

Retrograde Cement Extrusion Into Femoral Nutrient Vessels Following Uncomplicated Total Hip Arthroplasty: A Case Report

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INTRODUCTION:

The present concepts in Total Hip Arthroplasty advocate mechanical cement interlock with trabecular bone utilizing the third-generation cementing technique. However, the force generated can easily reach peak pressure of 122 kPa to 1500 kPa, leading to extrusion of cement through nutrient foramina into femoral cortex into nutrient vessels, henceforth the retrograde arteriovenogram.

CASE REPORT:

Mrs. K, a 76 years old lady who pre-morbid ADL-independent had a fall and sustained a closed right neck of femur fracture. She underwent cemented right total hip arthroplasty. Acetabulum cup of 47mm and femoral stem size 1 was utilized. Femoral canal was prepared and medullary cavity plug inserted before retrograde cement was introduced using the cementing gun. Intraoperative no complications were noted. This case has been followed up to a year with no adverse effect.

DISCUSSIONS:

The post-operative radiograph demonstrated a linear radio-opacity communicating with the posterior aspect of the femoral shaft which continues proximally and medially for approximately 10cm. Its uniformity in shape and position corresponds to the vascular supply of proximal femur. In Farouk et al cadaveric study [1] nutrient vessel arises in 166 ± 10 mm from the greater trochanter and is a branch of the second perforating artery from the deep femoral artery. Knight et al [2] infer that retrograde cement extrusion occurs in female patients with small stature and small endosteal canal. Cement extrusion unlikely will influence the long haul survival of prosthesis as shown in the radiograph that cement is well pressurized to interlock with the endosteal bone.



Moreover, because of extensive anastomoses of perforating branches of the deep femoral artery, segmental obliteration of nutrient artery alone is unlikely to lead to vascularity issues.

CONCLUSION:

Cement extrusion into the nutrient foramen is a vital differential in presence of posterior medial cement in the diaphysis of the femur following total hip replacement. This is to differentiate from extra osseous extrusions due to the iatrogenic breach of the femoral cortex suggesting periprosthetic fracture which affects the long term survival of prosthesis.

REFERENCES:

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2. Knight, J.L., Coglion, T., Hagen, C., & Clark, J. (1999). Posterior distal cement extrusion during primary total hip arthroplasty: A cause for concern?. *The Journal of arthroplasty*, 14(7), 832-839.