

Different Treatment Modalities for the Management of Spinal Tuberculosis

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ABSTRACT

Objective: To study the rationale of different treatment modalities of caries spine, anti tuberculus therapy (ATT), abscess drainage, spinal cord decompression and stabilisation.

Materials and Methods: In this descriptive study number of patients were 132 conducted in the department of neurosurgery Lady Reading Hospital, Peshawar. From Dec.2008 to Dec. 2012.

Results: Local spinal pain was relieved in 98.5%, tenderness improved in 97.7%, Paresis and plegia in 81.1%, Kyphotic deformity reduced in 43.2%, approved sphincter functions improved in 40.6% cases. Morbidity was 2.3% and mortality (0.8%). Surgical procedure was abscess drainage in 8% and anterior decompression and stabilization was in 61% cases. All patients were treated with standard ATT regimen 4 drugs for 2 to 3 months and 3 drugs for 10 – 16 months and analgesics and followed for 18 months. Male were 83 (62.9%), female 49 (37.1%) minimum age 3years, maximum 70 years and mean \pm SD 30 ± 15 years. Inclusion criteria: Patients having spinal TB. Exclusion criteria: Spinal pyogenic infection, metastasis and metabolic bone diseases. Informed consent and ethical committee approval was taken. Diagnosis was made on history and clinical examination of local tenderness, kyphotic deformity, paraparesis / plegia, tetraparesis / plegia and sphincter dysfunction. Investigations were x-ray chest, spine 3D CT and MRI. Erythrocyte sedimentation rate (ESR) and biopsy of the necrotic materials were done. Patients were treated with stanandard ATT, neurological improvement and radiological stability was assessed. Patients were divided in Group – A: Only ATT or abscesses drainage and ATT. Group-B: Spinal decompression and stabilisation with ATT. All information were recorded on a proforma. Data was analyzed using SPSS version 19.

Conclusions: Early diagnosis and treatment had excellent outcome. Dorso-lumbar spine involvement and young age was common. Advanced cases needs multimodal therapy (medical, surgical and supportive). Some degree of kyphotic deformity still remained.

INTRODUCTION

The history of TB goes back to 5000 B.C. Sir Percival Pott in 1782 for the first time described the painful kyphotic deformity of spine. TB is a great problem in developing countries and now in developed countries also. 1/3 of world population has TB bacilli in the system, only 16 million have the disease. In Pakistan 2.8 million patients have TB and one Lac are added each year. About 1 – 5% of TB patients develop spinal TB. The French physician Laennec discovered the basic microscopic lesion the “tubercle” in the beginning of the nineteenth century. According to the current esti-

mates of the WHO, tuberculosis kills 3 million people a year world wide. Only typical *Mycobacterium tuberculosis* is pathogenic slow – growing aerobic organism growth – doubling time 20 hours. Spinal tuberculosis involves the anterior end plates and disc space leads to typical “wedge – shaped” deformity and cold abscess in some cases.

MATERIALS AND METHODS

In this descriptive study number of patients were 132 conducted in the department of neurosurgery Lady

Reading Hospital, Peshawar. From Dec. 2008 to Dec. 2012.

Diagnosis was made on history and clinical examination.

RESULTS

Total number of patients male and female of all ages were 132 as shown in Table 1 and Fig. 1 – 2.

Table 1: Sex and Age Incidence.

Serial No.		Frequency (%)
1.	Total number of patients	132 (100%)
2.	Male	83 (62.9%)
3.	Female	49 (37.1%)
4.	Minimum age	3 years
5.	Maximum age	70 years
6.	Mean ± SD	30 ± 15 years

Investigations

Chest X-ray was performed in 132 (100%) cases and X-ray spine in 45 patients. MRI spine was performed in 132 (100%) and 3D CT in 8 (6%) cases. Abdominal ultrasound was done in 45 cases. Erythrocyte sedimentation rate (ESR) was raised in all cases, Pus C/S was positive in 30% and biopsy was typical for TB in 81 (61%) cases.

Treatment Options

Following treatment were offered to the patients were:

Group A: Conservative Management

Among all (31%), were treated with stanandard ATT (conservative management without surgery).

Group B: Abscess Drainage

Abscess drainage were performed in (8%).

Group B: Spinal Cord Decompression and Stabilization

Spinal cord decompression and stabilization were performed in 132 (61%) (Figure 3).

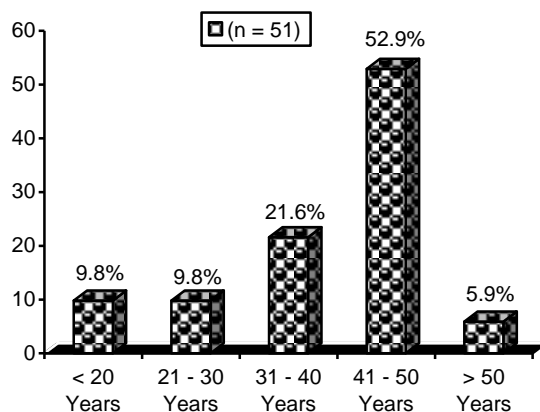


Fig. 1: Group – A: Ages of Medically Treated.

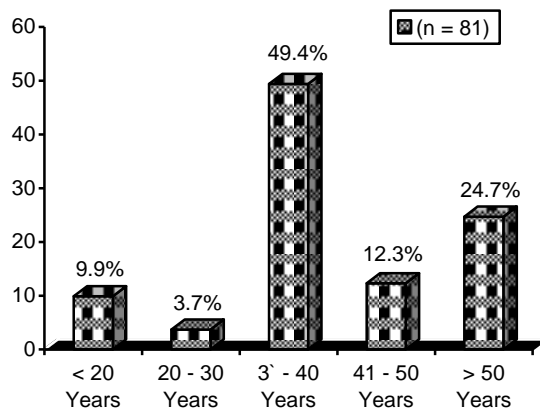


Fig. 2: Group – B: Ages of Spinal Decompression.

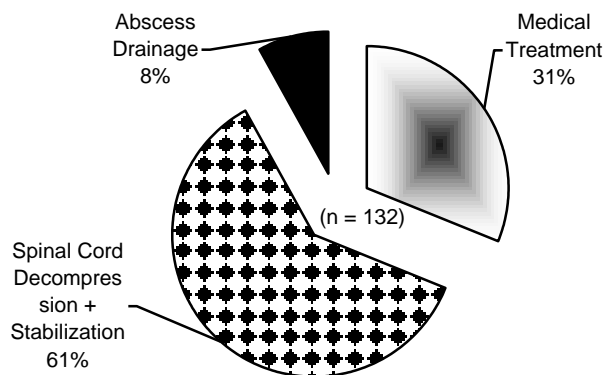


Fig. 3: Treatment Options.

Outcome

Neurological improvement and radiological stability was assessed and is shown in Table 2.

Table 2: Outcome.

S. Number	Outcome	Percentage
1.	Localised Pain relieved	98.5
2.	Local Tenderness improved	97.7
3.	Paresis and Plegia improved	81.1
4.	Kyphotic deformity reduced	43.2
5.	Sphincter functions improved	66.6
6.	Morbidity (displacement of prostheses)	2.3
7.	Mortality	0.8

DISCUSSION

Spinal tuberculosis has devastating complications if diagnosis and treatment are delayed. Pot's disease management needs multidisciplinary approach and different modalities of treatment. The primary focus of TB and history of contact are not common. According to our study it was present in 5% cases. In our study mostly young age group was affected. According to our study the main signs and symptoms of caries spine are localised pain in the involved area of the spine, local tenderness and in advanced cases spinal kyphotic deformities. The general and non-specific complaints are general weakness, malaise, weight loss and anorexia. The diagnosis of spinal tuberculosis is made on the basis of the history of localised pain and tenderness, raised ESR, plain X-Rays of the involved area of the spine, MRI and 3D CT. Which shows destruction of the vertebral bodies endplates and involvement of the disc space in 90% of cases. In 10% it involves the arches (pedicles and laminae). Skip lesions occurs in 30% cases while in our study it was in 10%. In majority of the cases dorsolumbar part of the spine was involved. Spinal cord involvement is rare while it is compressed in advanced cases which leads to hemiparesis / paraplegia or tetraparesis / plegia and loss of sphincteric functions. The different treatment modalities which we used were only medical treatment for those cases who were diagnosed in early stage of the disease. According to our study 31% cases were treated with standard ATT regime. In 8% cases the spinal psoas or epidural abscesses were drained and ATT were given for 12 – 18 months. Kyphotic deformity with spinal cord compression in 61% cases were decompressed from anterior and stabilized with implants

and ATT was given. The pus was cultured and necrotic tissues were subjected to histopathology and were comparable with TB. According to our study the pain control was a serious problem and to stop the progressive kyphotic deformity in late diagnosed cases. By rationalising the modality of treatment in the management of spinal tuberculosis excellent results were achieved.

CONCLUSIONS

Early diagnosis and treatment had excellent outcome. Dorso-lumbar spine involvement and young age was common. Advanced cases needs multimodal therapy (medical, surgical and supportive). Some degree of kyphotic deformity still remained.

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