

DRAINAGE APPLICATIONS WITH POSTERIOR APPROACH FROM THE INTERVERTEBRAL DISC SPACE FOLLOWED WITH POSTERIOR INSTRUMENTATION IN PATIENTS WITH DISTAL LUMBAR AND SACRAL TUBERCULOSIS ABCESS*

Report of Three Cases

İ. Teoman BENLİ MD.
Mert TÜZÜNER MD.

Mahmut KIŞ MD.
Serhan ÖZLÜ MD.

Serdar AKALIN MD.
Ali Bülent BAZ MD.

ABSTRACT :

Anterior drainage of distal lumbar and sacral Pott abcess is rather difficult than upper localizations as major vessel complications are likely to occur. In this study the results of one patient with L2-L3 and two patients with L5-S1 localized vertebral tuberculosis were evaluated who had posterior laminectomy, abcess drainage through the intervertebral disc space, curetage of devasted corpus material followed by posterior lumbar interbody fusion (PLIF) by using autogeneus graft. Mean age was 35 years and two of the patients were male, one was female. In all the patients a short segment Texas Scottish Rite Hospital System Intrumentation was performed. Mean follow-up was 12 months. At their last controls all the patients had a solid fusion mass. In light of these findings it is suggested that the method we presented can be a good treatment alternative in such patients with such a rare tuberculous abcess localization.

Key Words: Spinal infection, spinal tuberculosis, lumbar, sacral posterior instrumentation.

INTRODUCTION

Tuberculosis was previously the primary cause of infectious spondylitis. Before the advent of effective chemotherapy, for paralysis, surgery was only treatment option. Various methods are used in the treatment of Pott's disease (10). The British Medical Research Council Working Party on Tuberculosis of the Spine have published long term results on both surgical and nonsurgical treatment modalities (16, 17). According to their findings, anterior debridement and strut grafting is the most effective surgical procedure does not alter the progression of disease associated kyphosis remains a problem. Graft necrosis or sinking are major complications following this procedure (1, 18, 19).

Distal lumbosacral tuberculosis is relatively rare. Anterior surgical approach to this kind of disease is a great danger for big vessel especially because of adhesions caused by the disease. Every effort should be made to identify and isolate these vessels for bleeding

from these vessels is difficult to control. Also with anterior approach it is difficult to correct the kyphotic deformity at lumbosacral junction (10, 14, 21, 22).

In this study, three patients with distal lumbar or lumbosacral Pott's abcess are presented. For eliminating the high risks on vessels and high pseudoarthrosis rates with anterior approach we planned debridment from intervertebral disk space, posterior lumbar interbody fusion (PLIF) combined with posterior intertransversal fusion and posterior instrumentation.

REPORT OF CASES

One patient had L2-3 and two patients had L5-S1 discitis. Clinical characteristic of the patients are shown in Table 1. All the patients admitted to our clinics with the complaints of severe back pain, fever anorexia, weight loss and fatigue. After the physical examination, in the plain radiographs in one patient between L2-3 and in two patients between L5-S1, there was disc space narrowing and lysis causing collapse in adjacent vertebral end-plates. In the MR im-

* Ankara Social Security Hospital, Ankara, TURKEY.

Table 1. Clinical and radiological results of the patients (PRLK: Preoperative angle of local kyphosis, POLK: Postoperative angle of local kyphosis)

NO	NAME	AGE	SEX	FOLLOW UP	PRLK	POLK
1	ŞA	40	Female	11 Months	10°	(-10°)
2	AA	33	Male	14 Months	10°	0°
3	TŞ	28	Male	22 Months	5°	0°

aging there was discitis, vertebral destruction, collapse and anterior abscess formation in involved levels. All the patients were taken to the hospital and for three weeks medicated with streptomycine 1 gr/day, isoniazid 6 mg/kg (max 300 mg) and rifampicine 15 mg/kg. Surgery was performed after three weeks.

Surgical Technique:

After midline posterior incision, total laminectomy and bilateral fasetectomy is performed for the involved level. After mobilization and retraction of the roots, disc material is removed and with a thin suction tube, anterior abscess is aspirated. During that time it is important not to allow the abscess to enter the neural canal. After this, with thin curettes, necrotic bone is removed and fresh auto graft taken from iliac crest is put into the prepared space from the same route (PLIF). After PLIF, transvers proceses are decorticated and grafted. We routinely used TSRH screws in order to correct the sagittal malalignment and fix the vertebrae in desired position. After irrigation hemovac drains are put into place and wound is closed in a routine manner. We didn't use cast or brace in the postoperative period.

On the postoperative 2nd day drains are taken and patient sat near bad. On the third day they were encouraged to walk. On the 10th day they were charged from hospital.

We routinely use streptomycine for one month, after one month we stop it and start ethambuthol 25 mg/kg and continue with rifampicine, ethambuthol and isoniazid for one year. All the patient were seen in postoperative first, third, sixth and twelfth months in the first year. Their last control was done in April 1996. They were evaluated radiologically an clinically.

RESULTS

One of the the patients was female, and two were male. Their ages were 28, 33 and 40 years. All three

patients were pain free or had minimal pain in the postoperative sixth month control. Preoperative and postoperative local kyphosis are given in Table 1. Patient with L2 -3 involvement had +10° local kyphosis angles in the preoperative period and this was corrected to -10° in the postoperative period. One of the

patients with L5-S1 involvement had +10° and the other had +5° local kyphosis angle and both of them were brought to 0° postoperatively. This means that, with posterior approach all patients' sagittal contours were brought in physiological limits.

Mean follow up time is 15.6 months (11, 14 and 22 months). During the last control all the patients had solid fusion mass and there was not any implant failure or loss of correction. During the preoperative and postoperative period there was no neurological compromise.

DISCUSSION

Today, mostly accepted method for treatment of spinal tuberculosis is anterior radical debridment, grafting and medical therapy for 12-18 months. There are a lot of articles reporting posterior fusion and instrumentation during the same stage or in a second stage is very effective for correcting the residual deformity (18, 19). For over coming anterior graft resorption and collapse Güven et al. (7) reported good results of one stage posterior instrumentation. According to this, they reported that one stage posterior instrumentation and fusion is more effecient in correcting sagittal contours. Also this procedure has to advantages of putting the implant far from infected bone, and does not have the high morbidity risk of anterior surgery.

Distal lumbar or lumbosacral Pott disease is relatively rare. For this region, operation techniques which are anterior, lateral or posterior abcess drainage with excision of coccyx are reported in literature (10, 14, 21, 22). These kinds of approaches hold the risk of intrapelvic organ laceration or major vessel injuries. Bleeding from these vessels is very important for survival (10, 22). For this reason we developed a new technique that did not have major risks.

At the lumbosacral region, anterior interbody fusion (ALIF) done for treatment of spondylolisthesis or degenerative disc disease holds the high risk of pseudoarthrosis (5, 6). Depending on his 750 patients, Collis reported that with PLIF one has the advantage of wide fusion and partial restoration of disc height (3). Cloward reported that his series had low pseudoarthrosis rate with PLIF (2). Greatest risk with PLIF is retro-pulsion of the graft causing cauda equina syndrome. Lin (12, 13) reported that with internal fixation risk of retropulsion is minimal. Best results for lumbosacral fusion is taken when PLIF is done combined with posterior intertransverse fusion (12). We also coupled PLIF with intertransverse fusion with this technique. During the last controls all of our patients had circumferential solid fusion after minimum 11 month and maximum 22 month follow up period.

In the lumbosacral region, with the unstable cases like spondylolisthesis sagittal contours are mostly restored with pedicular screws. Also Louis and Steffec et al. (15, 20) reported good results with posterior screw and plate application in lumbosacral region. In a 25 patient series David reported no pseudoarthrosis with CD tulip screws (4). Jackson et al. (11) in a prospective 100 patient series reported that with transpedicular screw fixation there was %90 solid fusion and %100 normal sagittal contours. In our patients for transpedicular fixation, we used TSRH variable angled transpedicular screws and in all three patients we had normal sagittal index.

In a cohort study of 87 patients, followed for 10 years, Güven and Özdemir (8) found that posterior spinal fusion with chemotherapy was effective without drainage of the abscess. However abscess drainage shortens the duration of antituberculous chemotherapy (16). For this reason Güven et al. (9) reported that transpedicular abscess drainage is effective method for the cases which had only posterior instrumentation and fusion. In our patients, we also aimed effective drainage, debridement and circumferential fusion after suppressive therapy. With our technique or with the technique Güven et al described one may think that posterior elements or neural structures have great risk of contamination. Neither Güven et al nor we did not observe any contamination in posterior elements or neural structures such as tuberculous meningitis or encephalitis during follow up period. We think that 3 weeks of preoperative medication is effective for preventing contaminations. For this reason, we strongly

recomend preoperative, minimum 3 weeks of antituberculous therapy in our technique.

In the light of these findings, we concluded that for distal lumbar or lumbosacral Pott's disease, PLIF and debridement from the disc space, intertransverse fusion, and posterior transpedicular instrumentation is effective in gaining circumferential solid fusion mass and restoring sagittal contours.

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