

Navigating Pitfalls: Anterior Cortical Perforation in Direct Anterior Hip Arthroplasty – A Case Report

Shahril Shuhairi Sabari, Rizal Abd Rani, Juzaily Fekry Leong, Muhammad Fathi Hayyun, Nor Hamdan Mohamad Yahaya

Department of Orthopedic and Traumatology Hospital Canselor Tuanku Muhriz, HUKM

INTRODUCTION:

The direct anterior approach (DAA) in total hip arthroplasty (THA) offers advantages like faster recovery and reduced pain but isn't devoid of complications¹. We present a case of anterior cortical perforation post-DAA covering the clinical presentation, diagnosis, and treatment of this rare complication, emphasizing the importance of skill and vigilance in DAA procedures.

REPORT:

A 62-year-old woman, BMI of 35 with history of bilateral hip THA with left hip done in 2016 via DAA and right hip in 2020 via lateral approach. She presented with left hip pain following a fall in October 2023, preceded by intermittent pain and muscle spasm over the past year. The pain worsened progressively especially while walking full weight bearing. There was no associated constitutional symptoms suggesting of infection. Examination revealed tenderness over the left hip joint mainly over the anterolateral thigh. The hip motion was limited. Blood parameters were normal, ruling out ongoing infection. Radiographs revealed radiolucency around the proximal femoral stem with osteopenia (Figure 1), and subsequent CT scan indicates loosening of the left femoral component with anterior cortical perforation proximal femur (Figure 2).



Figure 1: Plain radiograph of pelvis showing loosening of left THA implant

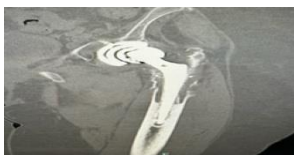


Figure 2: CT left hip showing anterior cortical perforation.

Revision of left THA was performed with cementless cup, dual mobility articulation and cementless Wagner stem for the femur. During surgery, we discovered a significant defect in the anterior cortex of proximal femur, measuring 7cm x 3cm, exposing the femoral stem. Additionally, we observed a segmental defect in the superior acetabular wall.

The removal of previous cemented stem was easy due to anterior cortical perforation. The distal length of Wagner stem was 13 cm to bypass the cortical perforation and lytic area (Figure 3).



Figure 3: Postop xray showing long Wagner femoral stem.

Patient was put on non-weight bearing for 6 weeks. Post-operatively the thigh pain was reduced and she was allowed to walk partial weight bearing.

CONCLUSION:

Femoral perforation is a rare DAA intraoperative complication. It is essential to detect and manage early. The revision of chronic anterior cortical perforation needs long tapered wedge stem to bypass the defect side and need protected weight-bearing postoperatively.

REFERENCES:

1. Eto S et al. The Direct Anterior Approach is Associated with Early Revision Total Hip Arthroplasty, *The Journal of Arthroplasty* (2016).
2. Kinney MC et al. AAHKS Best Podium Presentation Research Award: Femoral Perforation During Direct Anterior Approach Total Hip Arthroplasty: Incidence, Cohort Characteristics, and Management. *The Journal of Arthroplasty*. 2022 Aug 1;37(8):S721–6.