

## THE MANAGERMENTS IN TUBERCULOSIS OF THE SPINE

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*Treatment of Pott's disease has not been clarified until recently. In our country, the incidence of tuberculous spondylitis is relatively high. Between 1988 and 1994, in 21 tuberculous spondylitis we treated with bed rest and/or operative treatment with antituberculous drug therapy. 12 of the patients were female, 9 of them were male and average age being 50. The average follow up period was 29 months. All patients were evaluated according to laboratory findings, antero-posterior and lateral roentgenograms and Magnetic Resonance Imaging. The levels of Pott's disease were determined from T7-L5. Incomplete paraplegia was recorded which all cases are operated on. In operative treatment we preferred anterior and posterior fusion after radical debridement. Antituberculous therapy as usually streptomycin, rifampicin and isoniazid (INAH) in standard dosages is started 15 days at least before surgery. Bony fusion occurred substantially earlier, and there was no increase in kyphosis. In all cases, paraplegia was recovered in the postoperative period. Nowadays, tuberculous of the spine is the significant disease which caused highly morbidity in developing countries. For this reason, it's treatment is very important.*

**Key Words:** Pott's Disease, Vertebra, Tuberculosis of the Spine.

Tuberculosis of the spine is the most common extrapulmonary tuberculosis. For the first time, Pervical Pott described this disease as clinically and anatomically in 1779 and put forward appropriate treatment. In 1910, Albee and Hibbs described posterior fusion treatment. Radical debridement and anterior fusion with graft which were performed by Hodgson and Stock, usually adopted treatment in additional antituberculous drug therapy. However, succesful results reported with conservative treatment and posterior spinal fusion with abscess drainage too (Kidner and Muro 1927, Cleveland 1958, Karlen 1959).

### MATERIAL AND METHODS

Between 1988 and 1994, in Ege University Medical Faculty Dep. of Orthopaedics and Traumatology, we performed operative and conservative treatment of the tuberculosis of the thorocolumbar spine. In our study; these patients evaluated retrospectively. All patients were evaluated according to laboratory findings, radiographs, CAT, MRI and open biopsy specimen's results. 12 of the patients were female, 9 of them were male and average age being 50 (range 40 to 75). The average follow-up period was 29 months (range 4 to 66). In follow-up period spinal deformity and fusion time with radiographs exposed. Technique of operative treatment: We performed anterior fusion with

graft after radical debridement. We used Bradford's thorocotomy in thorocal region, but lateral retroperitoneal approach in lumbar region. In only two cases, posterior fusion and stabilization with ALICI instrument were applicated in additional. After operative treatment, patients used TLS orthoses throughout one year. Antituberculous therapy as usually streptomycin, rifampicin and isoniazid and ethambutol in standard dosages is started 15 days at least before surgery. Antituberculous drug therapy employed during one year in all patients. In non-operative treatment included bed rest for three month with TLS orthoses. Patients which takes antituberculous drug therapy were followed with liver function tests and routine hemogram for inhibition of RES, two montly. Preoperative and post-operative kyphosis and deformity angle were evaluated according to Konstom and Blesovsky in lateral radiographs of the spine (16).

### RESULTS

In all patients out of three cases who takes antituberculous drug therapy yet, disease was eradicated.

**Table 1.** The level of vertebral lesion.

| Number of cases | Level of vertebral lesion |
|-----------------|---------------------------|
| 6               | T7-T11                    |
| 6               | T11-L2                    |
| 6               | L2-L4                     |
| 3               | L5                        |

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Cold abscesses were present 11 (52%) patients. Two of the 11 patients with abscess had needle aspirations, guided by CT at the time of diagnosis and during treatment. Neurologic assesment performed according to Frankel. 15 of the 21 patients who had neurologic deficit (Table 2).

**Table 2.** Degree of the neurologic deficit.

| FRANKEL  | A | B | C | D | E |
|----------|---|---|---|---|---|
| PATIENTS | 3 | 6 | 5 | 1 | 6 |

In before treatment kyphosis angle determined average 25 degrees (range 10 to 52) and deformity angle average 30 degrees (range 12 to 60). In after treatment kyphosis angle determined average 15 degrees (range 5 to 35) and deformity angle average 20 degrees (range 8 to 40). Fusion time was detected average 10 months (range 6 to 12). All patients were free of kyphotic pain and back and leg pain at final follow-up. 10 of the patients recovered sensory, motor and bladder functions fully but 5 of the patients had paraplegia.

**DISCUSSION**

Because of our country is developing, tuberculosis was not eradicated completely. Treatment results are not very succesful because patients do not apply to doctor up to develop neurologic deficits, endures to pain. In developed countries, tuberculosis of the spine is established as 0.9/100.000 in every year (12). In Switzerland Between 1977-1983 12.9% of all cases of tuberculosis were extrathoracic (12). This proportion varied from 9.9%-25.4% in the U.S.A. and Western Europe (9). In the studies of the MRC Working Party on tuberculosis of the spine on 536 patients the incidence of an abscess visible on the initial roentgenograms and tomograms varied between 44% and 54% (12). Allen et al. 51% positive results in 321 cases, Lipeso et al. 38% in 31 cases established (13). Jansens et al. in 15 cases 57% established abscess formation (12). In the literature, biopsy specimen was being 30-50% positive (1, 12). In our results, positive biopsy specimen's ratio was determined as 30% (in 7 cases). Gorse et al. also found CT particularly useful in the detection of abscess in lower cervical, high thoracic, and lumbosacral lesions (7). In our study, abscess formation was detected in 11 (52%) with radiograms and CT and MRI. In last 3 cases of our study abscess formation was recorded with MRI. MRI is the most

sucesful diagnostic method in detection of abscess formation and lesion extentions (5). Neurologic deficit develops because of abscess or tuberculoma's secondary medullary pressure or radicular inflammation (4). Extramedullary and intramedullary tuberculomas have been was described (15). Neurologic deficit was seen 15 (70%) patients. Alvarez and Mc. Cabe 37% in 16 patients, Hsu and Leong 2.5% in 40 patients described neurologic deficit (2, 10). Fellander et all. reported neurologic deficit recovery time as average 7 months (range 0-24 months) (6). Augereau et all. reported seven patients in whom the neurologic deficit recovered completely with corticosteroids and did not require surgery (3). The risk of haemorrhage is considerable, and this may explain at least inpart, why surgery may actually aggravate the neurologic deficit (12). In paraplegic patients decompression must apply from anterior, because compression develops from anterior region (16). In these cases posterior laminectomy is contrindicated (11, 16). For this reason, we preferred anterior approach to perform decompression.

We applied surgical treatment for decompression in patients who had neurologic deficit and abscess formation. Rajasekaran et al. treated with debridement and anterior arthrodesis eighty-one cases. They reported in 59% of all cases which prevented spinal deformity (14). Radical operative treatment was described by Hodgson and Stock (16). Progressive kyphosis develops because of overgrowth in posterior elements after anterior fusion (16). Upadhyay et all. reported succesful clinical results after debridement and anterior fusion (16). In cases who applied radical debridement and anterior fusion significantly increase was not being in kyphosis and deformity angles during post-operative 6 months. Using implant with anterior fusion in to infected region may cause foreign body reaction, for that reason, this procedure is contrindicated (8). In two cases who had several destruction and instability, we applied posterior fusion with instrument after anterior debridement and fusion. Nowadays, grafts figure and origin which using fusion are disputatious. Many authors prefer autografts which takes from iliac ring and costa (15). Some authors use strut grafts who are strong. Particularly, vascularized costa grafts were proposed in thorocal region. But, we did not used vascularized autografts, because of this method requires special technique and special equipment. Long follow-up results of vascularized autografts are not superior to non-vascularized autografts (14).

**CONCLUSION**

In cases who had abscess and without neurologic deficit, we performed abscess drainage + antituberculous therapy + supportive TLS orthoses. In cases who had neurologic deficit, we applied decompression + fusion with autografts after anterior debridement. We followed patients with bed rest for 4-6 months and used TLS orthoses for one year.

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