

Changes of Kyphotic Angle Following Operative Treatment of Tuberculous Spondylitis

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– Abstract –

Study design : Thirty-seven patients with spinal tuberculosis were evaluated according to surgical method.

Objectives : To evaluate the effectiveness of posterior spinal instrumentation in the surgical treatment of patient with tuberculous spondylitis.

Summary of literature reviews : There are many debates about the effectiveness of posterior spinal instrumentation combined with anterior interbody fusion in tuberculous spondylitis.

Materials and Methods : From January 1995 to June 2000, 37 patients were divided into two groups depending on their use of posterior spinal instrumentation. Group I consist of thirteen patients who were treated with conventional anterior corpectomy and anterior interbody fusion using autogenous strut bone graft. Group II was composed of twenty-four patients who were treated with conventional anterior corpectomy and anterior interbody fusion combined with posterior spinal instrumentation. Changes of corrected kyphotic angle and complication were measured using pre-, post-operative and follow-up radiographs and chart review.

Results : In group I, six cases (46.2%) showed loss of corrected kyphotic angle. Of these six cases, five cases had initial kyphotic angle of more than 20 ° and three cases had involvement of two or more vertebrae. All six cases had thoracic or thoracolumbar involvement. Comparing two groups, maintaining corrected kyphotic angle and low complication rates were obtained in group II during follow-up period. The change of deformity as followed. In thoracic area, the mean kyphotic angle of 26.5 ° was reduced to 18 ° postoperatively. At the most recent follow-up, the mean kyphotic angle was 31.5 ° in group I, a loss of correction of 13.5 °. In group II, the mean kyphotic angle was corrected from 27 ° to 13.5 ° after surgery. At the most recent follow-up, the mean kyphotic angle was 17.5 °, a loss of correction of 4 °.

Conclusion : Posterior spinal instrumentation combined with conventional anterior corpectomy and anterior interbody fusion were found to be effective for preventing loss of kyphotic angle and for maintaining stable bone fusion in patients with mean

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kyphotic angle more than 20°, or even in case of less than 20°, but with high risk of developing kyphotic changes due to multiple involved vertebrae.

5%

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Fig. 1. Preoperative, postoperative and follow up radiographs and MRI showing T7~8 tuberculous spondylitis of a 57-year-old male patient. This patient was treated by posterior instrumentation combined with anterior radical excision and anterior interbody fusion. A, B, C. Preoperative AP, Lateral radiographs and MRI. D, E. Last follow-up radiographs Preoperative kyphotic angle (20 °) was maintained until postoperative 22 months. Final kyphotic angle was 5 °.

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13 , II 24
1960 Hodgson Stock¹¹⁾ (Fig. 1A-E) III
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2,5,13,25,27) ,
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I 가 9 , 가 4 .
35.5 II 14 , 10 ,
54.2 . 가 I 4
(30.8%), II 15 (62.5%), 19 (51.4%) 가
I 7 (53.8%), II 5 (20.8%), 12
(32.4%) I 2 (15.4%), II 4
(16.7%) 6 (16.2%) .
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53 42 22

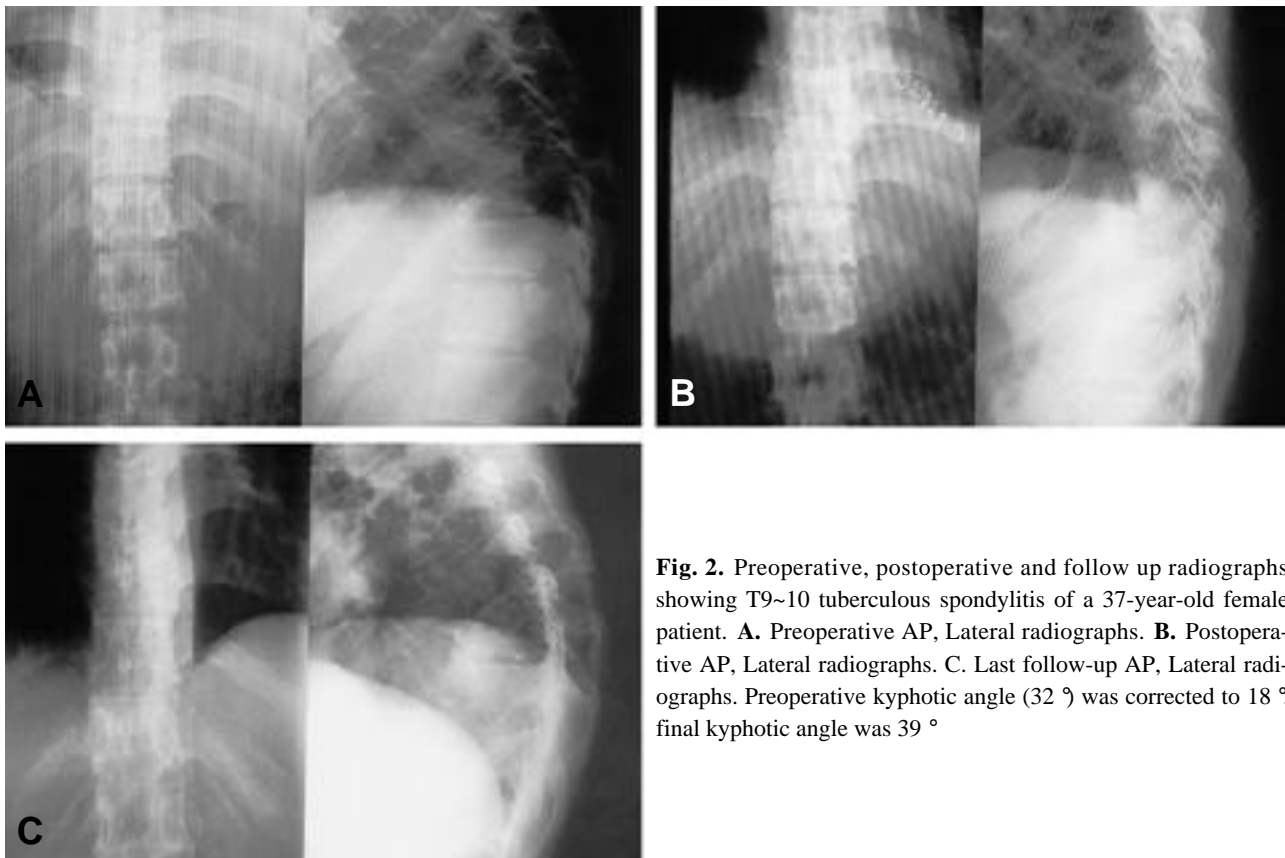


Fig. 2. Preoperative, postoperative and follow up radiographs showing T9~10 tuberculous spondylitis of a 37-year-old female patient. **A.** Preoperative AP, Lateral radiographs. **B.** Postoperative AP, Lateral radiographs. **C.** Last follow-up AP, Lateral radiographs. Preoperative kyphotic angle (32 °) was corrected to 18 °. final kyphotic angle was 39 °.

Table 1. Changes of kyphotic angle in T-spine (°)

	preoperative	postoperative	Last F/U
Group I	26.5	7.4	19.6
Group II	27	8	12

Table 2. Changes of kyphotic angle in T-L junction (°)

	preoperative	postoperative	Last F/U
Group I	20	10	21
Group II	28.7	16.2	19

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Cobb
·
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SPSS Mann-Whitney

2.
I 20 , 12 8
19.7 11.7
II
29.8 , 13.4 , 16.8
16.4 3.4
(Table 2)
(P<0.01).
3.
I -2.7 , -6.1 3.4
-3.7 2.4
II 3.3 ,
-2.7 , 1.3 6
4 (Table 3)
(P=0.25).
4.
5 10 (I 6 , II
4) 가 5 (I 4 , II 1
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가 가
I 1
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가
I 6 (46.2%)
(Fig 2)
5 20 ° 2
가 3 6
·
II 4 (16.7%) 5
가 II I

Table 3. Changes of kyphotic angle in L-spine (°)

	preoperative	postoperative	Last F/U
Group I	-2.7	-6.1	-3.7
Group II	3.3	-2.7	1.3

가 (P<0.01).
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1.
I
26.5 , 18 8.5
31.5 13.5
II 27 ,
13.5 13.5 17.5
4 (Table 1) II I
(P=0.05).
2.
I 20 , 12 8
19.7 11.7
II
29.8 , 13.4 , 16.8
16.4 3.4
(Table 2)
(P<0.01).
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I -2.7 , -6.1 3.4
-3.7 2.4
II 3.3 ,
-2.7 , 1.3 6
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(P=0.25).
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5 10 (I 6 , II
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-2.7 , 1.3 6
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(P=0.25).
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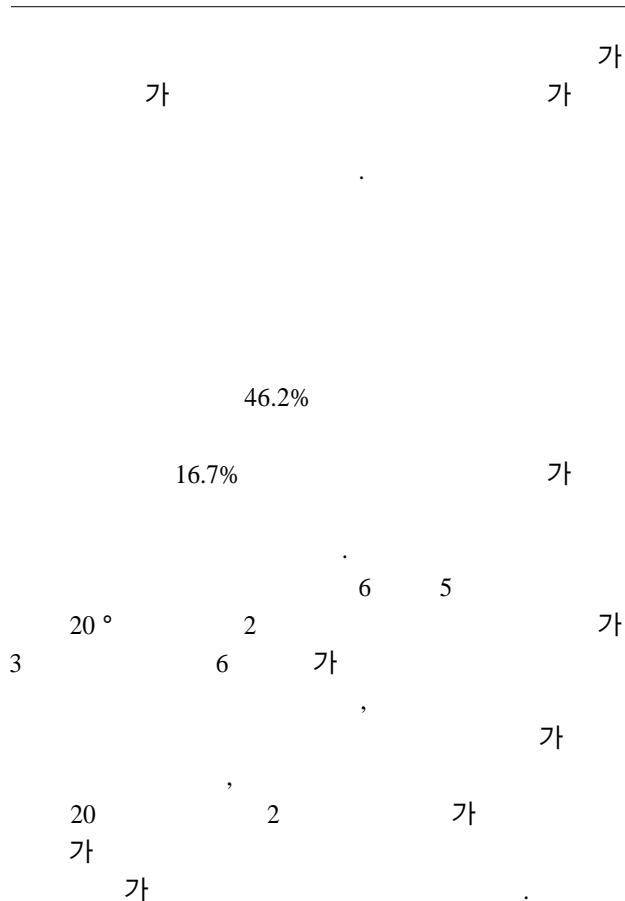
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