



Abstract

Conservative treatment of Osteoporotic Compression Fractures in Thoracolumbar spine

Kyu-Bok Kang, M.D., Young-Do Koh, M.D.

Department of Orthopedic Surgery, Ewha Womans Univ. Mok-dong Hospital, Seoul, Korea

Backgrounds: To evaluate the effectiveness of conservative treatment in osteoporotic thoraco-lumbar compression fractures and to identify the factors influencing the progression of compression.

Materials and Methods: From January 2003 to October 2004, Patients who were admitted to our hospital for osteoporotic thoraco-lumbar compression fractures were reviewed retrospectively with follow-up more than 12 months (ave. 14.6 months). With simple x-ray lateral view, we evaluate wedge compression ratio (WCR) and kyphotic angle (KA) at initial and final follow-up. We separate the patients into two groups based on the amount of progression of vertebral compression and evaluate a relation with BMD, vertebral fracture level, initial WCR, initial KA. All data were statistically analyzed.

Results: An average of T-score was -3.5 and the changes of KA between initial and final follow-up were average 3.5°. Compression of anterior column were progressed to 8.5%. The changes between initial and final WCR in Group I (N=24) was 17.8%, and Group II (N=18) was 3.3%. T-score in group I was -3.4 and group II was -3.8 (p=0.228). vertebral fracture level were 10 T12, 12 L1, 2 L2 in group I; 6 T12, 6 L1, 6 L2 in group II (p=0.156). Initial WCR was 0.74 in group I, 0.63 in group II, and there was statistical difference between two groups (p=0.002). Initial kyphotic angle was 13.9° in group I, 16.2° in group II respectively (p=0.392).

Conclusion: The conservative treatment with short-term bed rest and early ambulation is effective and valuable method to patients who have osteoporotic thoraco-lumbar compression fractures. There was no statistical difference between two groups according to BMD, vertebral fracture level, KA. But in comparison with initial WCR between two groups, there was statistical difference. That means, in the case of small initial compression of anterior column, the progression of compression was bigger than else. In these patients, more strict use of appropriate brace and careful follow-up should be needed.

Key Words: Compression fracture, Osteoporosis, Conservative treatment

* Address for Correspondence : **Young-Do Koh, M.D.**

Department of Orthopedic Surgery, Ewha Univ. Mok-dong Hospital, Seoul, Korea
911-1 Mokdong Yangcheon-gu Seoul, 158-065 Korea
Tel : 82-2-2650-5564, Fax : 82-2-2642-0349, E-mail : ydkoh@ewha.ac.kr

: 2005 11 28 , : 2005 11 29 , : 2005 12 7 , : 2005 12 15

25%, 80

70
50%가

(wedge compression ratio)

가 가 (1,2)

가 가 (Fig.1,2).

1 가

가 (3). 가 5 가 가

1 , 10% 10%

2

1 24 , 2 18
Independent sample t-test,
Wilcoxon rank sum test

2003 1 2004 10
65 가

DEXA T-score

42 , 1 -3.5 13.2°
16.7°
3.5°

4 , 가 38 (90.5%)
72.5 (65-82) . 60 가 14 , 70 가 22 , 80
가 6 12 16 0.61 .
14.6

11 2 8.5%
42 12 16 ,
1 18 , 2 8 11
DEXA (Dual Energy
x-ray Absoptiomerty)

1

2~3 가 10% 17.8%가
, 2 10% 3.3%가

(log-rolling) 1 T-score가 -3.4 2
Jewett -3.8

($p=0.288$).
 1 가 10 (41.7%), 2 가 12 (50%), 3 가 2 (8.3%),
 4 가 6 (33.3%), 5 가 6 (33.3%)

($p=0.156$).

1 0.74, 2 0.63

($p=0.002$),

가

1 13.1°, 2 17.8°
 (p=0.392),
 1 16.4°, 2 18.0°

1983 Denis(4가

, 4
 (T11-L2)

가 가
 2 가
 가 60

50%가
 50%가
 가
 가

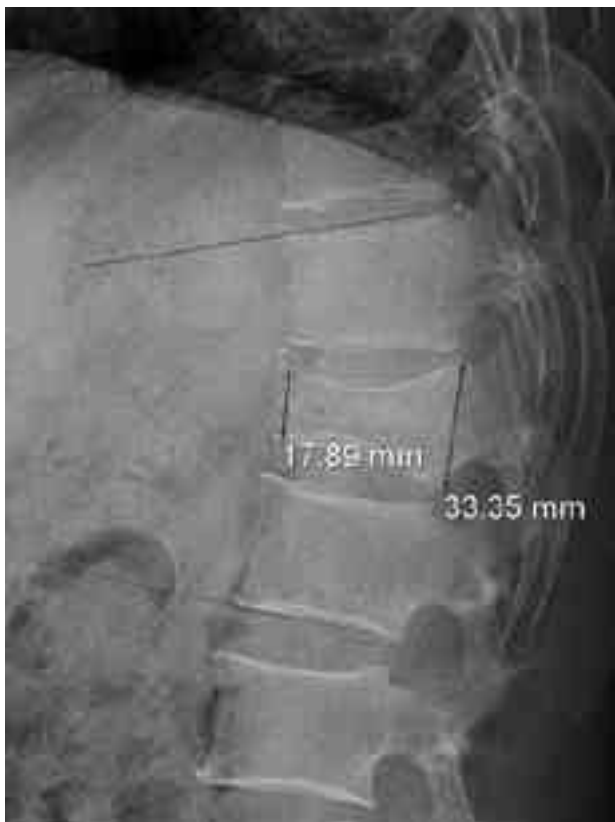


Fig. 1. Initial simple x-ray lateral view of T12 compression fracture. Kyphotic angle is measured as 22.2 °, and wedge compression ratio is measured as 0.53.

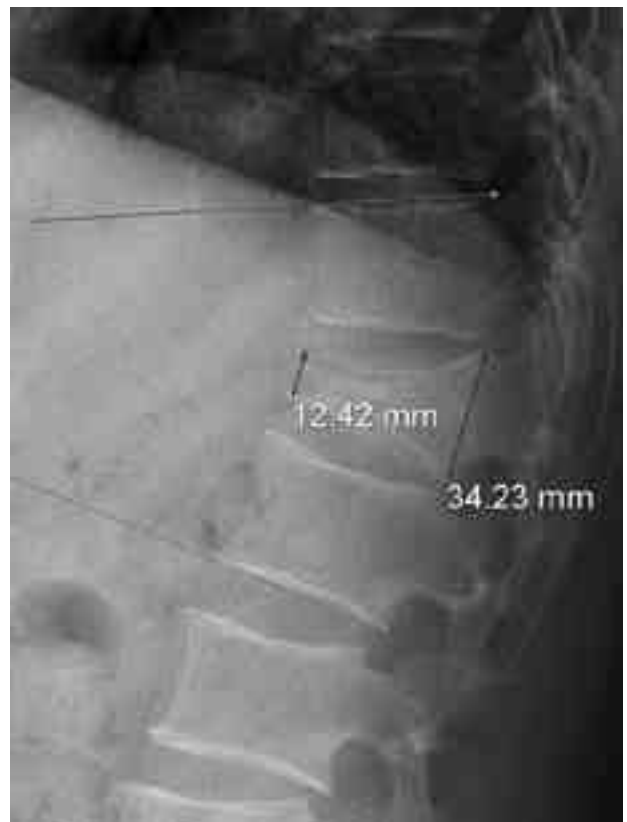


Fig. 2. Final simple x-ray lateral view. Kyphotic angle increases to 25.4 °, and wedge compression ratio decreases to 0.37.

1949 Guttman(11)
1997

12
Vanichkachorn(12) 1-2
가 . Gaines (13),
Weinstein (14), Mumford (2) 4

(5,6) , Reid (7) 21
가 6 , 8-14
1 Denis

18 5 3~6
Cantor (15)

. Reid (7) 35 15

, Hitchon (8) 4°
20° , 50%
가 50% 가 3.5°

. Domenicucci (9)
20° (16)

가
Whitesides (10) 가

Denis (5) 46 가
가 가 가

(vertebroplasty) 가 1
가 3
3.5° 8%

가 가 가 가
50° . Willen (17) 30°
(14)

가

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