OUR CLINICAL CONCEPT IN TREATMENT OF VERTEBRAL TUBERCULOSIS

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ABSTRACT:

Eighty one vertebral tuberculosis cases were treated in SSK İstanbul Hospital and Taksim Hospital Orthopaedics and Traumatology Clinics between 1987-1993 years. Thirtytwo patients were treated conservatively and 49 patients were operated. In surgical group 14 patients had only abcess drainage, 29 had posterior fusion and 6 had anterior fusion operations. In years 1986-1987, for correction of deformity and stabilization, Anterior radical resection and posterior fusion with instrumantation were performed first time in our Clinic.

From beginning of the year 1990, only posterior approach was used for abcess drainage, anterior resection and grefonage by remoring transvers process and pedicul of vertebrae. Posterior invesion of infection was seen in none of the patients. The resulte of this study were declared in the first and second Intarnational Congress of Spine Surgery Maetings held in İzmir and İstanbul.

As a result, We concluded that for correction and stabilization of vertebral column, Posterior instrumantation materials should be used in cases with unacceptable deformity, in multiple level lesions and when progression seen in serial radiographs.

Till the last quarter of the 2oth century, especially in the 3rd world countries, the increesing number of colmna vertebralis tuberculosis forced us to search for new approaches of management of vertebrae tuberculosis in the light of progressing biomechanics and new surgical techniques. As a result of this we combined posterior internal stabilization and fusion with anterior radical resection. Then in selected cases through posterior approach we begin to perform our procedure; transpediculer abcess drainage, grefting, posterior stabilization and fusion operastions.

In the last period of 19th century the first surgical therapy was the drainage of the cold abcess that could be palpated. Since 1910 Albee and Hibbs have used posterior fusion. After the second world war with the newly faund chemotherapotics, surgical procedure developed and the aim was to operate diseased area. Costatransversectomi, focal debritmant, radical resection and anterior fusion are the important steps consequently (1, 2, 3, 4, 7, 8, 9, 10, 11, 12, 13, 22).

PATIENTS AND METHOD :

In our study there are 81 patients that have been treated consequently or surgically since 1987 in Health Ministry Taksim Hospital and since 1990 in S.S.K. İstanbul Hospital. Their last control was made 6 mounths ago from December the 1993. 32 patients is male and 19 is female that was treated surgically. 30 patients is male and 19 is female that was treated surgically. The average age in males are 38.4 (15-76) in females are 36.5 (15-81) average fallow up time is 22 mounts (6-44). ın 14 patients we only drained the abcess, in 6 patient anterior radical resection posterior stabilization and fusion, in 29 patient throuhg posterior approach transpediculer drainage curating grefting posterior stabilization and fusion was done. In stabilization Harrington, CDI, ASS and MSSE instruments was used. To all patients routine cheomoterapy procedure was given (Table 1). In norologic assesment preoperatively 1 case was Frankel B, 3 was Frankel C and 4 was Frankel D. Postop all the cases were Frankel E. At the least follow up all the patients were P-1/W-1 according to Denis pain and work scala. Postop in 4 patients superficial wound infection was seen. All the infections healed with antibiotics in a 1 week of period of time. In no patient tbc. infection progressed from anterior to posterior and no deep infectioh sign was seen which coused removel of implants. Patients were mobilised when they could tolarate the pain about the postop second or third day. In some patients we used plaster support but in many of them we did not use ex-

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ternal support. We confirmend the fusion in all the patients that fused, the avarage fusion time is 7 mounths.

Table 1.

DRUG	DAILY DOSE (MG/KG)		INTERMIT. DOSE (MG/KG)	
	INFANT	ADULT	INFANT	ADULT
ISONIAZID	10 - 20	5	20 - 40	15
RIFAMPICIN	10 - 20	10	10 - 20	10
PYRAZINAMID	15 - 30	15 - 30	50 - 70	50 - 70
ETHAMBUTOL	15 - 25	15 - 25	50	50
STREPTOMYCIN	20 - 40	15	25 - 30	25 - 30

Table 2.

LEVELS OF THE DAMAGED VERTEBRAES					
T 6	5 CASES	T 10	4 CASES	L 2	4 CASES
T 7	8 CASES	T 11	7 CASES	L 3	7 CASES
T 8	5 CASES	T 12	5 CASES	L 4	6 CASES
T 9	4 CASES	T 1	5 CASES	L 5	5 CASES
SACROILIAC 1 CASE					

DISCUSSION :

The surgical treatment of tuberculosis of columna vertebralis was ignored for long years that cold abcess could not be open because of non healing of the fistule.

After the second world war the development of surgical treatment was with the development of chemoterapotic agents. Because of the good results the first choice in the treatment is medical but the cornection of secondary deformities is surgical. Costotransversektomi, focal debritment, radical resection and anterior fusion are the important steps consequently (4, 12, 3, 6).

With medical therapy, bed rest, plaster bed and corset are combined, to immobilize the patient. Dickson, Jones and Kanstom prefers conservative therapy. But Bailey, Arct, Hodgson, Chu, Khali prefers surgical therapy (4, 12, 3, 6).

Choosing of medical of surgical therapy does not effect the result of healing process. But the patients treated medically had local kifosis 15 more then the ones that were treated surgically. In 1973 the Medical Research Council Working Party on Tuberculosis of The Spine declarated %82-90 good results of medical therapy. But local kifosis increased 8-16° (4, 12, 15). In Korea and Rhodezia with medical thearapy there are %90 good results (15).

Hodgson and Stock declarated %93 Khali declarated %97 good results with anterior radical resection. Without fusion only doing costatransversektomi the results are good too. The MRCWPTS'S that were published in 1974, 1976, 1978 and 1982 declarated %80-90 good results with conservative and surgical thearapy (17, 18, 19, 20). But all of them agrees that through anterior radical resection the ratio of local kifosis is the least.

Rajesekaran declarated graft complications through anterior radical resection that; fracture, absorbtion or sliding of the graft due to forces which load graft and thit area during the months needed for forming of fusion (22).

Columna vertebralis tuberculosis that is forming abcess increases the pressure under the ligamentum longitudinalis anterior and the sirculation becomes warse. This causes aseptic necrosis, collaps heihgt loss and kifosis (8). For this reason the tbc. of columnae vertebralis is just like to burst fracture of the vertebrae and at the late period it causes chronic instability (6).

In aur country many patients comes to the clinic at late periods, with local kifosis. For this reosen since 1987 to 1989 we have used a new technique in Taksim Hospital. And we have progressed this technique in S.S.K. İstanbul Hospital. In this technique we performed posterior stabilization and fusion and anterior radical resection in the some time.

The reasons for using this techique is below:

- To minimise the patients hospitalisation and immobilisation period.
- Not to immobilise the patient but the deseased area.
- To stop the improvement of local kifosis and to correct the deformity.

- To prevent pathologic weight bearing of the graft and shorten the fusion period.

Since 1990, in selected cases, not through anterior approach but through posterior approach via transpedicular way we osteotomised the lateral wall of pedicul and approach to the anterolateral of the vertebrae body and drain the abcess than we curate, graft, stabilise and fuse posteriorly.

The advantage of this procedure is; to shorten the operating period and prevent the patient from the complications of anterior approach.

In every patients, through posterior approach, abcess did not fistulised the medullary canal or anterior infection did not efected the posterior elements and posterior fusion developed in a 7 months of time period.

As a result; short period of operation, easy surgical technique, minimal complication, great success rate are the advantages of posterior fusion and stabilisation through posterior approach via transpedicular surgical procedure. This procedure also minimise the immobilisation time, immobolise the diseased area not the patient, corrects the deformity and prevents from improvement of the deformity and graft complications.

So we advise this procedure in the cases below:

- In the cases of local kifosis angle increases or if there is suspicion of increasing the angle of kifosis.
- If the destruction are at the anterior and medial colon and progressing.
- If there is medullary pressure that needs decompression anteriorly and posteriorly.

The main aim of this technique is; to correct kifosis of lateral banding and to prevent the patient from chronic instability, if there is or suspicion of progressing chronic instability or kifosis.

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