

Outcome Of Impaction Bone Grafting In The Management of Acetabular Defects With The Use Of Uncemented Acetabular Cups : Autograft And Irradiated Femoral Head Allograft

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INTRODUCTION:

Restoring acetabular bone loss in Total Hip Arthroplasty (THA) surgery is challenging. Traditionally cemented technique of acetabular impaction bone grafting (AIBG) has been thought to result in better outcomes. The aim of this study was to look at the outcomes of AIBG with uncemented acetabular cups using either femoral head autograft or gamma irradiated femoral head allografts.

METHODS:

This was a retrospective study. Graft integration was evaluated radiologically and functional outcome was assessed with Oxford Hip Score (OHS).

RESULTS:

There were 38 hips which had AIBG with an uncemented cup between 2009 and 2021 in our institute. The mean age was 54.8 years. There were 21 complex primaries and 17 revision THA. Autograft was used in 12 hips while allograft in the remaining 26. The mean follow-up was 5.75 years.

All autologous bone grafts integrated whereas 92.3% of allografts integrated at final follow-up. Two allografts did not integrate and resulted in acetabular aseptic loosening with cup migration. One patient is awaiting revision surgery while the other sustained recurrent hip dislocations but does not want revision surgery. The mean OHS was 41 (range, 21 - 48)

Table 1 showing distribution of patients according to acetabular defect

Acetabular defect (Paprosky Classification)	No.	%
2A	10	26.3
2B	12	31.6
2C	5	13.2
3A	8	21
3B	3	7.9

DISCUSSIONS:

The use of cementless implants with AIBG using autologous bone graft classically integrate well. The effects of gamma irradiation on skeletal tissue allografts have been known to cause negative effects to their biology and biomechanical strength which may impair graft integration and result in failure. However, in our study, both autologous bone graft and gamma irradiated allograft have shown high rates of graft integration.

CONCLUSION:

Performing AIBG with cementless cups in primary or revision THA with acetabular defects yields satisfactory results with regards to bony integration, implant survivorship and functional outcomes.