POSTEROLATERAL DECOMPRESSION AND POSTERIOR INSTRUMENTATION AND FUSION IN TUBERCULOSIS OF THORACOLUMBAR VERTEBRAE*

Cüneyt MİRZANLI MD Hakan GÜLHAN MD Hacı KUTLU MD
Mustafa CANİKLİOĞLU MD Murat MERT MD

ABSTRACT :

Although the real treatment in the vertebral tbc is medical, in some patient surgery has to be the treatment. In this study we discussed posterolateral decompression and posterior instrumentation and posterior fusion in chosen cases. 21 female, 18 male of 39 patients having the mean age of 39y (16-79) were treated with the mean follow up of 30m (9-57). We reached the greatest degree of correction of the deformity in the literature by this method solving the grafting and biomechanically stable instrumentation problems.

Key words: *Tuberculosis, thorocolumbar, posterior instrumentation.*

INTRODUCTION

In the treatment of vertebral tuberculosis which is actually an infectious disease real treatment is chemotherapy against the infectious agent (1, 7, 8). Other treatments are to help the treatment, to prevent and relieve the complications and may be to increase the quality of the life.

In this study we described and wrote the result of posterolateral decompression which is more easy and safer than anterior radical approaches with the mean follow up of 2.5 years.

MATERIAL and METHOD

Cases:

In SSK İstanbul Graduate Hospital between 1990-1995 we treated 39 patients by PLD+grafting and posterior stabilization and fusion method with the mean follow-up of 30 m (9-57). 21 female, 18 male patients with the mean age of 39 y (16-79). The last follow-up was in the February 1995.

The patients were evaluated in terms of clinical, radiological, neurological findins and pain-work scale of Denis both pre and post operatively. Preoperatively in 9 patients clinically palpable abscess, in 3 patients active sinus were present. In 33 patients of 39 paravertebral abscess, in 26 patients 2 level, in 13 patients 3 level involvement were detected both by plain x-ray, CT, MRI. In all cases in sagittal plain increase in kyphosis angle in thoracal region and decrease in lordosis in lumbar region were found as a pathology. In 8 cases in addition to the sagittal plain deformity, in frontal plain meanly 15 degrees of scoliotic deformity was detected. The kyphosis angle was 23.2 degrees preoperatively by Konstam-Blesovsky method.

In our series neurological evaluation was done preoperatively, postoperatively and in latest follow-up and in this study Frankel Classification was used. 26 cases were in Frankel E, 9 in Frankel D, 4 in Frankel C of 39 cases.

Method: In our series by posterior incision at the level of the lesion after hemilaminectomy+ pediculectomy drainage of abscess (if present), curettage and grafting were done. Modified Stable Spinal Instrument (MSSI) was used in posterior instrumentation. We started the chemotherapy preoperatively and continued postoperatively at least 9-12 months.

RESULTS

Restoration of the kyphosis angle after operation was 15 degrees and at last follow-up it was 12 degrees. In our cases fusion was seen about 7 months and neurologic status was 36 cases in Frankel E, 3 cases in Frankel D according to the last follow up.

According to Denis pain-work scale clinical evaluation showed that 22 of 28 cases at P4/W4 and P5/W5 level preoperatively had reached to P2/W2 level similarly in 6 cases return at P1/W1 level, in 11 cases at P2/W2 and P3/W3 to P1/W1 was seen postoperatively at latest follow-up.

* SSK İstanbul Hospital 2nd Orthopaedics and Traumatology Department. Kocamustafapaşa, İstanbul-TURKEY.

Postoperatively superficial infection was seen in 4 cases and all treated by suitable antibiotics and wound care. And posterior metastasis of anterior vertebral tbc to posterior elements and deep infections that made us to take off the instrument were never seen. In 4 cases thoracal nerve root irritation was detected but they didn't need any surgical treatment. In 3 cases loss of correction due to the instrument failure was the result.

DISCUSSION

If the literature was searched 80% success was seen that is eomplete physical activity, findings of clinical and radiological improvement, absence of central nervous system involvement, recovery of the sinus and the abscess (1, 3, 4). In vertebral tuberculosis the most important deformity was the loss in the sagittal alignment in another words local kyphosis.

Vertebral tbc is progressive and destructive infectious disease which can be handled as a burst fracture of vertebra (2). According to 3 columns model of Denis destruction of 2 columns causes mechanical instability and 70% decreases in work carrying capacity of vertebra. Working of paravertebral muscles to compensate the condition is not enough. Secondly supporting of these unstable vertebrae externally by plasters or braces will prevent the axial loading of the vertebrae. Either it was shown that in MRCWPTS's study of 10 years external supporting did not prevent the kyphosis formation as though before (5).

The advantages of the Honkong Operation is to decrease and stop the increment of the velocity of the deformity. This presentation is firstly explained by Hogsdon and Stock. Bailey, Kemp and Rajasekaran have written the kyphosis angle as about 20 degrees. These authors also have written that the increment was due to the problems of the grafting. In the light of new technics these problems could be solved. This was firstly attempted by Caniklioğlu in our country. That was posterior instrumentation and fusion after radical anterior approach to decrease the load on the grafts and to support the anterior and the posterior columns of the vertebrae at the same seance. So in this method only the effected area of the vertebrae is stabilized and it makes the patients free of motion without increment in the kyphosis.

In our clinic in the light of the same principles in chosen cases PLD and grafting of both the anterior and the posterior columns and posterior stabilization were carried out via posterior approach, which decreases the risks that of anterior approach, decreases the time of the operation, makes easier the technic, and also it lets us see the neural structures easily.

We reached the greatest degree of correction of the deformity in the literature by this method solving the grafting and biomechanically stable instrumentation problems we thought that partial instrument failure was either due to insufficient grafting or configuration sufficiency.

So our conclusion in this study is that we can successfully apply this method to chosen patients which can be listed as:

- the patient with high local kyphosis angle or having tendency to increase kyphosis.
- the patients having two or more distracted vertebrae.
- the patients which need anterior or posterior decompression due to compression of the neural structures.

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