



ARTICULAR TUBERCULOSIS OF CERVICAL SPINE - a case report BABU ALOY

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Abstract : Upper cervical spine tuberculosis is rare , occurs in 0.3 to 1 of all patients with tuberculous spondylitis.(5) It is often overlooked or misdiagnosed for a considerable period of time until a more obvious and potentially dangerous complication develops. A 29 yrs old male, admitted with pain over neck and incomplete quadriplegia, radiological and haematological investigations revealing upper cervical spine tuberculosis was treated with ATT and trans-articular fixation of C1C2 (Magerl) to correct atlanto-axial instability, following which the patients neurological sequelae improved

Keyword : upper cervical spine tuberculosis, Magerl, Atlanto-axial instability.

INTRODUCTION:

Upper cervical spine tuberculosis is uncommon and accounts for approximately less than 1 % of spinal tuberculosis. The infection involves the atlas, axis and rarely the occiput. The clinical presentation ranges from early non-specific insidious symptoms to severe neurological complications, which are due to cranio cervical junctional instability and cervicomedullary compression. Management strategies include, non-operative treatment with traction ,cervical spine immobilization and anti-tuberculous therapy. Surgical stabilization is recommended in patients with severe or persistent neurological complications and atlanto-axial instability. Surgical recommendations include both anterior and posterior procedures in patients with atlanto - axial tuberculosis.

PATIENT HISTORY:

A 29 years old male admitted with c/o pain and swelling over the neck for six months duration , inability to use both UL for two weeks duration and inability to walk – three days duration. weakness was gradual in onset and progressive. H/ o loss of appetite & weight and h/o evening rise of temperature was present.

CLINICAL FINDINGS:

O/E Tenderness at the upper cervical spine C2-C4, with paraspinal spasm and restricted neck movement was noticed. Neurological examination revealed a normal bulk, tone was increased and power in upper limb was 3/5 ,hand grip was 60%. Lower limb power was 3/5 ,with exaggerated DTR over upper limbs and lower limbs.

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Ankle clonus was present with extensor plantar reflex and patchy sensory loss at C5 level .Bladder and bowel sensations normal.

INVESTIGATIONS:

Hb 9.4 gm%, TC - leucocytosis, Renal and Liver function tests normal. ESR elevated (110/hr).

Serum protein Normal . Mantoux positive. HIV Non –reactive.

Fig 1 : X-RAY CERVICAL SPINE: LATERAL VIEW:

Loss of cervical lordosis. increased soft tissue shadow over C3-C6 .

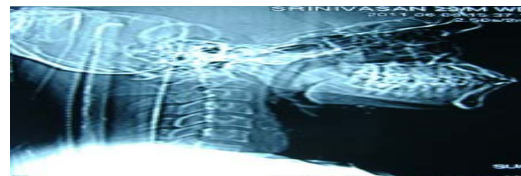


Fig 2: OPEN MOUTH VIEW-Dens shifted to right side

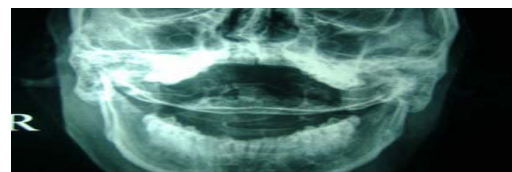
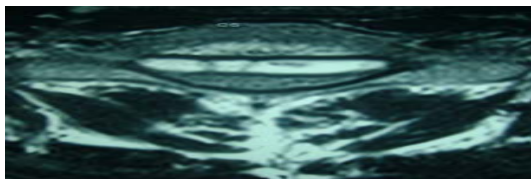


Fig 3 :MRI CERVICAL SPINE



Fig 4:



MRI:Erosive changes with marrow edema of C1 ,more on left side with increased atlanto -dens distance(4.5mm) and dens subluxated posteriorly causing indentation of csf spaces without any impingement over cord-suggestive of tubercular arthritis of atlanto axial joint. On T1 & T2 Elongated , septated hyperintense signal lesion extends from C1 level to D2 level in anterior epidural space displacing the cord posteriorly and compressing the cord to the corresponding level.T2 hyperintensity -s/o marrow infiltration

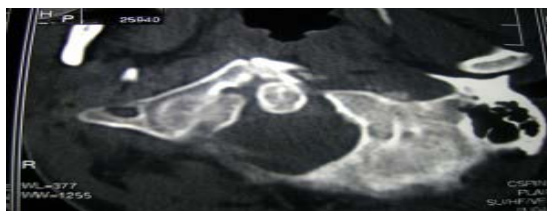
IMPRESSION: Tuberculous spondylitis with arthritis with epidural abscess from C1to D2 level.

CT CERVICAL SPINE

Fig 5:



Fig 6:



CT CERVICAL SPINE: Erosion of posterior arch of C1.osteoarthral changes in C1&C2 facet joints.

TREATMENT : He was treated conservatively by strict bed rest ,Philadelphia collar, anti-tuberculous therapy with CAT I, analgesics and steroids. His neurological status deteriorated after three weeks of ATT and surgical stabilization was planned

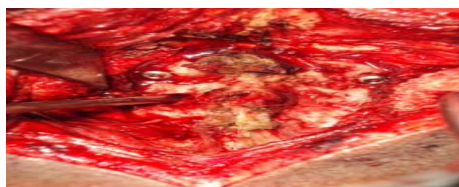


Fig 7

"TRANSARTICULAR SCREW FIXATION OF C1& C2 (MAGERL FUSION) WITH HEMI LAMINECTOMY OF C3,C4 & C5 "

Under GA ,patient in prone position, under fluoroscopic visualization, reduction achieved with neck in flexion.skin incision made over midline from occiput to C5 vertebra. ligamentum nuchae incised.

Paraspinal muscles retracted bilaterally exposing posterior arch of C1 to the C2-C3 facet joint. Joint capsule incised and articular facets debrided .Under Fluoroscopic visualization, with 2 mm k-wire entry made 3 mm lateral to medial border of pedicle and 2 mm above the lower edge of inferior articular process of C2. The wire is advanced through the lateral mass and superior facet of C2 until the superior margin of C1 .

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3.5mm cortical screws (36 size) inserted. Foraminotomy done between C2&C3. Decompression done on left side by Hemilaminectomy of C3C4C5 .wound wash given and wound closed in layers with drain. sterile dressing applied. Philadelphia collar applied.

OUTCOME:

In the immediate post op ,there is no change in neurological status but there is a subjective decrease in numbness over the limbs. At the end of one week, shoulder power 4/5,elbow,wrist 5/5 and hand grip was 100%.lower limbs power 5/5 reflexes normal and plantar flexor. The patient who was admitted with incomplete quadriplegia with worsening neurological status is now ambulant without support.

Fig 8:



Fig 9:



FOLLOW UP: AFTER 15 MONTHS OF FOLLOW UP
(Fig 10, 11, 12)

Fig 10:

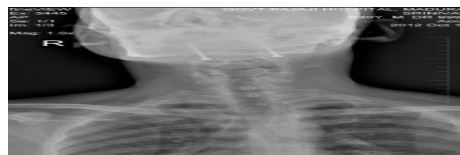


Fig 11:



Fig 12:



CT AFTER 15 MONTHS (fig 13, 14)

Fig 13:

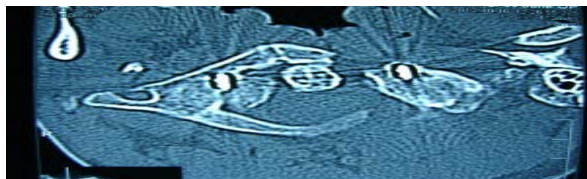


Fig 14:



CLINICAL OUTCOME (Fig 15, 16, 17, 18)

Fig 15:



Fig 16:



Fig 17:



Fig 18:



DISCUSSION:

Cervical tuberculosis is a rare disease with a high complication rate. associated with 42.5 % of cord compression. (1) children younger than 10 yrs of age were more likely to develop cold abscess whereas more than 10 yrs of age develop quadriplegia. The cause of the neurological deficit may be

- 1) compression by the abscess
 - 2) atlanto-axial subluxation
 - 3) upward translocation of odontoid
 - 4) tubercular invasion of cord or vascular ischaemia.
- LIFESCO (1) staged tuberculous lesion of cervical spine and recommended various treatment according to their stages. Stage I- minimal bone & ligamentous destruction -transoral biopsy, decompression and immobilization in orthosis. stage II- ligamentous destruction, minimal bone loss and anterior displacement of C1 over C2 -transoral biopsy and decompression, followed by reduction with halo traction and later C1-2 posterior fusion stage III- Marked ligamentous and bone destruction with C1-2 displacement -transoral biopsy and decompression, followed by reduction with halo traction and

later occiput to C3 posterior fusion Despite being very rare, atlanto-axial tuberculosis carries the risk of instability and neurological compromise. A high index of suspicion is thus necessary, particularly in endemic areas, when patients present with neck pain. Though conservative management yielded full neurological recovery, atlanto-axial stability and resolution of the soft tissue abscess, surgical stabilisation should be reserved for severe osseoligamentous destruction and instability

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