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Local Bone versus Autogenous Iliac Bone Graft for Posterolateral Lumbar Fusion in the Same Patient

Kyu-Jung Cho, M.D., Dong-Hun Choi, M.D., Sae-Rom Jung, M.D., Seung-Rim Park, M.D.

Department of Orthopedic Surgery, College of Medicine, Inha University, Incheon, Korea

– Abstract –

Study Design : A prospective study

Objectives : To determine the usefulness of local bone obtained from laminectomy and decortication as graft bone instead of autogenous iliac bone in posterolateral lumbar spinal fusion.

Materials and Methods : Thirty- one patients underwent posterolateral lumbar spinal fusion with pedicle screw instrumentation. Local bone was inserted in the right side of intertransverse space and autogenous iliac bone was in the left side. We compared fusion rate in the radiographs at postoperative 6 week, 3 month, 6 month and 1 year.

Results : Radiographic fusion grading of local bone was 20 cases of grade 1, 8 cases of grade 2, 2 cases of grade 3 and 1 case of grade 4. Fusion grading of autogenous iliac bone was 24 cases of grade 1, 4 cases of grade 2 and 3 cases of grade 3. Bone fusion was complete after 9.1 months in local bone and 7.2 months in autogenous iliac bone. No significant differences was found between the two groups.

Conclusion : The local bone in posterolateral lumbar fusion is appropriate for satisfactory fusion instead of autogenous iliac bone if the amount of local bone is sufficient and decortication of the fusion bed is proper.

Key Words : Posterolateral lumbar spinal fusion, Local bone

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Address reprint requests to

Kyu-Jung Cho, M.D.

Department of Orthopaedic Surgery, College of Medicine, Inha University

#7-206 3-rd St, Shinheung-dong, Choong-gu, Incheon 400-711, Korea

Tel : 82-32-890-3661, Fax : 82-32-890-3047, E-mail : jungcho@inha.ac.kr

1999 11 2000 6 ,1 20 ,2
 58 1 8 ,3 2 ,4 1 . 가
 가가 31 . ,1 24 ,2
 1 2 1 10 1 6 . 4 ,3 3 (Table 1). Chi-square test
 가 5 , 가 26 30 가 1 가 (p<0.05).
 ,40 가 5 ,50 가 10 ,60 가 11 ,70 가 4 (1 ,2) (1 :19 ,2
 58 . :5 ,3 :1 ,4 :1) 92.3%, 가
 18 , 7 , (1 :20 ,2 :2 ,3 :2 ,4 :0)
 4 , 1 , 84.6% , (3 ,4)
 1 . (1 :3 ,2 :1 ,3 :1 ,4 :0)
 :0 ,4 :0) 80.0%, 가 (1 :4 ,2 :1 ,3
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 가 .
 가 , .
 가 50 cc ±2.4 , 가 7.2 ± 1.2 9.1
 50cc 가 .
 가 11.2 ± 4.2 cc, 30.1 ± 12.5 cc,
 가 5.7 ± 2.4 cc (P<0.05 in t-test).
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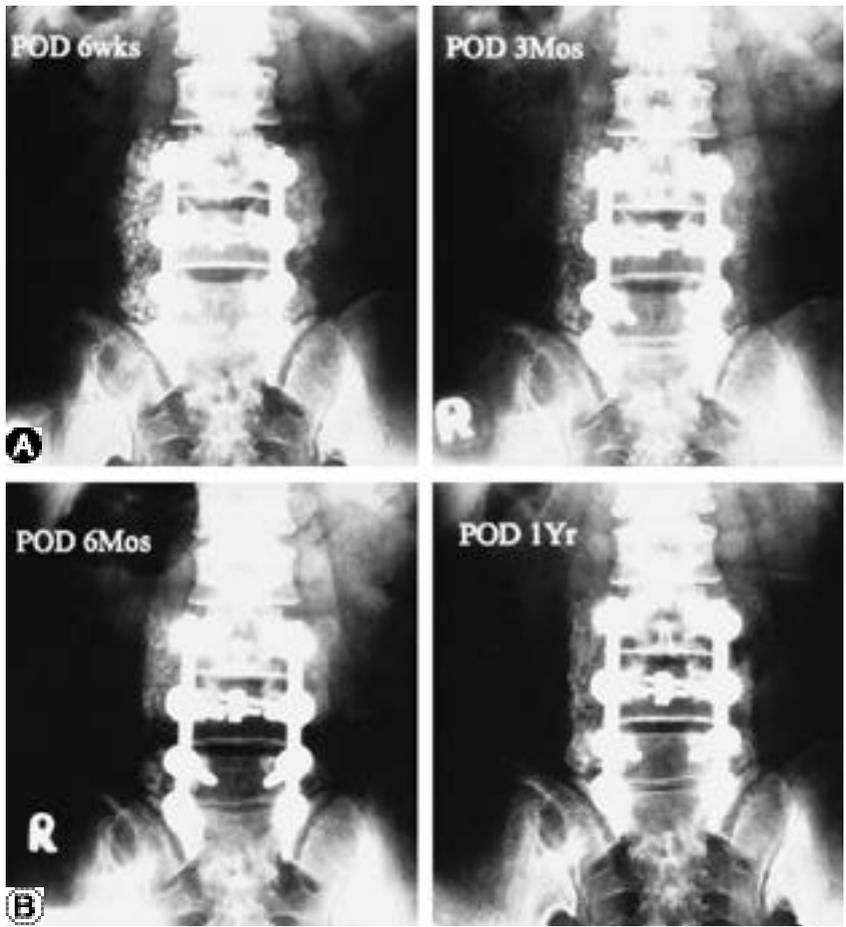


Fig. 1. A 48 year-old female underwent posterolateral lumbar fusion with pedicle screw instrumentation. Local bone was inserted in the right intertransverse space and autogenous iliac bone was in the left side. The radiographs were taken at postoperative 6 week, 3 month (A), 6 month and 1 year (B). The local bone was incorporated more rapidly than autogenous iliac bone, but no significant differences were found between two groups.

Table 1. Radiographic fusion grading of local bone and autogenous iliac bone

Grade	Local bone	Autogenous iliac bone
1	20	24
2	8	4
3	2	3
4	1	0
Total	31	31

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Morone Boden⁴⁾
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100:0, 100:50, 50:50, 25:75

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Sassard⁶⁾

60%

56%

가 가^{4,6)}

(Grafton)

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⁷⁾ Knapp

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Jones³⁾



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 , 1 24 , 2 4 , 3 3 . 9.1 ± 2.4
 , 가 7.2 ± 1.2 . 가
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Tel : 82-32-890-3661, Fax : 82-32-890-3099, E-mail : jungcho@inha.ac.kr