

Fig. 2. Disc height measurement

- Frymoyer method
- $A/B \times 100(\%)$

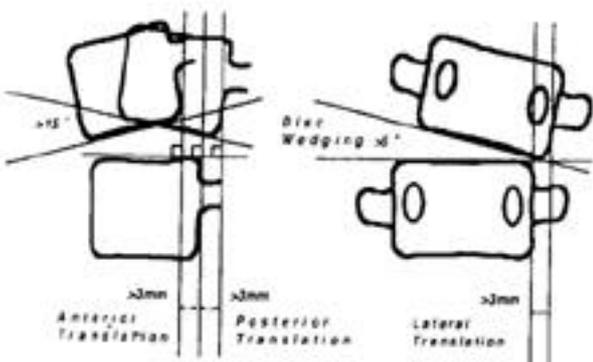


Fig. 4. Aota's criteria of instability

- > 15° Rotatory hypermobility
- > 3 mm anterior translation
- > 3 mm posterior translation
- > 3 mm lateral translation
- > 5° disc wedging

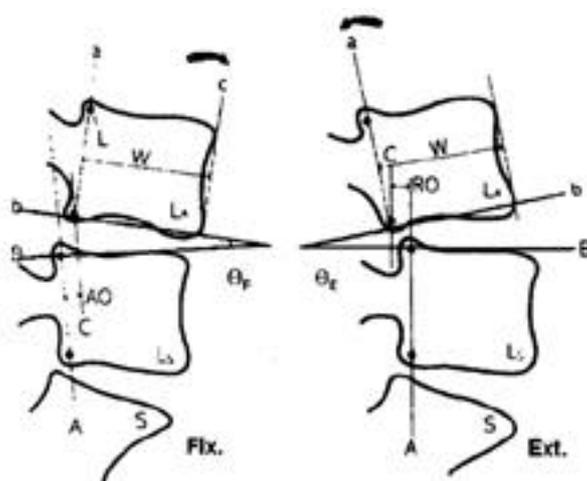


Fig. 3. Angular motion measurement

- Dupuis method

E ~ F

Table 1. Preoperative disc degeneration.

Grade	I	II	III	IV	V
Upper	0	2	9	5	0
Lower	0	7	4	3	2

1. (MRI grade)

Modified Pearce classification

grade II 2, grade

III 9, grade IV 5, grade II 7, grade III 4, grade IV 5

(Table 1).

2.

$-3.0 \pm 4.8 \%$, grade III
 $-3.0 \pm 13.9 \%$, grade IV

(P=0.649)(Fig. 5).

grade III
 $-2.0 \pm 5.4 \%$, grade IV
 $-8.4 \pm 5.5 \%$

가 (P=0.046)(Fig. 5).

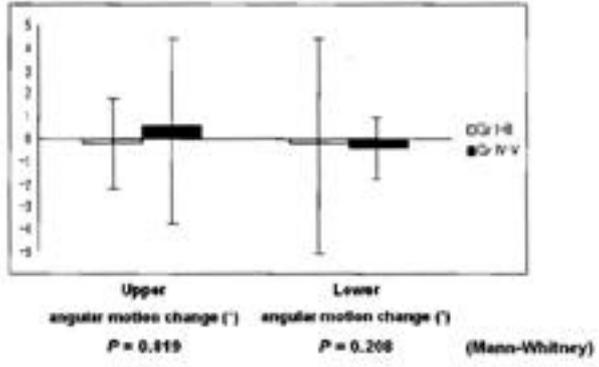
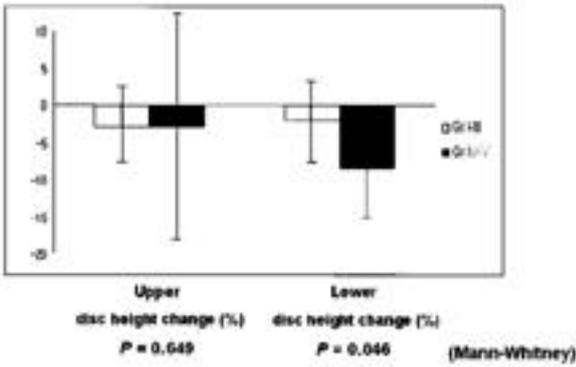


Fig. 5. Disc height change according to disc degeneration (MRI grade)

Fig. 6. Angular motion change according to disc degeneration (MRI grade)

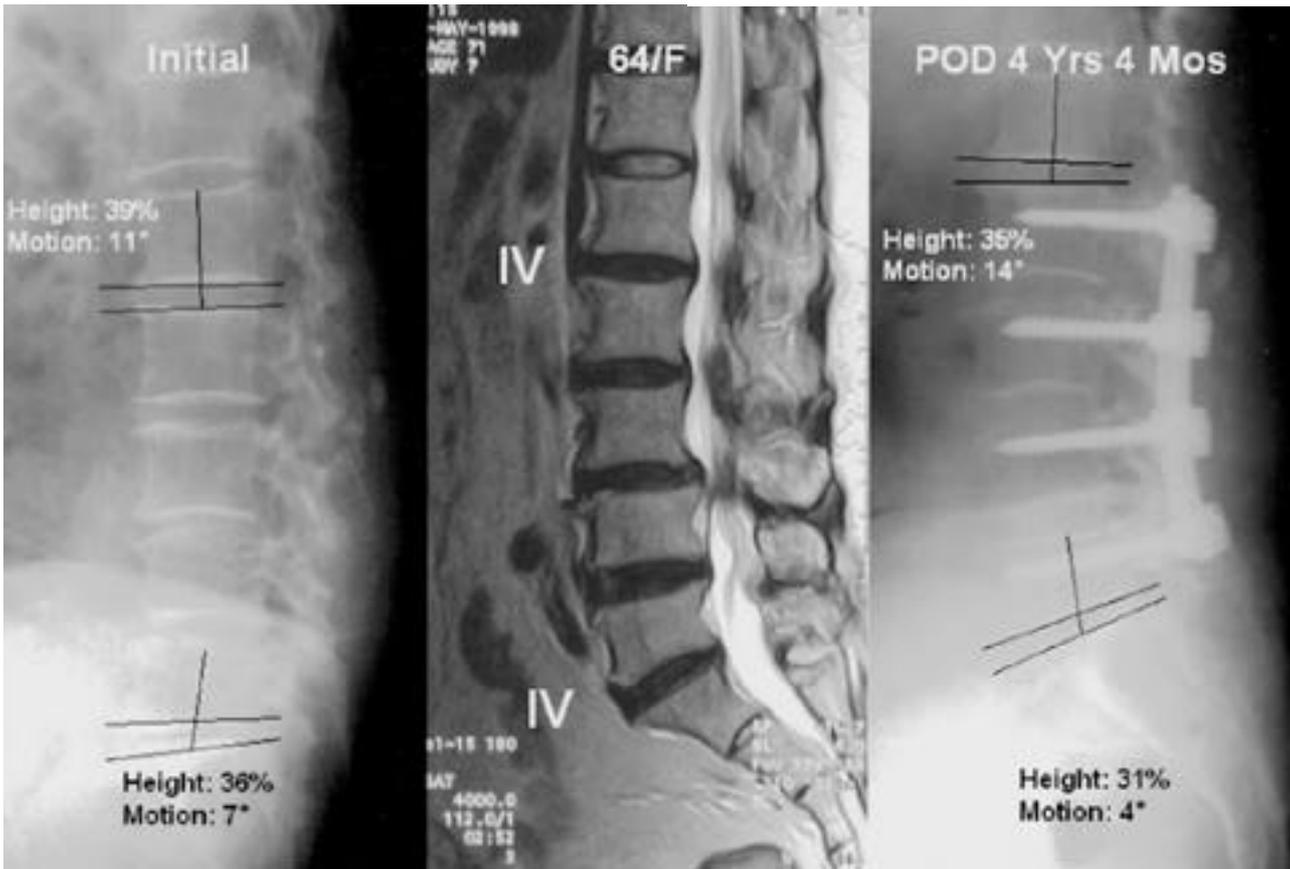


Fig. 7. 65-year-old woman with degenerative lumbar scoliosis shows less changes of the disc space ratio and the angular motion in the upper & lower adjacent segments after follow-up 5 years 2 months (MRI grade- upper: IV, lower: III).

3. (P=0.819)(Fig. 6).
 grade III
 $-0.2 \pm 4.9^\circ$, grade IV
 $-0.4 \pm 1.5^\circ$
 2.2° , grade III
 , grade IV $-0.2 \pm 0.6 \pm 4.2^\circ$ (P=0.208)(Fig. 6).

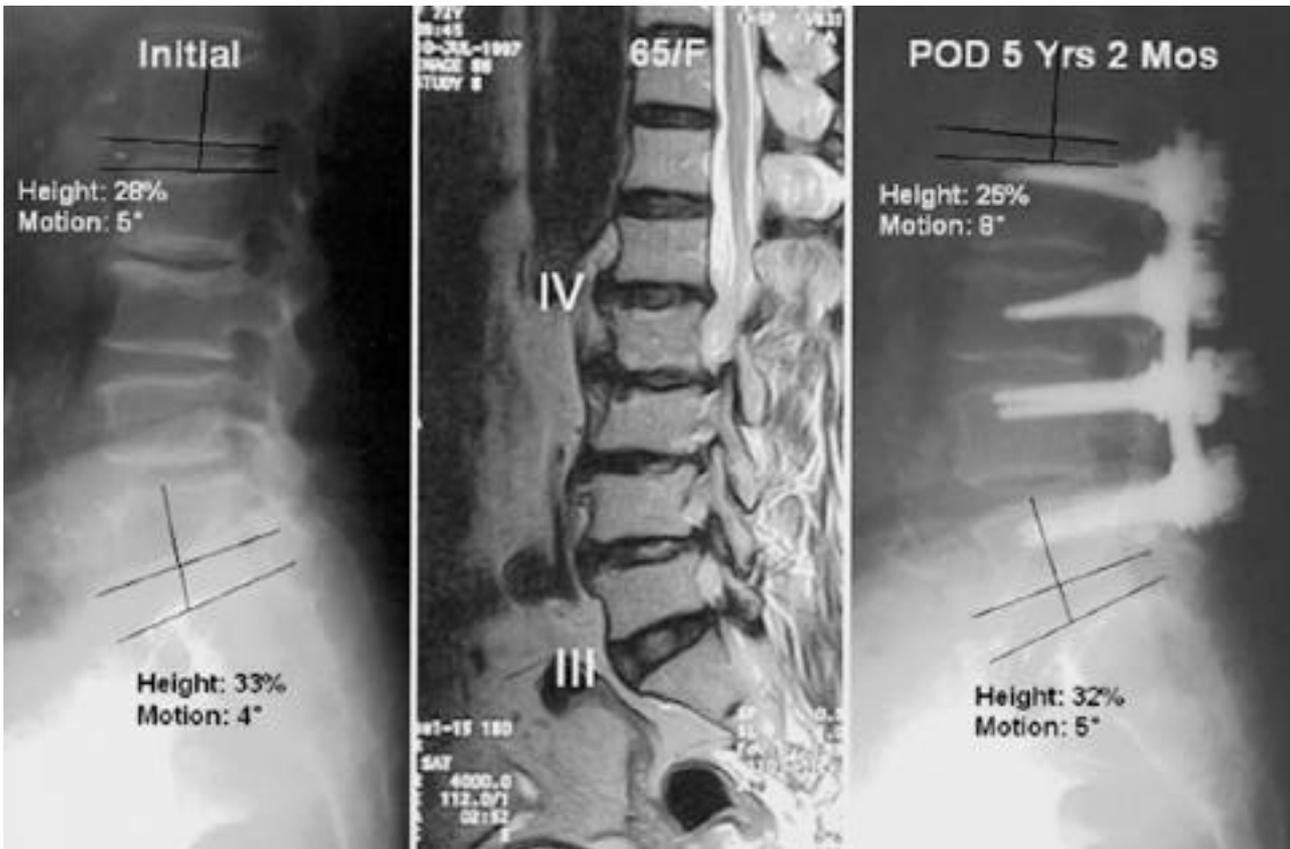


Fig. 8. 64-year-old woman with degenerative lumbar scoliosis shows decreased changes of the disc space ratio in the upper & lower adjacent segments and less changes of the angular motion in the upper & lower adjacent segments after follow-up 4 years 4 months (MRI grade- upper: IV, lower: IV).

Table 2. Postoperative instability.

Upper level instability	Gr I-III	Gr IV-V
Yes	0	2
No	11	3

p=0.083(Fisher's exact test)

Lower level instability	Gr I-III	Gr IV~V
Yes	0	0
No	11	5

p=1.000(Fisher's exact test)

(Table 2).

grade III 11
 grade IV 5 (P=1.000)

(Table 2).

4.

grade III 11
 , grade IV 5 2 (P=0.083)

가 , 가 가 가 가 가 가 가

가 가 L5-S1 MRI
 가 가 . Horton , ,
 8) L5-S1
 75~90%
 T2-weighted MRI
 가 가 L5-S1
 , L5-S1 Brodsky 2)
 가 64%,
 59.6%가
 (2.7%)
 L5-S1 가 L5-S1
 가 , Moskowitz 11)
 . Cochran 4) 5
 89% , 73% Frymoyer 7), Friberg 6), 9)
 , L5-S1
 MRI 가 grade IV
 가 가
 , Holt 8) L5-S1 3)
 가 , 가
 S1 가 L5-
 (lever arm) (pull out
 force) 가 가
 , Aota
 가 1) 25.5%, 2.6%
 , Lehmann 10) Quin-
 nell Stockdale¹³⁾
 가
 가
 가
 16
 가 grade IV 2
 1 , junctional kyphosis
 Pfirrmann 12)
 , T2-weighted MRI가
 1) 가

MRI
 ,
 , grade IV
 ,
 가 ,
 가 .
 ,
 grade III 가 MRI
 2
 가 .
 가 가

REFERENCES

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가
 : 1996 7 2000 2 5
 22 , 2 가 16 5 , 11 , 64
 (57~74), 41 (28~59) .
 가 MRI (Modified Pearce
 classification) , , - ;
 (angular motion)

:
 가 grade IV
 가 (P=0.649),
 가 (P=0.046).
 (P=0.819, P=0.208). 2
 (P=0.083, P=1.000).

:
 MRI 가 grade III 가 가 가
 가 가 가

: , , ,