

Surgical Management of Tuberculosis of the Spine

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Tuberculosis is fairly common in the developing countries, though it is in decline. Though majority are treated in orthopedic clinics, those with neurological involvement attend neurosurgical clinics. Controversy between surgical versus conservative therapy is going on for several decades. As a result a new method has evolved called middle path regime. The fourth method is surgery and ambulation of the person with short term therapy especially for joint and bone tuberculosis. But it is still under trial. At NIMHANS it has been a policy to treat conservatively where there are no neurological deficits. Surgery will be considered if there is neurological deficits, or deterioration while on conservative therapy or instability of spine if present. In a few, surgery may have to be considered early if they express their desire of early ambulation or inherent resistance in wearing external appliances or to stay in bed for a long time. This I would like to call it as 5th line of treatment. Wherein, compromise is made with patients requirements but not with the disease. Isolated lesions of posterior elements transverse process can be readily treated by surgery.

Since 1956 we have encountered 480 patients with cord compression of which 47 had pathology in the cervical region. Commonest age of presentation is 2nd and 3rd decades followed by 5th and 6th decades. There is a female preponderance in our study. C 5-6 is the commonest level followed by C 3-4. Symptoms can vary from one month to an year.

*Table 1**Table 1*

Management

All patients with neurological deficits were considered for surgery. They were investigated and started on antituberculous drugs (Streptomycin, INH and Ethambutol). Myelogram was done wherever the plain x-rays are not very informative or the clinical presentation is like a tumour syndrome. Tomograms were done in upper cervical lesion to delineate the extent of the disease clearly. CT scans were not performed in the present study.

Traction was given to all especially if there is displacement or dislocation. Variety of surgical procedures were adopted depending on the clinical situation.

*Table 2 - Surgical procedures**Table 2 - Surgical procedures*

We have developed this anterolateral decompression in preference to the sternal splitting incision because of simplicity and easier technique. During anterior decompression all the granulation tissue need to be cleared upto the normal tissue. At the time of insertion of graft, increase in traction will be

of great help. We make a gutter and place the graft to attain proper fixation of graft. Once traction is reduced the graft gets locked. In children rib grafts were used. Traction will be continued till the date of suture removal. Patient will stay in bed for 6 weeks with cervical collar. During this tissue healing is expected and it is confirmed by radiology. As neurological status also improves they will be mobilized with a collar. X-rays will be repeated every 6 weeks. Once the graft is consolidated the collar is removed. Close follow up will be advised till 2 years. At the end if the condition is stable they will be allowed for normal work.

Pathology

Ninety five percent of our cases had combination of granulation + sequestration and abscess. At surgery we had encountered the following surprises like - Salmonella infection, Eosinophilic granuloma, Non specific granulation tissue, Coccidioidomycosis infection and Secondary deposit. They all need to be differentiated as they can be mistaken for tuberculosis. In a study these surprising lesions at surgery constitute 6% out of 200 tuberculous lesions.

Results

Forty four patients were on follow-up. Maximum duration was 15 years. Majority had 2-5 years follow-up. No set pattern was found to correlate improvement in neurological state to pathology and degree of deficit. Recovery was early when the duration of neurological deficits was shorter.

Seventy seven percent showed full recovery. In 7% cases recovery was slow. Recovery is good in all where decompression was adequate. No one deteriorated in this series.

Mortality:

Three patients died in this study, one each after 24 hours, 48 hours and 14 days. All of them had respiratory paralysis. The lesion was at C 3-4 in two and other at C 6-7.

In two instances graft had slipped. No neurological worsening was seen after surgery. Two cases had superficial wound infection. In 7.7% residual neurological deficits persisted.

Conclusions

Aggressive, complete anterior decompression with grafting offers definite relief of compression, confirms diagnosis and offers stable spine at the earliest in tuberculous disease of cervical spine whenever there is significant neurological deficit. Socio-economic condition of the community will justify this approach in view of early ambulation and early return to work with use of appliances. Surgery is mandatory wherever diagnosis is in doubt.