Kodomtoli, Dhaka
Admission date	: 17/11/2024
Ward/bed	: Cabin 80 A
Mobile	: 01382…..

Chief Complaints

- Pain in upper back region for last 8 months
- Weakness of both lower limb for last 02 months
- Inability to stand and walk for last 10 days

History of present illness

According to statement of the patient, he was reasonably well 8 months back. Then he complained of pain in the upper back region which was insidious in onset, mild, dull aching, radiate to chest, aggravated at night and relieved by taking rest and analgesics. He also complained of evening rise of temperature, loss of appetite, and night sweat.

Continue…

He had history of weight loss (3.5kg) during this period. He had history of weakness of both lower limb for last 02 months followed by inability to stand and walk for last 10 days. He had no history of trauma, diarrhoea or gradual upward progression of weakness. His bowel & bladder habits were impaired for last 10 days.

.

Continue…

- **History of past illness :** Nothing significant
- **Treatment History :** He was admitted in DMCH and was treated conservatively by rest & anti-TB drugs. Then discharge with advice. But after 1.5 months his condition deteriorated and was admitted again.
- **Allergic History :** No known drugs or food allergy

Continue…

- **Immunization History** : He was immunized as per EPI schedule and Covid-19 vaccination
- **Personal History** : Non smoker, non betel-nut chewer, non alcoholic
- **Family History** : Nothing contributory
- **Socioeconomic History**: Belong to middle-class family

General Examination

- Appearance : Ill looking
- Body build : Below average
- Cooperation : Co-operative
- Decubitus : Supine
- Anemia : Mild
- Jaundice : Absent
- Cyanosis : Absent
- Edema : Absent

Continue…

- Dehydration : Absent
- Koilonychia : Absent
- Leuconychiya : Absent
- Clubbing : Absent
- Blood pressure : 110/80 mmHg
- Pulse : 84 beats/min
- Temperature : Normal

Continue…

- Respiratory rate : 18 breaths/min
- Hair distribution : Normal
- Hernial orifices : Intact
- Lymphnodes : Not palpable
- Thyroid gland : Not enlarged
- Jugular venous pressure : Not raised

Systemic Examination

Cardiovascular system

- **Inspection:**

Swelling, deformity or scar mark	: Absent
Visible cardiac pulsation	: Absent
Engorged vein	: Absent

- **Palpation:**

Apex beat	: Palpable at left 5th intercostal space
Thrill and left parasternal heave	: Absent.

Continue…

- **Percussion:**

Area of superficial cardiac dullness : Normal, No parasternal heave

- **Auscultation:**

Heart sound (S1+ S2) : Normal, with no Added Sound

Respiratory system

Inspection:

- Shape of the chest : Normal
- Deformity of chest : Absent
- Visible Impulse : Absent
- Scar mark : Absent

Continue…

- Respiratory pattern : Abdominio-thoracic
- Chest movement : Symmetrical
- Respiratory rate :18 breaths/min; regular
- Engorged vein : Absent

Continue…

- **Palpation:**

Trachea	: Centrally placed
Apex beat	: Palpable on left 5th intercostal space just medial to the midclavicular line
Vocal fremitus	: Equal on both sides
Chest expansion	: Normal

Continue…

- **Percussion:**
  - Percussion note : Resonant
  - Upper border of liver dullness : Right 5th intercostal space along the midclavicular line
- **Auscultation:**
  - Breath sound : Vesicular with No added sound
  - Vocal resonance : Normal

Alimentary system

Inspection:

Shape of the abdomen	: Normal
Umbilicus	: Centrally placed & inverted
Movement with respiration	: Present
Visible vein	: Absent
Visible cough impulse	: Absent
Hair distribution	: Normal

Hernial orifices were intact.

Continue…

- **Palpation:**

Temperature	: Normal
Tenderness	: Absent
Muscle guard or rigidity	: Absent
Shifting dullness	: Absent
Liver, spleen & kidney	: Not palpable

- **Auscultation** : Normal

Nervous system

Higher psychic function	: Normal
Cranial nerves	: Revealed no abnormality
Sign of meningeal irritation	: Absent

Locoregional Examination

Look :

Patient was in supine position. Both lower limb were extended with equinus feet. From back-

- Overlying skin was normal
- Hair distribution was normal
- No tuft of hair
- No visible gibbus present
- No scoliosis

Continue…

- No scar mark or discharging sinus
- No paraspinal muscle wasting
- Gait could not be evaluated due to paraplegia
- Per-urethral catheter was in situ

Continue…

Feel :

- Temperature – Normal
- Tenderness – present at upper dorsal spine
- Palpable gibbus present at upper dorsal spine
- Paraspinal muscle spasm present

Continue…

Neurological status

- Sensory : Diminished from nipple level to downward on both sides
- Motor : Muscle bulk - normal

  Muscle tone - increased

Continue…

Power of the muscle- by MRC grade

Muscles	Right	Left
Hip Flexors	0/5	0/5
Knee extensors	0/5	0/5
Tibialis Anterior	0/5	0/5
Extensor Halluces Longus	0/5	0/5
Flexor Halluces Longus	0/5	0/5

Reflexes

- Knee jerk – Exaggerated on both sides
- Ankle jerk – Exaggerated on both sides
- Ankle Clonus – Present on both sides
- Patellar clonus – Present on both sides
- Planter reflexes – Extensor on both sides

Continue…

Move : Movement of the spine was not possible due to paraplegia

- Upper limbs neurological examination revealed no abnormality

Digital Rectal Examination:

- Perianal sensation : Diminished
- Anal tone : Reduced

Salient feature

Md. Mobinur Rahaman, 20 years old male student non-diabetic, normotensive, non-asthmatic patient, coming from Kodomtoli, Dhaka, was admitted at DMCH with the complaints of pain in the upper back region for 08 months. Initially pain was mild, dull aching, insidious in onset, radiate to front of the chest and gradually the intensity of the pain was increasing and was aggravated at night.

Continue…

The pain was relieved by taking rest and analgesics. He also complained of evening rise of temperature, anorexia, night sweat. He had history of weight loss around 3.5 kg during this period. He developed weakness of both lower limbs for the last 02 months and followed by inability to stand, walk and became bed bound for last 10 days. His bowel and bladder habits were impaired for 10 days.

Continue…

He did not give any history of cough, haemoptysis, trauma or gradual upward progression of weakness. On general examination of this well cooperative gentle man revealed he was ill looking, body build –below average, decubitus- supine on bed, mildly anaemic, non-icteric, lymph nodes were not palpable, skin condition was normal.

Continue…

Vital parameters were within normal limit. Others systemic examination revealed no abnormality. On locoregional examination, the patient was supine in position, overlying skin condition and hair distribution were normal. There was no scar mark or discharging sinus. There was no visible gibbus. Temperature was normal, tenderness present at upper dorsal spine. Palpable gibbus present at upper dorsal spine.

Continue…

Sensory diminished from nipple level to downwards. Bulk of the muscle was normal and tone of both lower limb muscles increased. Power of the muscles of both lower limb by MRC grade 0/5. Knee and ankle jerk exaggerated on both sides. Patellar and ankle clonus were present . Planter extensor on both sides. Perianal sensation diminished and anal tone on DRE decreased. Movement of the spine was not possible due to paraplegia.

Problem list

Problem list

Palpable gibbus

Constitutional symptoms with weight loss

Pain in the upper back

- Exaggerated Jerk,
- Plantar extensor,
- Patellar and ankle clonus

Paraplegia

- Sensory diminished,
- Muscle power 0/5

Provisional Diagnosis

Provisional Diagnosis

Spastic paraplegia due to spinal tuberculosis at upper dorsal spine

Differential Diagnosis

- Spastic paraplegia due to spinal tumor at upper dorsal spine
- Spastic paraplegia due to pyogenic spondylodiscitis at upper dorsal spine

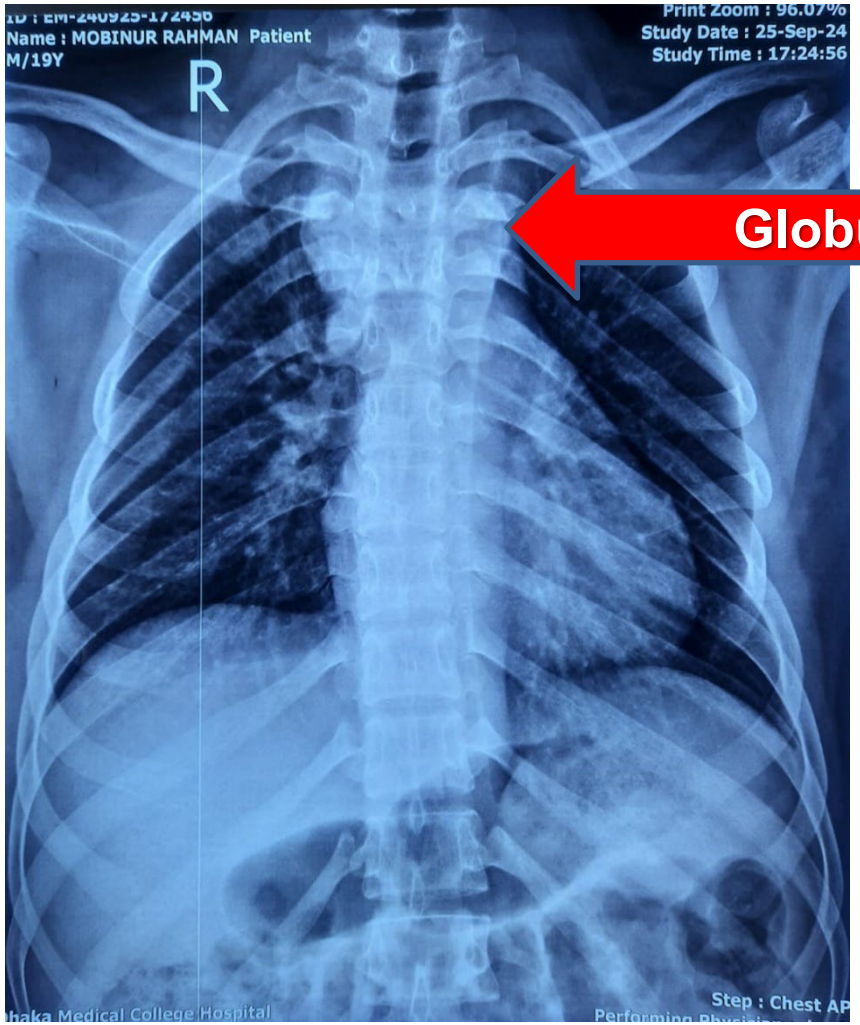
Investigation

Date	Hb	ESR	TC	DC
30.3.24	14.3 g/dl	58mm in 1st hour	9500	N-67,L-24,M-6,E-3
26.9.24	12.5 g/dl		9650	N-69.1,L-22.4,M-5.9,E-2.6
24.11.24	12.9 g/dl	08 mm in 1st hour	11500	N-78,L-17,M-4,E-1
14.12.24	11.5 g/dl	10 mm in 1st hour	9420	N-80.8,L-11.5,M-5.5,E-2.0

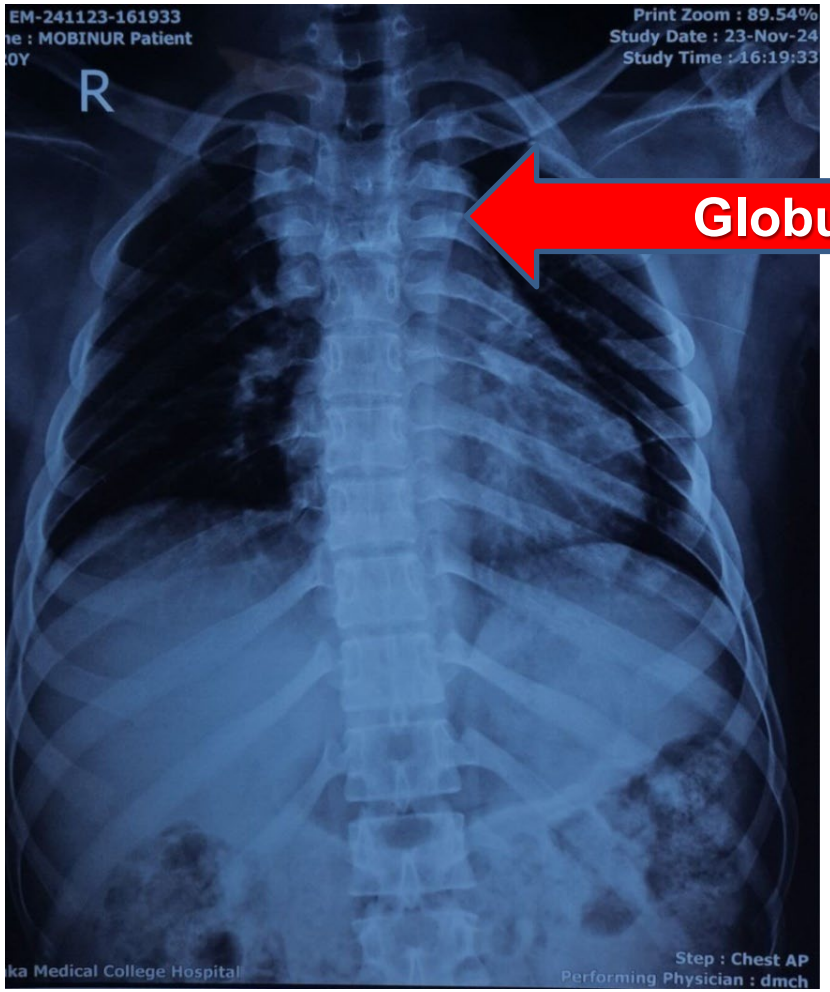
Investigation

Date	investigation	value
30.3.24	MT test	05 mm (negative)
	CRP	23.55 (positive)
26.9.24	RBS	5.3mmol/L
	S. Creatinine	1.21mg/dl
	Electrolytes	Normal
	HBsAg, Anti HCV, Anti HIV	Negative
23.11.24	RBS	3.3 mmol/L
	S. Creatinine	0.99 mg/dl
	CRP	6.2 mg/L

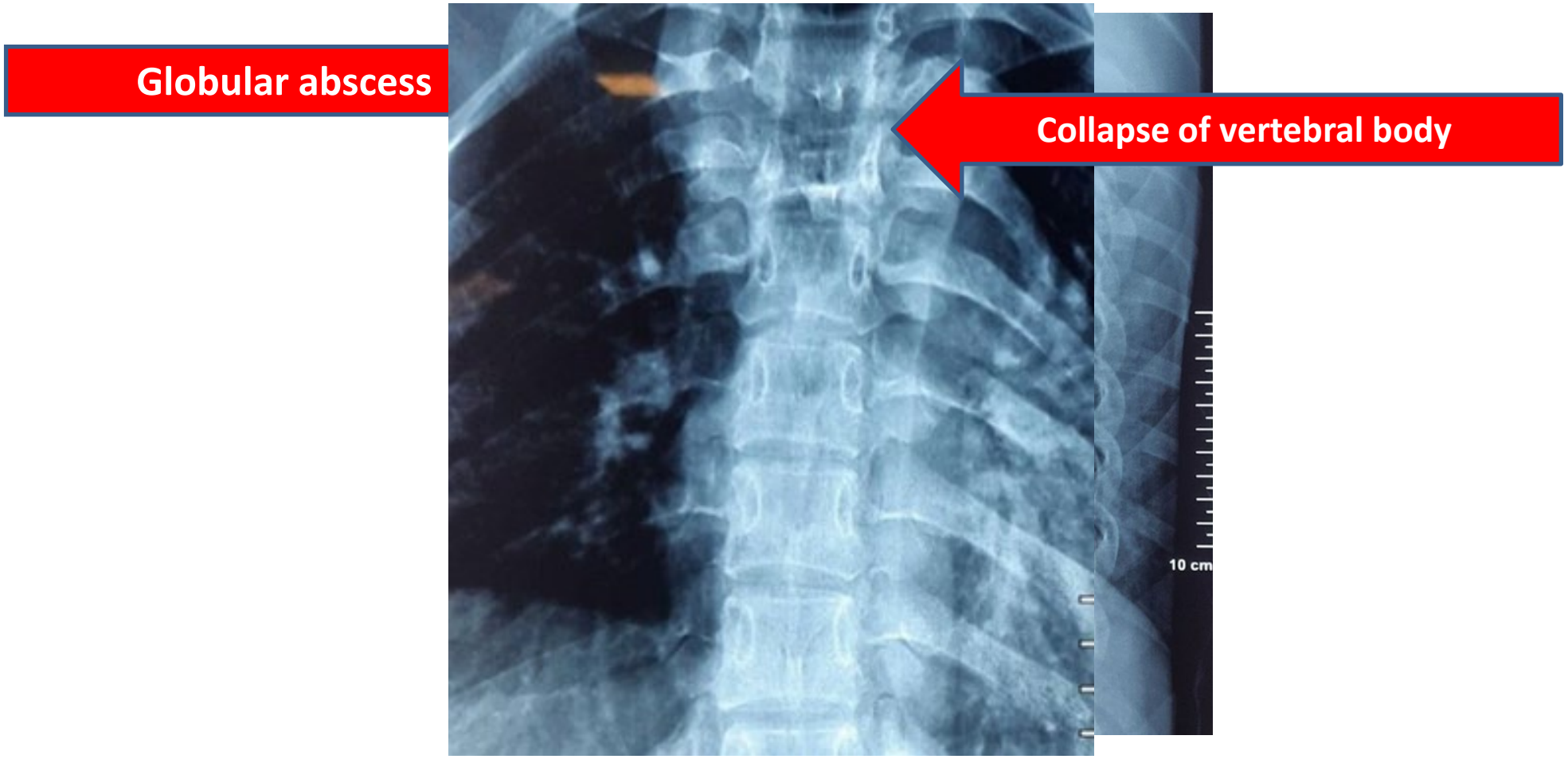
Chest X-ray (25.9.24)



Chest X-ray (23.11.24)

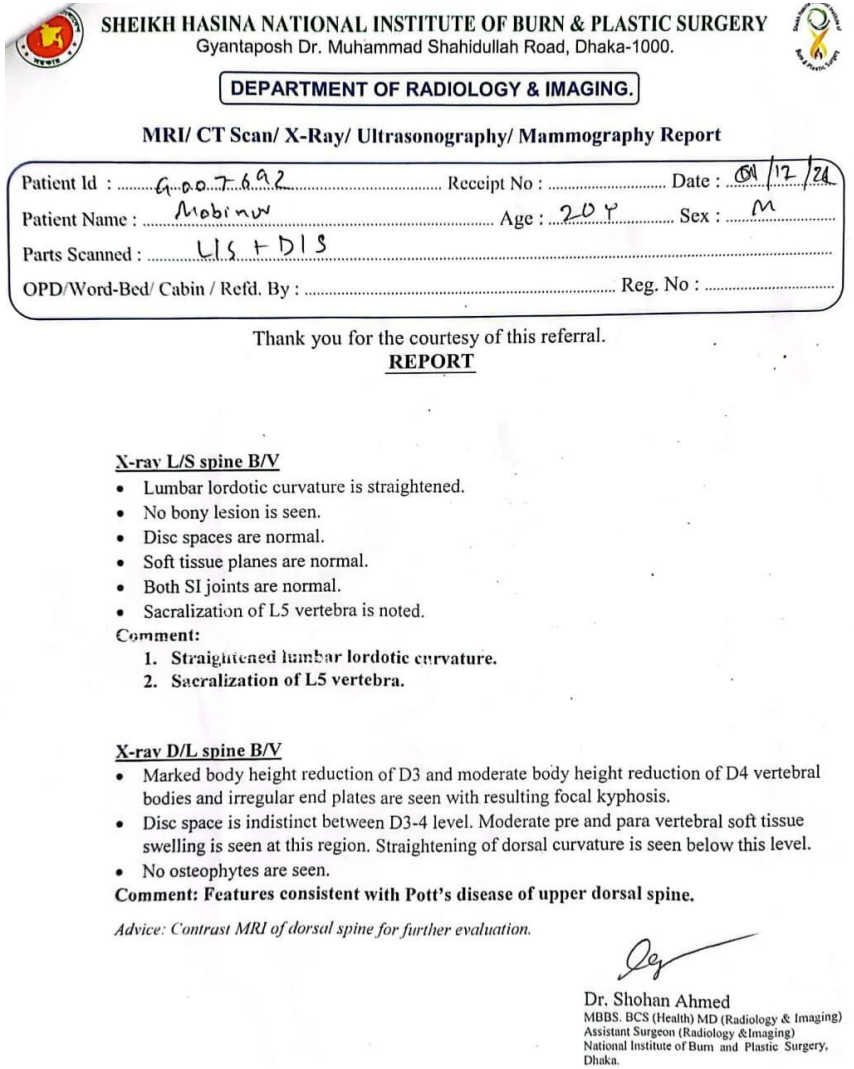


X-ray of dorsolumbar spine(23.11.24)



X-ray report

- Decreased height of D3, D4 vertebral body
- Disc space reduced D3, D4
- Moderate pre and para vertebral soft tissue swelling
- Straightening of dorsal curvature below this level
- Features consistent with Pott's disease of upper dorsal spine



SHEIKH HASINA NATIONAL INSTITUTE OF BURN & PLASTIC SURGERY
Gyantaposh Dr. Muhammad Shahidullah Road, Dhaka-1000.

DEPARTMENT OF RADIOLOGY & IMAGING.

MRI/ CT Scan/ X-Ray/ Ultrasonography/ Mammography Report

Patient Id : 400792 Receipt No : ..... Date : 01/12/24
Patient Name : Mobinur Age : 20Y Sex : M
Parts Scanned : L/S + D/S
OPD/Word-Bed/ Cabin / Refd. By : ..... Reg. No : .....

Thank you for the courtesy of this referral.

REPORT

X-ray L/S spine B/V

- Lumbar lordotic curvature is straightened.
- No bony lesion is seen.
- Disc spaces are normal.
- Soft tissue planes are normal.
- Both SI joints are normal.
- Sacralization of L5 vertebra is noted.

Comment:

1. **Straightened lumbar lordotic curvature.**
2. **Sacralization of L5 vertebra.**

X-ray D/L spine B/V

- Marked body height reduction of D3 and moderate body height reduction of D4 vertebral bodies and irregular end plates are seen with resulting focal kyphosis.
- Disc space is indistinct between D3-4 level. Moderate pre and para vertebral soft tissue swelling is seen at this region. Straightening of dorsal curvature is seen below this level.
- No osteophytes are seen.

Comment: Features consistent with Pott's disease of upper dorsal spine.

Advice: Contrast MRI of dorsal spine for further evaluation.

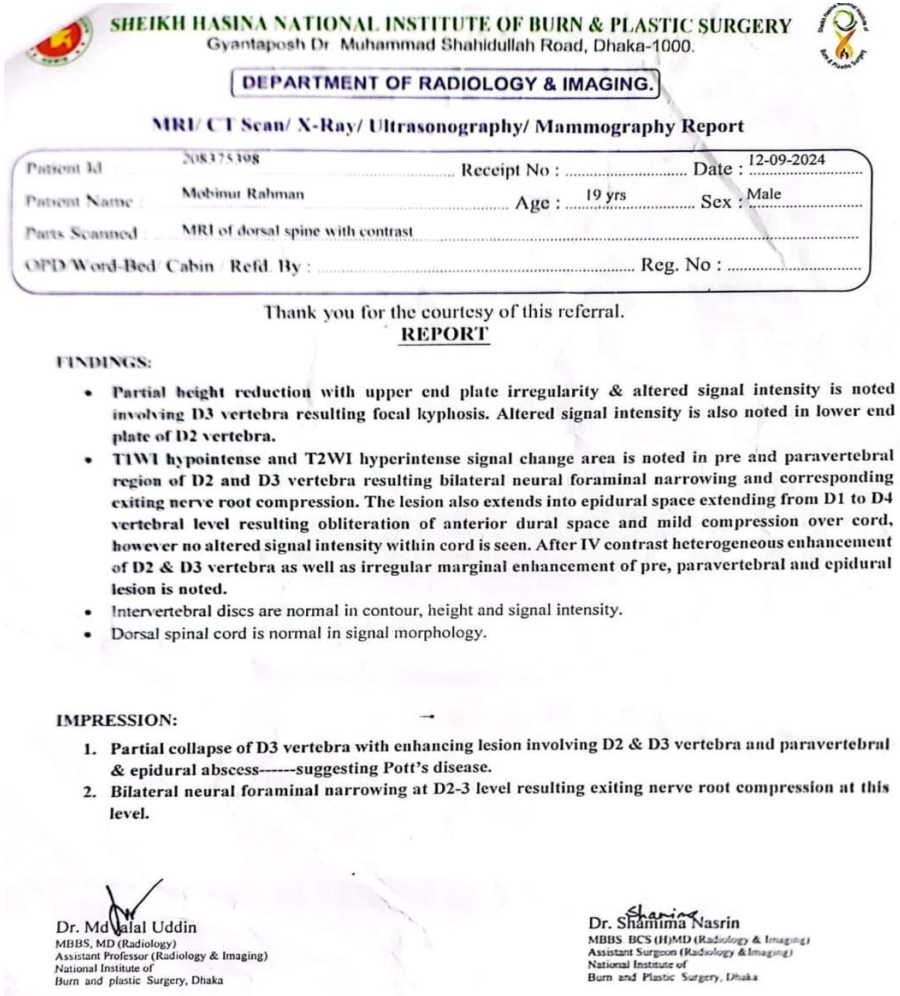
Dr. Shohan Ahmed
MBBS. BCS (Health) MD (Radiology & Imaging)
Assistant Surgeon (Radiology &Imaging)
National Institute of Burn and Plastic Surgery, Dhaka.

CT-scan report Continue…

- Lung parenchyma is normal
- Trachea and principal bronchus are normal
- No pleural effusion
- No mediastinal mass or lymphadenopathy
- Bony irregularity is noted in upper dorsal vertebrae with adjacent calcified soft tissue swelling

MRI Report (12.9.24) Continue…

- Partial collapse of D3 vertebra with enhancing lesion involving D2,D3 vertebrae and paravertebral and epidural abscess –suggesting Pott's disease



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Gyantaposh Dr. Muhammad Shahidullah Road, Dhaka-1000.

DEPARTMENT OF RADIOLOGY & IMAGING.

MRI/ CT Scan/ X-Ray/ Ultrasonography/ Mammography Report

Patient Id: 208375398 Receipt No : ..... Date : 12-09-2024
Patient Name : Mobinur Rahman Age : 19 yrs Sex : Male
Parts Scanned : MRI of dorsal spine with contrast
OPD/Ward/Bed/ Cabin Refd. By : ..... Reg. No : .....

Thank you for the courtesy of this referral.

REPORT

FINDINGS:

- **Partial height reduction with upper end plate irregularity & altered signal intensity is noted involving D3 vertebra resulting focal kyphosis. Altered signal intensity is also noted in lower end plate of D2 vertebra.**
- **T1WI hypointense and T2WI hyperintense signal change area is noted in pre and paravertebral region of D2 and D3 vertebra resulting bilateral neural foraminal narrowing and corresponding exiting nerve root compression. The lesion also extends into epidural space extending from D1 to D4 vertebral level resulting obliteration of anterior dural space and mild compression over cord, however no altered signal intensity within cord is seen. After IV contrast heterogeneous enhancement of D2 & D3 vertebra as well as irregular marginal enhancement of pre, paravertebral and epidural lesion is noted.**
- Intervertebral discs are normal in contour, height and signal intensity.
- Dorsal spinal cord is normal in signal morphology.

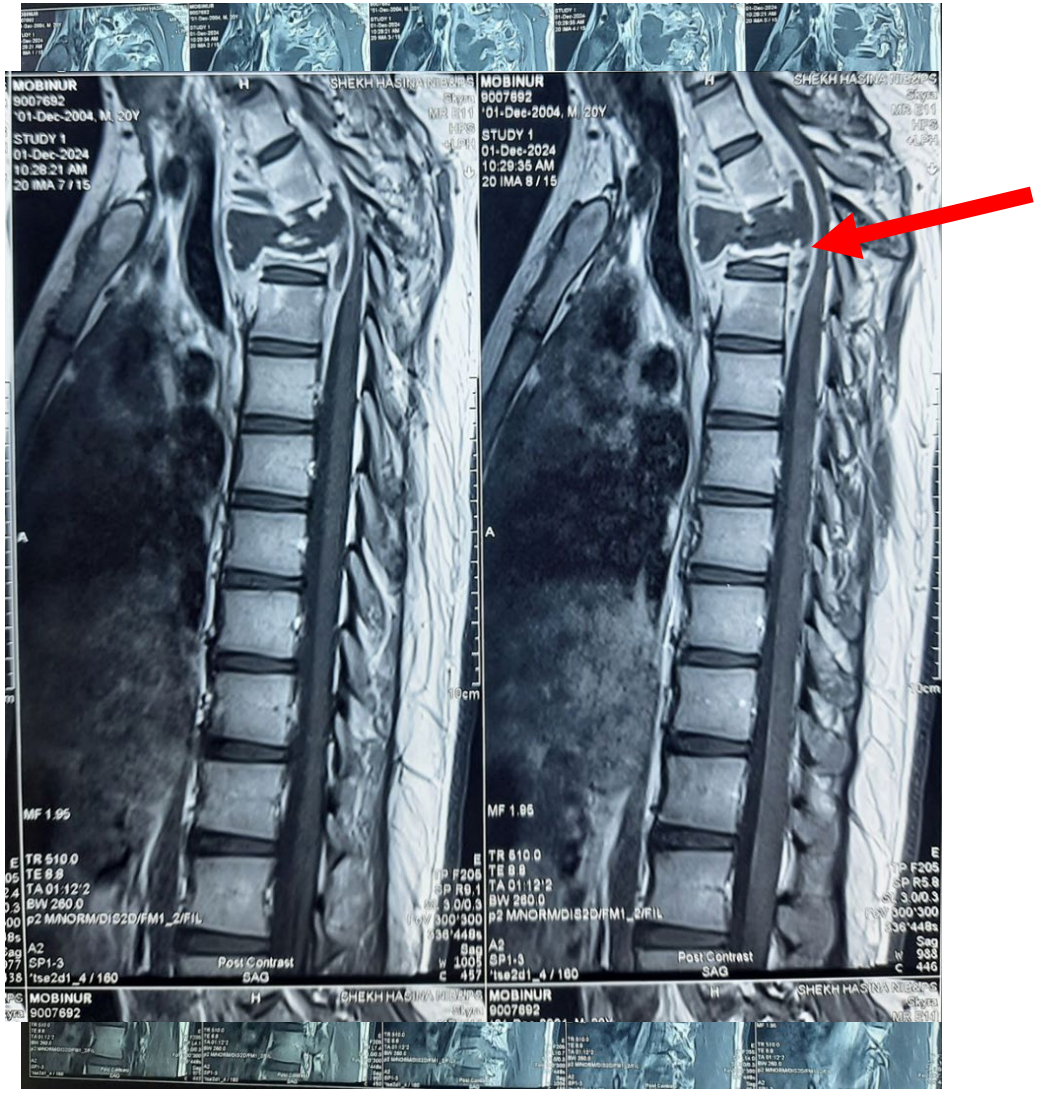
IMPRESSION:

1. **Partial collapse of D3 vertebra with enhancing lesion involving D2 & D3 vertebra and paravertebral & epidural abscess-------suggesting Pott's disease.**
2. **Bilateral neural foraminal narrowing at D2-3 level resulting exiting nerve root compression at this level.**

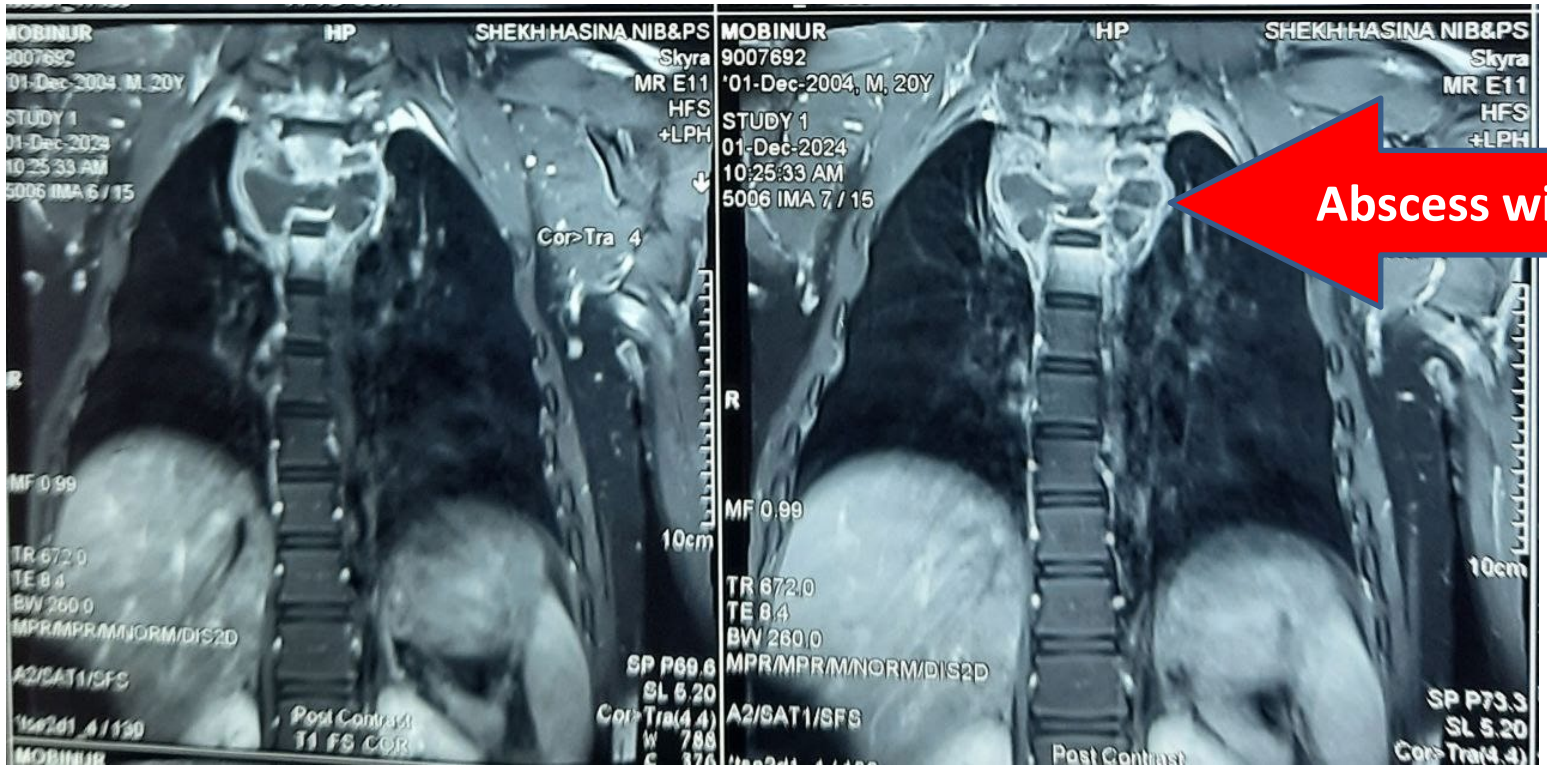
Dr. Md Jalal Uddin
MBBS, MD (Radiology)
Assistant Professor (Radiology & Imaging)
National Institute of
Burn and plastic Surgery, Dhaka

Dr. Shamima Nasrin
MBBS BCS (H)MD (Radiology & Imaging)
Assistant Surgeon (Radiology & Imaging)
National Institute of
Burn and Plastic Surgery, Dhaka

MRI dorsal spine(with contrast ,1.12.24)

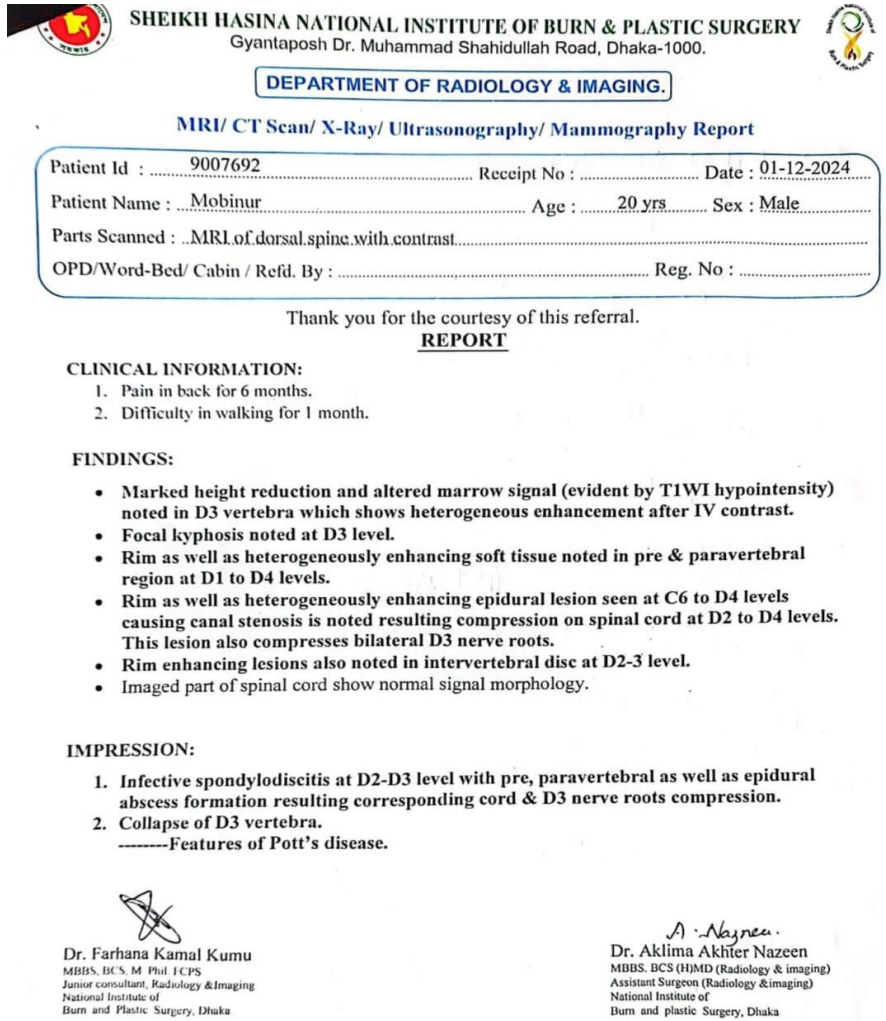


Coronal view (With contrast)



MRI report (1.12.24)

- Infective spondylodiscitis at D2-D3 level with pre, paravertebral and epidural abscess formation resulting compression on spinal cord and D3 nerve root compression
- Collapse of D3 vertebra, consistent with Pott's disease



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Gyantaposh Dr. Muhammad Shahidullah Road, Dhaka-1000.

DEPARTMENT OF RADIOLOGY & IMAGING.

MRI/ CT Scan/ X-Ray/ Ultrasonography/ Mammography Report

Patient Id : 9007692 Receipt No : Date : 01-12-2024
Patient Name : Mobinur Age : 20 yrs Sex : Male
Parts Scanned : MRI of dorsal spine with contrast
OPD/Word-Bed/ Cabin / Refd. By : Reg. No :

Thank you for the courtesy of this referral.

REPORT

CLINICAL INFORMATION:
1. Pain in back for 6 months.
2. Difficulty in walking for 1 month.

FINDINGS:
- Marked height reduction and altered marrow signal (evident by T1WI hypointensity) noted in D3 vertebra which shows heterogeneous enhancement after IV contrast.
- Focal kyphosis noted at D3 level.
- Rim as well as heterogeneously enhancing soft tissue noted in pre & paravertebral region at D1 to D4 levels.
- Rim as well as heterogeneously enhancing epidural lesion seen at C6 to D4 levels causing canal stenosis is noted resulting compression on spinal cord at D2 to D4 levels. This lesion also compresses bilateral D3 nerve roots.
- Rim enhancing lesions also noted in intervertebral disc at D2-3 level.
- Imaged part of spinal cord show normal signal morphology.

IMPRESSION:
1. Infective spondylodiscitis at D2-D3 level with pre, paravertebral as well as epidural abscess formation resulting corresponding cord & D3 nerve roots compression.
2. Collapse of D3 vertebra.
   --------Features of Pott's disease.

Dr. Farhana Kamal Kumu
MBBS, BCS, M Phil, FCPS
Junior consultant, Radiology &Imaging
National Institute of
Burn and Plastic Surgery, Dhaka

Dr. Aklima Akhter Nazeen
MBBS, BCS (H)MD (Radiology & imaging)
Assistant Surgeon (Radiology &imaging)
National Institute of
Burn and plastic Surgery, Dhaka

Clinical Diagnosis

Spastic paraplegia due to spinal tuberculosis at the level of D3-D4 with mild kyphotic deformity

Management plan

Treatment Plan

- Posterior decompression, drainage of pus, debridement of necrotic tissue and stabilization by pedicle screws and rods from D1, D2 to D5, D6 level.
- Tissue sent for histopathology & pus sent for gene xpert, AFB & for culture & sensitivity.
- Post-operative physiotherapy and continuation of anti TB drugs.

Operation note

- **Venue** : Orthopaedic modular OT
- **Date** : 11.12.24
- **Time** : 8.30 am to 12.00 pm
- **Indication :** Paraplegia due to TB spine @ D3,D4 level.
- **Operation :** Decompression by laminectomy of D3, D4 vertebra, drainage of pus, debridement of necrotic tissue, stabilization by pedicle screws and rods from D1,2 to D5,6 level.
- **Anaesthesia:** Under GA

Operating Table

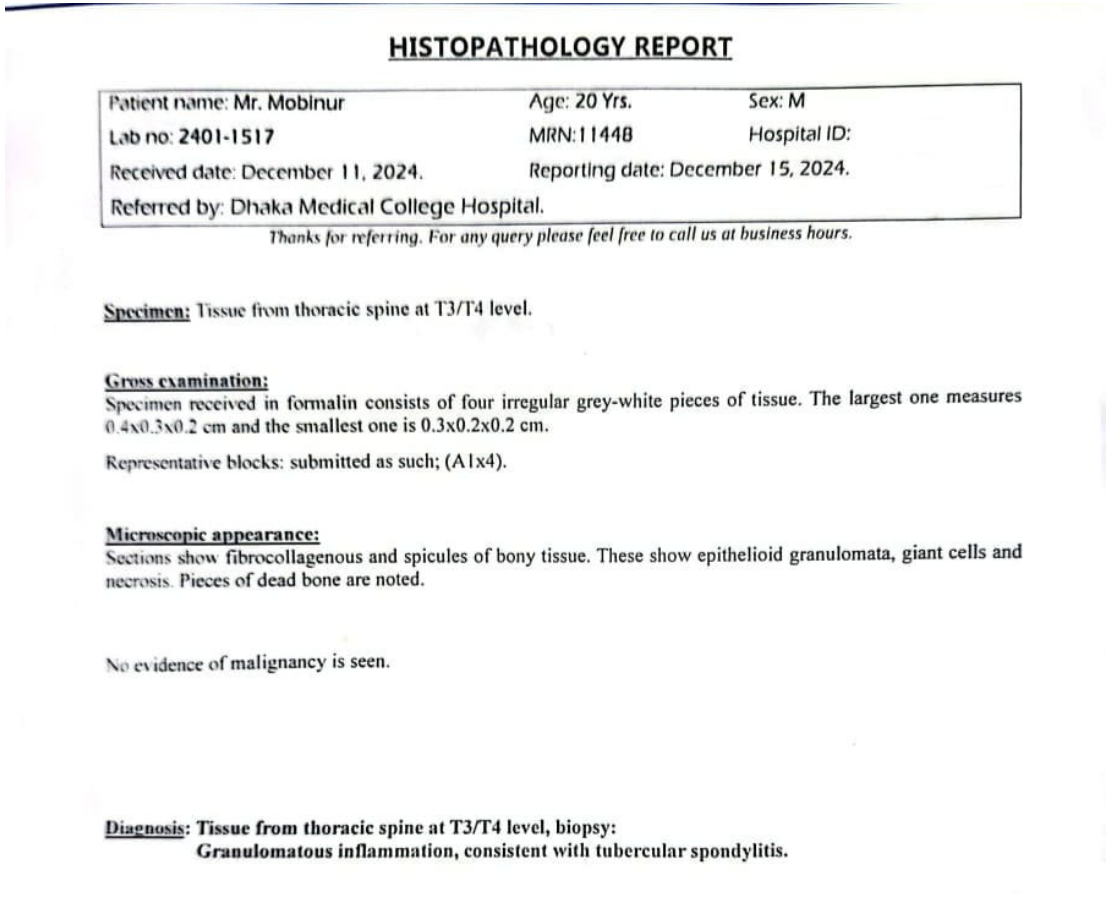
Draping

Skin & Subcutaneous dissection

Decompression and application of pedicle screws and rods

Histopathology Report

- Histopathology report - Granulomatous inflammation, consistent with tubercular spondylitis



HISTOPATHOLOGY REPORT

Patient name: Mr. Mobinur	Age: 20 Yrs.	Sex: M
Lab no: 2401-1517	MRN:11448	Hospital ID:
Received date: December 11, 2024.	Reporting date: December 15, 2024.	
Referred by: Dhaka Medical College Hospital.		

Thanks for referring. For any query please feel free to call us at business hours.

Specimen: Tissue from thoracic spine at T3/T4 level.

Gross examination:
Specimen received in formalin consists of four irregular grey-white pieces of tissue. The largest one measures 0.4x0.3x0.2 cm and the smallest one is 0.3x0.2x0.2 cm.

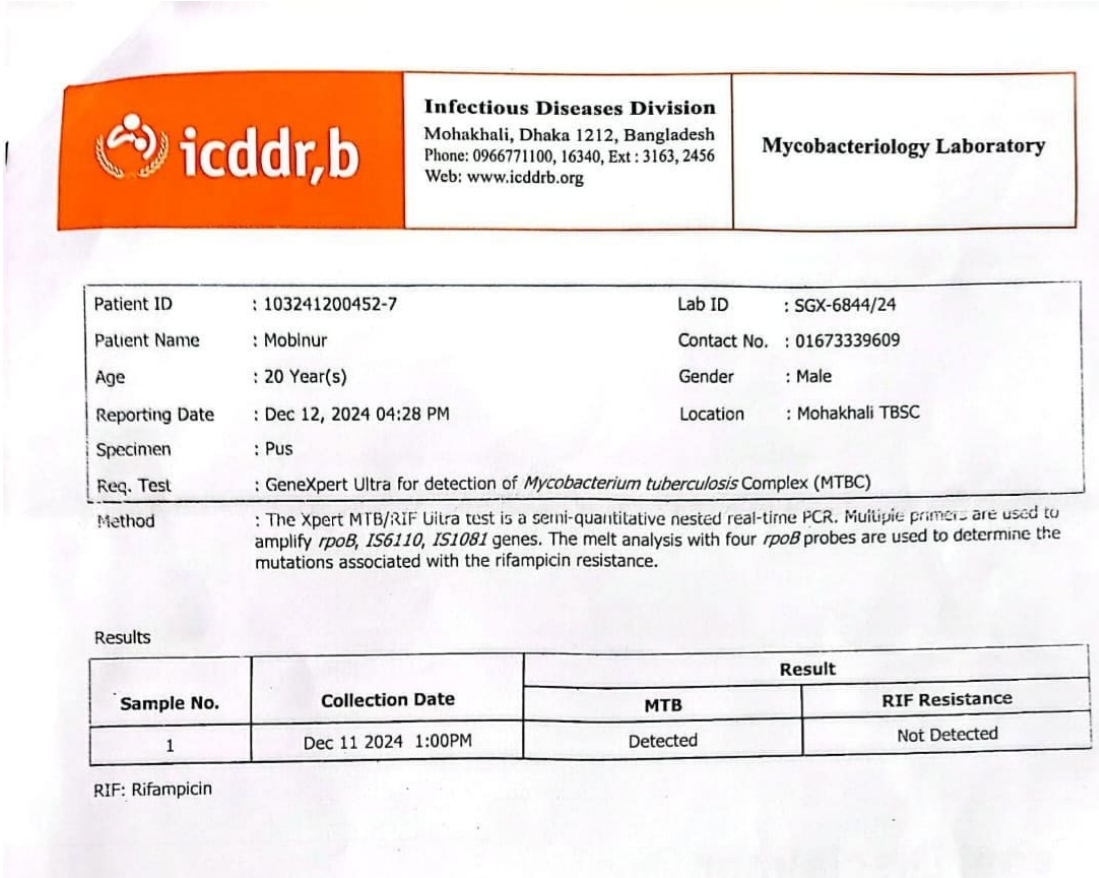
Representative blocks: submitted as such; (A1x4).

Microscopic appearance:
Sections show fibrocollagenous and spicules of bony tissue. These show epithelioid granulomata, giant cells and necrosis. Pieces of dead bone are noted.

No evidence of malignancy is seen.

Diagnosis: Tissue from thoracic spine at T3/T4 level, biopsy:
Granulomatous inflammation, consistent with tubercular spondylitis.

Gene Xpert report revealed MTB



icddr,b

Infectious Diseases Division
Mohakhali, Dhaka 1212, Bangladesh
Phone: 0966771100, 16340, Ext : 3163, 2456
Web: www.icddrb.org

Mycobacteriology Laboratory

Patient ID	: 103241200452-7	Lab ID	: SGX-6844/24
Patient Name	: Mobinur	Contact No.	: 01673339609
Age	: 20 Year(s)	Gender	: Male
Reporting Date	: Dec 12, 2024 04:28 PM	Location	: Mohakhali TBSC
Specimen	: Pus		
Req. Test	: GeneXpert Ultra for detection of *Mycobacterium tuberculosis* Complex (MTBC)		

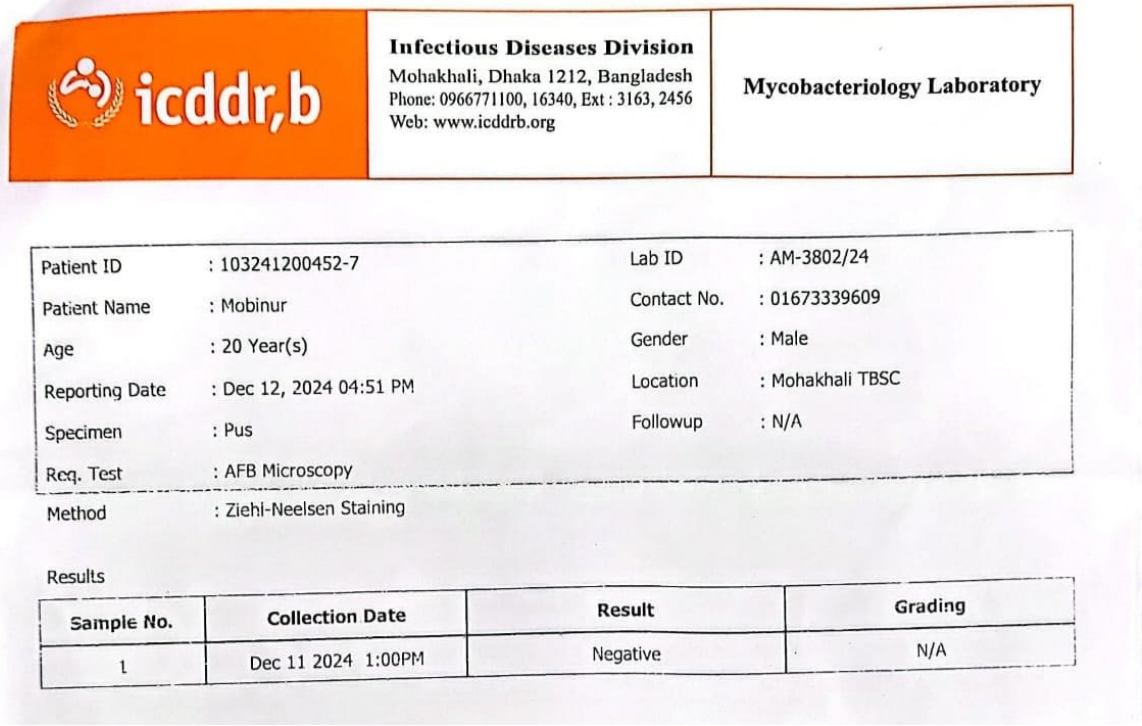
Method : The Xpert MTB/RIF Ultra test is a semi-quantitative nested real-time PCR. Multiple primers are used to amplify *rpoB, IS6110, IS1081* genes. The melt analysis with four *rpoB* probes are used to determine the mutations associated with the rifampicin resistance.

Results

Sample No.	Collection Date	Result	
		MTB	RIF Resistance
1	Dec 11 2024 1:00PM	Detected	Not Detected

RIF: Rifampicin

AFB staining report negative



icddr,b

Infectious Diseases Division
Mohakhali, Dhaka 1212, Bangladesh
Phone: 0966771100, 16340, Ext : 3163, 2456
Web: www.icddrb.org

Mycobacteriology Laboratory

Patient ID	: 103241200452-7	Lab ID	: AM-3802/24
Patient Name	: Mobinur	Contact No.	: 01673339609
Age	: 20 Year(s)	Gender	: Male
Reporting Date	: Dec 12, 2024 04:51 PM	Location	: Mohakhali TBSC
Specimen	: Pus	Followup	: N/A
Req. Test	: AFB Microscopy		

Method : Ziehl-Neelsen Staining

Results

Sample No.	Collection Date	Result	Grading
1	Dec 11 2024 1:00PM	Negative	N/A

Post-operative Period

- Passive exercise following the day of operation.
- Use of pneumatic bed, routine change of posture, respiratory exercise and catheter clamping
- Drain tube was removed on 3rd post-operative day and x-ray was done
- By using CTLSO brace, patient was allowed to seat & was encouraged to active exercise
- 02 weeks after operation, stitched was removed

Take Home Message

- Chronic back pain should be evaluated properly
- Spine is the most common site of extra-pulmonary tuberculosis
- Most of the TB spine is treated conservatively but sometimes operation is needed
- If Pott's paraplegia occurs don't lose hope. With spinal decompression and stabilization gives excelent outcome

Acknowledgement

- Department of Microbiology
- Department of Physical medicine & rehabilitation
- Department of Radiology and Imaging
- Department of Anaesthesiology
- Department of Pathology
- Department of Neurolgy