

Tubercular retropharyngeal abscess with compressive cervical myelopathy with tuberculous meningitis - A rare Case

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Citation this Article: Dr. Girish Soni, Dr. Abhijeet Gaikwad, Dr. Sumit Kharat, Punit Tayade, “Tubercular retropharyngeal abscess with compressive cervical myelopathy with tuberculous meningitis - A rare Case”, IJMSIR- December - 2021, Vol – 6, Issue - 6, P. No. 225 – 229.

Type of Publication: Case Report

Conflicts of Interest: Nil

Abstract

Tuberculosis (TB) is commonest infection in developing country like India. One of the many presentation of TB is meningitis, but Tubercular retropharyngeal abscess is very rare presentation of Tuberculosis. A retropharyngeal abscess is immediate life threatening emergency, with potential airway compromise and other catastrophic complication including compressive myelopathy. We report clinical, radiological and histological finding of symptomatic 17 years old female presented with quadriparesis due to cervical compressive myelopathy due to Tubercular retropharyngeal abscess with tuberculous meningitis.

Keywords: Tubercular Retropharyngeal abscess, Tuberculous meningitis, compressive high cervical myelopathy.

Introduction

India is country with highest burden of Tuberculosis. The World Health Organization (WHO) statistic of 2015 gives estimated incidence of 2.2 million cases of Tuberculosis in India out of global incidence of 9.6 million cases¹. TB Most commonly involves lung. Common site of extrapulmonary TB are lymph nodes, osteoarticular areas, abdominal organs and central nervous system. In view of its unusual presentation, diagnosis of extrapulmonary can be difficult and high index of suspicion is required. Though TB Meningitis is common, it's association with Tubercular Retropharyngeal abscess is rare. Again, Tubercular Retropharyngeal abscess are mainly secondary to TB spine due to spread of infection hematogenously via batson's plexus². Here we want to draw attention to rare presentation of Tuberculosis as TB Meningitis with

Tubercular retropharyngeal abscess causing compressive cervical myelopathy and non-traumatic atlanto axial dislocation. Chronic tubercular retropharyngeal abscess is rare in immunocompetent adults especially without spine involvement⁵. Tubercular retropharyngeal abscess requires prompt diagnosis and early management which frequently involves surgical drainage with antibiotics and anti-tubercular treatment.

Case Report

17 Years old, right-handed female came with complains of weight loss since 2 months. Patient also had headache since 2 months which was localized to posterior part. There was history of low grade, on and off fever with no diurnal variation since 2 months. Patient developed neck pain for 1 month which was gradual in progression and developed painful restricted neck movements since few days. Patient consulted to local doctors for the same complaints and had given symptomatic treatment. Patient developed sudden onset of right sided hand weakness while doing her routine activities since 7 days followed by left leg stiffness while walking since 7 days. She was brought to hospital where she was admitted. Basic investigation was done including CT scan of brain which was normal. She developed all four-limb weakness followed by breathlessness since 2 days and developed sudden onset of altered sensorium since 1 day and hence was referred to Higher center for further management.

Patient was evaluated and investigated. There was no history of cough, hemoptysis, chest pain, foreign body impaction, ear discharge, odynophagia, dental extraction, vomiting or convulsions. There was no history of Tuberculosis in past. On clinical examination, there were no signs of anemia, Jaundice,

cyanosis or clubbing. Vitals were stable with pulse -72 /min, Blood pressure – 122/70 MMHG Respiratory rate 16 cycles/min. There was no bony tenderness or swelling in cervical spine but the neck movements were painful and restricted. Nervous system examination revealed, Patient was Arousable. There was no cranial nerve involvement. Tone was increased in all four limbs. Deep tendon reflexes were exaggerated in all four limbs. Ankle clonus was present with positive Babinski's. Power was 2/5 in all four limbs. Examination of cardiovascular and respiratory system does not show any abnormality.

On investigation, Hemoglobin level was 11.2 g/dl , WBC Count – 11, 500/mm³. Renal function test and Liver function test were within normal limits. Erythrocyte sedimentation rate at 1stHour was 102 mm. X ray chest was suggestive of normal findings. USG abdomen was done and was findings were within normal limits. Fundoscopic examination of bilateral eyes was normal. Pt's x ray neck was done and was suggestive of atlanto -axial dislocation (Fig 2). Lumbar puncture was done after taking valid consent and was suggestive was neutrophilic predominance but raised ADA level. Patient was started on CAT I AKT. MRI brain with cervical spine screening was done and was suggestive of large retropharyngeal abscess compressing corticomedullary junction and from C1 to C3 level with significant cord edema (Fig 1) . ENT surgeon and Neurosurgeons were consulted and Trans Oral incision and Drainage of Retropharyngeal abscess was done. Patient was tracheostomied in view of respiratory failure due to diaphragmatic involvement and was kept on ventilatory support in Intensive Care Unit. No surgical intervention could be done for spine stabilization and Patient's neck was immobilized with

hard cervical collar as a conservative management. Pus was examined for Routine microscopy and was found to have Lymphocytic predominance. Gen Xpert for Pus aspirated from retropharyngeal abscess shows Mycobacterium Tuberculosis bacilli and Hence Diagnosis of Tubercular retropharyngeal abscess was established.



Fig. 1: T2w MR Cervical spine suggestive large Retropharyngeal abscess compressing Corticomedullary junction and Cervical cord



Fig 2: x ray cervical spine suggestive of atlanto-axial dislocation

Pt was continued CAT I AKT as PUS for gene Xpert for MTB done and no Rifampicin resistance was

detected. PUS culture for MTB Was negative. patient regain consciousness within 3 days of starting anti-tubercular therapy. Patient developed ventilator associated pneumonia and started on higher antibiotics accordingly tracheal culture sensitivity report. But in spite of all measurements patient could not be survived and died due to sepsis and shock.

Discussion

A retropharyngeal abscess is an infection in one of the deep spaces of neck. An abscess in this location is immediate life threatening emergency, with potential for airway compromise and other catastrophic complications⁷. Complications of retropharyngeal abscess are secondary to mass effect, rupture of abscess or spread of infection. The rupture of abscess can cause aspiration of pus resulting in asphyxia or pneumonia. Infection can spread resulting in inflammation and destruction of adjacent tissue. Posterior spread of infection can result in osteomyelitis, and erosion of spinal column causing subluxation or dislocation as in our case where she developed atlanto axial dislocation due to posterior spread of abscess⁷. Chronic retropharyngeal abscess occurs in adults and cause is always and almost is tuberculosis. Retropharyngeal tuberculosis is rare presentation of extra pulmonary tuberculosis⁸ and its association with tuberculous meningitis in absence of Pulmonary involvement is very rare. Retropharyngeal abscess in adults is usually secondary to tubercular involvement of cervical spine². Symptoms in adults are sore throat, fever,odynophagia, neck pain and dyspnoea as in our case. Route of spread of tuberculosis could be due to retropharyngeal space, via lymphatics, to persistent retropharyngeal lymph node. A haematogenous spread can also occur from pulmonary tuberculosis or from any other site⁹.

The diagnosis of tuberculous retropharyngeal abscess is based on careful patient's history and examination along with a high index of clinical suspicion.

The diagnosis of retropharyngeal abscess is further supported by radiological imaging which plays an important role in assessing extent of disease and possible damage to important structures such as cervical spine. A CT scan can accurately differentiate cellulitis from abscess with an accuracy of 89%¹⁰.

MRI provides a better delineation of soft tissues in the neck and is very useful in assessing vascular complications such as internal jugular vein thrombosis¹¹. Pathophysiology explained for atlanto-axial dislocation may be inflammatory ligamentous laxity of transverse ligament and Atlanto-axial joint¹⁵. No single report has been reported in Indian patients with non-traumatic atlanto-axial dislocation due to tuberculous retropharyngeal abscess without pulmonary involvement as per best of our knowledge.

In a case of tubercular retropharyngeal abscess with neurological complication, recovery does occur following prompt drainage and anti-tubercular therapy. In our case transoral drainage of abscess was done and decompression was achieved.

As in any abscess, the mainstay of treatment of tubercular retropharyngeal abscess is drainage of pus. Surgical drainage of pus through oral, cervical or combined oral and cervical routes has been described¹². Therapeutic ultrasound-guided aspiration has been used successfully and can be repeated if necessary. The standard recommended regimen is 6 months of isoniazid and rifampicin, supplemented in the first 2 months with pyrazinamide and ethambutol for pulmonary TB¹³. For extrapulmonary TB including bone involvement

recommended duration of antitubercular medication is 9-12 months¹⁴.

References

1. "Global Tuberculosis Control 2015, WHO, Geneva, 2015 www.who.int/tb/publications/global_report.
2. Singh J, Velankar H, Shinde D, Chordia N, Budhwani S. Retropharyngeal abscess without Pott's spine. *S Afr J Surg.* 2012;50:137-9.
3. Marques PM, Spratley JE, Leal LM, Cardoso E, Santos M. Parapharyngeal abscess in children: Five year retrospective study. *Braz J Otorhinolaryngol.* 2009;75:826-30.
4. Wong KK, Fang CX, Tam PK. Selective upper endoscopy for foreign body ingestion in children: An evaluation of management protocol after 282 cases. *J Pediatr Surg.* 2006;41:2016-8.
5. Harkani A, Hassani R, Ziad T, Aderdour L, Nouri H, Rochdi Y, et al. Retropharyngeal abscess in adults: Five cases reports and review of the literature. *Scientific World Journal.* 2011;11:1623-9.
6. Moghtaderi A, Alavi-Naini R, Rashki S. Cranial nerve palsy as a factor to differentiate tuberculous meningitis from acute bacterial meningitis. *Acta Med Iran.* 2013 Mar 16. 51(2):113-8.
7. Todd J Berger. Retropharyngeal abscess. Available at: www.eMedicine.com.
8. Meher R, Agarwal S, Singh I. Tuberculous retropharyngeal abscess in an HIV patient. *Hong Kong Med J.* 2006;12:483-5.
9. Colmenero JD, Jiménez-Mejías ME, Reguera JM, Palomino-Nicás J, Ruiz-Mesa JD, Márquez-Rivas J, et al. Tuberculous vertebral osteomyelitis in the new millennium: Still a diagnostic and therapeutic

- challenge. *Eur J Clin Microbiol Infect Dis.* 2004;23:477–83.
10. Miller WD, Furst IM, Sandor GK, et al. A prospective, blinded comparison of clinical examination and computed tomography in deep neck infections. *Laryngoscope* 1999;109:1873–9
 11. Gidley P, Ghorayeb B, Stiernberg C. Contemporary management of deep neck space infections. *Otolaryngol Head Neck Surg* 1997;116:16–22
 12. Schuler PJ, Cohnen M, Greve J, et al. Surgical management of retropharyngeal abscesses. *Acta Otolaryngol* 2009;129:1274–9.
 13. Nalini B, Vinayak S. Tuberculosis in ear, nose and throat practice: its presentation and diagnosis. *Am J Otolaryngol* 2006;27:39–45
 14. Treatment of tuberculosis: guidelines 4th edition. WHO/HTM/TB2009.420:95
 15. Robertson S, Pinestein MI, Lavelle Dg. Non-Traumatic Atlantoaxial Subluxation In An Adult Secondary To Retropharyngeal Abscess. *Orthopedics* 1987;10: 1545-1547