

TUBERCULOSIS OF THE SPINE

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ABSTRACT:

The review of one hundred and seventy-two patients that were treated in Trakya University and Balta Limani Bone Disease Hospitals between 1985-1993 is presented. The mean age was 40.2 years, ranging between 2 and 78. The mean follow-up was 31.8 months. 78 patients were treated conservatively and surgical treatment were performed for the remainder group with chemotherapy. The types of surgical treatment were as following: Costotransvectomy and anterolateral debridement in 42 cases, anterior drainage and curettage in 25 cases, anterior radical resection and anterior fusion in 8 cases, only abscess drainage in 7 cases, anterior debridement and posterior in-situ fusion in 9 cases. The posterior spinal instrumentation and fusion were added to anterior fusion in 3 cases. 19 patients had paraplegia at the time of admittance to the hospital. All patients were prescribed antituberculous drugs for 9-24 months.

Key Words: Tuberculosis, Spine, Pott.

Tuberculosis of the vertebral column was described by Pervical Pott in 1779 as a kyphotic deformity of the spine associated with paraplegia. Tuberculosis is still a very important problem in developing countries. Before the advent of antituberculous therapy, treatment was prolonged recumbency and rest, usually in plaster bed and general supportive measures included a nutritious diet, good hygiene, sunshine and fresh air. In 1950, Besworth et al (5) published the use of streptomycin in tuberculous bone and joint lesions. Lateral or anterolateral approach to the thoracic spine through costotransversectomy, first described by Menard in 1894. Hibbs (9) and Albee (1) independently published papers on spinal fusion for Pott's disease by bone grafting. The anterior approach for debridement and drainage of tuberculosis abscess has gained popularity after Hodgson and Stock (10) published their results in 1960.

In this study, the retrospective analysis of 172 cases that were treated in Trakya University and Balta Limani Bone Disease Hospitals is presented.

PATIENTS AND METHODS

The cases of 172 patients who had tuberculosis of the spine were treated in Balta Limani Bone Disease and Trakya University Hospitals between 1985-1993. 91 patients were male, and 81 patients were female. The rate of M/F is 1, 12. The youngest patient was 2 years old and the oldest one was 78 years old. The

mean age was 40.2 years. The age distribution peaked at the fourth decade. Of the 18 (%10,4) patients were under ten years old. The average period between the onset of symptoms and admittance to hospital 4.4 months. The lesion involved cervical vertebrae (between C1-C7) in 3 cases (% 1.7), thoracic vertebrae (between T1-T10) in 67 cases (% 38.9), thoracolumbar vertebrae (between T11-L2) in 70 cases (% 40.6) and low lumbar vertebrae (between L3-L5) in 32 cases (% 18.6). The lesion involved one vertebra in 85 (% 49.4) patients, two vertebra in 72 (% 41.8) patients, more than two vertebra in 15 (% 8.7) patients. Two patients (% 1.1) had involvement of posterior elements. 19 patients (% 11) had paraplegia at the time of admittance to the hospital. 78 patients were treated with antituberculous chemotherapy and immobilization by cast brace or corset. 94 patients had surgical treatment with chemotherapy. The types of surgical treatment were as following: Costotransversectomy and anterolateral debridement in 42 cases, anterior drainage and curettage in 25 cases, anterior radical resection and anterior fusion in 8 cases, only abscess drainage in 7 cases, anterior debridement and posterior in-situ fusion in 9 cases. The posterior spinal instrumentation and fusion were added to anterior fusion in 3 cases. The patients were immobilised with plaster of jackets or corsets for 3-12 months. The mean duration of post-operative follow-up was 31.8 months, ranging from 8 to 54 months.

RESULTS

Most of the lesions involved thoracic and thoraco-

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lumbar vertebrae (% 80.5). The rarest localization was cervical vertebrae (% 1.7). Atypical localization were detected only in two cases in transvers process (T3 and T6). The patients who had paraplegia were old patients (average 58.5 years) except one. The disease rarely affected children. None of the patient under ten years of age had any neurologic deficits.

The posterior spinal instrumentation with transpedicular screws in addition to anterior radical resection and fusion was slightly better to correct the deformity at lumbar and thoracolumbar vertebrae. There was no recurrence after anterior radical resection and anterior fusion while 18 patients had draining fistulas after only curettage of lesions. We have seen a fracture of graft in two cases. The rupture of left iliac vein during the anterior radical debridement occurred as a complication.

DISCUSSION

Conservative treatment, alone, for patients who have tuberculosis of the spine is a choice when the destruction of single vertebral body is limited and disc space on either side are intact and no cord compression. Although some authors reported encouraging results using chemotherapy alone, this kind of treatment, however, achieves only a low fusion rate, and allows the kyphosis (2, 7, 12). Twelfth report of the Medical Research Council Working Party (15) showed that isoniazid plus rifampicin for six or nine month was effective. We preferred the conservative treatment for the patients who had a limited destruction without neurologic involvement and the absence of severe kyphosis and paravertebral abscess.

We used the anterolateral approach by costotransversectomy for thoracic involvement. This is easy and quick technique for drainage of the abscess. We haven't seen any neurologic or vascular complication related with this approach. Montina et al (14) reported the successful results with this procedure. The disadvantage of the drainage of abscess by anterolateral approach is lack of preventing or correcting the kyphosis. Korkusuz et al (13) reported the extrapleural anterior decompression.

Anterior arthrodesis for the treatment of patients who have tuberculosis of the spine has been advocated as the treatment of choice (2, 6, 10). The sequestered bone and caseous material can be removed to the bleeding bone in direct vision by anterior approach and the kyphotic deformity is corrected by insertion of a strut graft. We performed 8 anterior radical resection

and anterior fusion. In two cases, we used fibular graft and iliac graft for others. We observed a fracture of graft in two cases. In one case who was debrided previously by anterior approach, rupture of left iliac vein occurred during the second procedure of anterior resection and fusion. Although some authors reported a recurrence of the kyphosis after anterior fusion, owing to persistent growth of posterior elements in children, Rajasekaran and Soundarapandian (17) showed that the addition of a posterior fusion to anterior fusion to prevent anterior angulation was not necessary (4, 18). We have no experience the anterior fusion for children under 10 years of age.

Güven et al (8) reported 10 cases who were treated by single stage posterior instrumentation and fusion without anterior debridement. We used posterior instrumentation in three cases (two at L1-L2, one at L4-L5) combined by anterior arthrodesis. These patients had severe kyphosis and we aimed the correction of deformity. We found two isolated involvement of the posterior elements. Babhulkar et al (3) reported the incidence of posterior involvement as %10. Hoffman et al (11) published 16 cases (% 56) in their series consisting of 25 cases. If there is severe destruction of the posterior elements, posterior instrumentation and posterior fusion is required.

We conclude that chemotherapy is essential for treatment of tuberculosis of the spine. Anterior debridement and anterior fusion with strut graft can reduce the incidence of kyphosis. Posterior instrumentation and fusion can be added to anterior fusion to correct the deformity and to prevent the fracture of graft especially when the graft spans two or more disc spaces. The choice of treatment is depend on the neurologic findings, severity of destruction, presence of paravertebral abscess and the available surgical expertise and facilities.

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