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Posterior Femoral Neck Exostosis in a Young Adult: Open Resection and Prophylactic Dynamic Hip Screw Fixation – A Case Report

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Learning Point of the Article:

In femoral neck osteochondroma, resection may destabilize the neck, and prophylactic DHS fixation can prevent post-operative fracture in selected high-risk cases.

Abstract

Introduction: Osteochondromas of the femoral neck are rare in adults and may cause mechanical hip pain or impingement. Surgical resection may weaken the femoral neck, exposing patients to fracture risk. Prophylactic fixation remains debated.

Case Report: A 26-year-old woman presented with chronic posterior hip pain. Imaging revealed a posterior femoral neck osteochondroma. Open resection resulted in significant cortical weakening, leading to prophylactic dynamic hip screw fixation. Functional outcome was favorable with stable radiological findings at follow-up.

Conclusion: In selected cases, prophylactic fixation after femoral neck osteochondroma resection may reduce post-operative fracture risk.

Keywords: Osteochondroma, femoral neck, dynamic hip screw, hip pain, prophylactic fixation.

Introduction

Osteochondromas are the most common benign bone tumors and are typically asymptomatic. Femoral neck involvement is uncommon and may lead to femoroacetabular impingement or mechanical hip pain [1-5]. Imaging plays a crucial role in diagnosis, demonstrating continuity of the cortex and medullary canal and excluding malignant transformation [6]. (Fig. 1-6)

Surgical excision is indicated in symptomatic cases. However, resection of femoral neck lesions may compromise structural integrity and increase fracture risk [7,8]. Prophylactic fixation is well established in the management of impending pathological fractures and may be extrapolated to this setting [9-13].

Case Report

A 26-year-old woman (body mass index 33 kg/m2) presented with chronic left posterior hip pain exacerbated by activity. Physical examination revealed pain during internal rotation and flexion, without neurological deficit.

Radiographs and computed tomography scan demonstrated a well-defined posterior femoral neck osteochondroma measuring approximately 13.5 × 28.5 mm (Fig. 1-6) . Bone scintigraphy showed moderate hyperfixation. Magnetic resonance imaging confirmed the benign appearance of the lesion without features of malignant transformation (Fig. 1-6) [6].

Surgical technique

The patient was positioned in lateral decubitus. A posterior

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Author's Photo Gallery


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Figure 1: Anteroposterior radiograph of the pelvis demonstrating a pedunculated osseous lesion arising from the proximal left femur, consistent with an osteochondroma.

Figure 2: Dunn lateral radiograph of the hip obtained with the hip flexed and abducted. The bony prominence is visible along the posterosuperior aspect of the femoral neck. The projection is particularly useful in assessing morphological abnormalities associated with femoroacetabular impingement.

Figure 3: Second Anteroposterior view of the pelvis demonstrating a pedunculated osseous lesion arising from the proximal left femur, consistent with an osteochondroma.

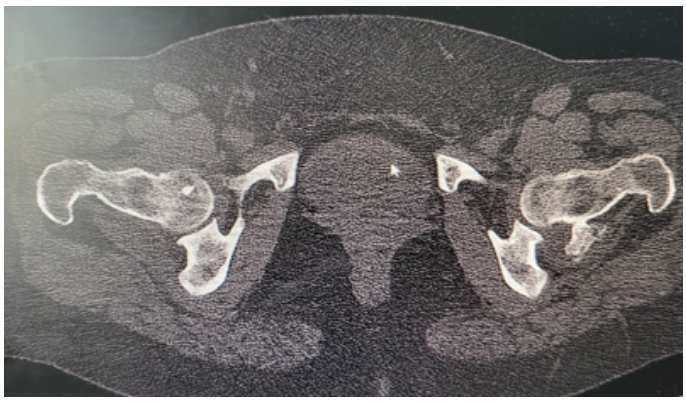

Figure 4: Axial computed tomography scan showing a posterior femoral neck osteochondroma of the left hip. The lesion demonstrates corticomedullary continuity with the proximal femur, a characteristic feature of osteochondroma.

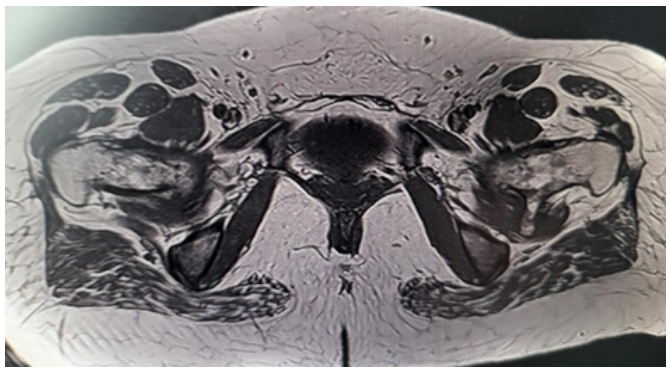

Figure 5: Preoperative axial magnetic resonance imaging demonstrating posterior femoral neck fracture. The lesion arises from the posterior femoral neck with continuity of the cortical and medullary bone, characteristic of osteochondroma, and illustrates its proximity to the adjacent soft-tissue structures.

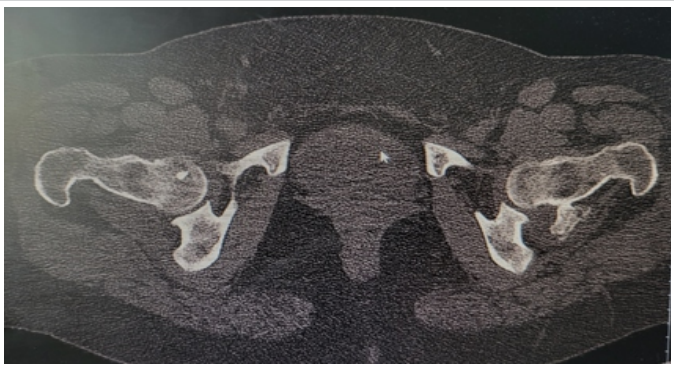

Figure 6: Axial computed tomography scan of the pelvis demonstrating the corticomedullary continuity with the proximal femur and projects posteriorly from the femoral neck, allowing detailed assessment of its osseous anatomy for surgical planning.

approach allowed direct visualization of the lesion. Complete resection required the removal of a cortical window approximately 1 × 3 cm, resulting in significant weakening of the femoral neck. Considering fracture risk described after similar resections (Fig. 7) [7,8], prophylactic dynamic hip screw (DHS) fixation was performed using a 105 mm lag screw and side plate (Fig. 8 & 9) [9-13].

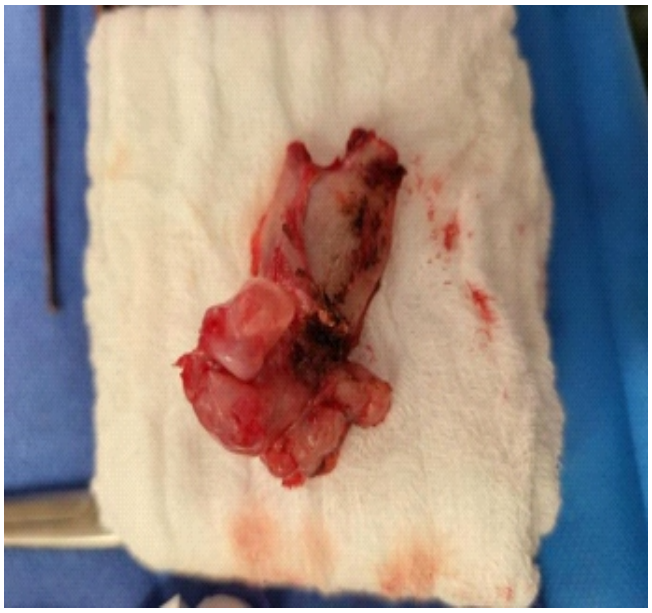

Figure 7: Macroscopic appearance of the resected femoral neck osteochondroma showing a cartilage cap overlying mature trabecular bone.

Outcome and follow-up

Post-operative recovery was uneventful. Progressive weight-bearing was authorized. At 10 months, the patient was pain-free with restored hip mobility. Radiographs demonstrated stable fixation and progressive cortical remodeling, without complications (Fig. 8 & 9) [9-13].

Discussion

Femoral neck osteochondromas are rare but may cause significant symptoms due to mechanical impingement [2-5]. Posterior localizations are particularly uncommon. Although malignant transformation is exceptional in solitary lesions, imaging assessment is mandatory (Fig. 1-6) [1,6].

Figure 9: Post-operative Lateral view of the pelvis following open resection and prophylactic dynamic hip screw fixation of the proximal femur. Hardware position is satisfactory, with preservation of the hip joint congruency and no evidence of immediate post-operative complications.

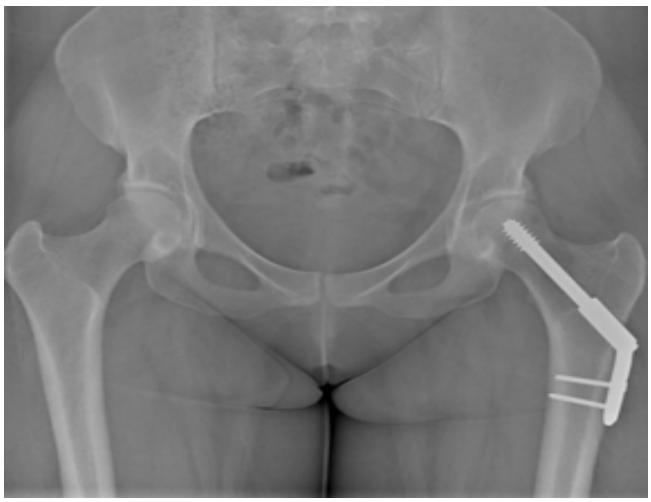

Figure 8: Post-operative anteroposterior view of the pelvis following open resection and prophylactic dynamic hip screw fixation of the proximal femur.

Post-operative femoral neck fractures after excision of benign lesions have been reported, highlighting the biomechanical impact of cortical defects [7,8]. Prophylactic fixation follows principles used for impending pathological fractures and aims to prevent catastrophic complications [9-13].

In this case, DHS fixation provided immediate stability and allowed early mobilization with excellent clinical outcome (Fig. 8 & 9).

Conclusion

Posterior femoral neck osteochondroma is an uncommon cause of hip pain in adults. When surgical excision results in significant cortical weakening, prophylactic DHS fixation may represent a safe strategy to reduce fracture risk (Fig 8 & 9).

Clinical Message

Surgical excision of femoral neck osteochondromas can significantly weaken the femoral neck, and in selected cases, prophylactic fixation should be considered to prevent post-operative fracture.

Declaration of patient consent: The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given the consent for his/ her images and other clinical information to be reported in the journal. The patient understands that his/ her names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Conflict of interest: Nil **Source of support:** None

References

1. Kitsoulis P, Galani V, Stefanaki K, Georgios P, Georgios K, Niki J.A. , Maria B. Osteochondromas: Review of the clinical, radiological and pathological features. Orthopedics 2008;31:1018.

2. Mengnai Li, Timo Luettringhaus, Kevin R Walker, Peter A Cole Operative treatment of femoral neck osteochondroma through a digastric approach in pediatric patient: a case report and review of the literature, J Pediatr Orthop B. 2012;21(3):230-4.

3. Fox J, O'Donnell J. Femoral neck exostosis causing femoroacetabular impingement. Hip Int 2016;26:e18-21.

4. Aldashash F, Elraie M. Solitary osteochondroma of the proximal femur causing sciatic nerve compression. Ann Saudi Med 2017;37:166-9.

5. Siebenrock KA, Ganz R. Osteochondroma of the femoral neck. Clin Orthop Relat Res 2002;394:211-8.

6. Murphey MD, Choi JJ, Kransdorf MJ, Flemming DJ, Gannon FH. Imaging of osteochondroma: Variants and complications with radiologic-pathologic correlation. Radiographics 2000;20:1407-34.

7. Haviv B, Ganel A, Allon R, Yasin M, Iatrogenic femoral neck fracture after osteochondroma excision. Arch Orthop Trauma Surg 2010;130:1239-43.

8 Korula RJ, Jebaraj I. Fracture of the femoral neck after excision of osteochondroma. Injury 1995;26:635-6.

9. Haidukewych GJ. Prophylactic fixation for impending pathological fractures. J Am Acad Orthop Surg 2009;17:493-502.

10. Li M, Luettringhaus T, Walker KR, Cole PA. Operative treatment of femoral neck osteochondroma through a digastric approach in a pediatric patient: A case report and review of the literature. J Pediatr Orthop B 2012;21:230-4.

11. Hussain W, Avedian R, Terry M, Peabody T. Solitary osteochondroma of the proximal femur and femoral acetabular impingement. Orthopedics 2010j;33:51.

12. Muzaffar N, Bashir N, Baba A, Ahmad A, Ahmad N. Isolated osteochondroma of the femoral neck presenting as hip and leg pain. A case study. Ortop Traumatol Rehabil 2012;14:183-7.

13. Peterson HA. Multiple hereditary osteochondromata. Clin Orthop Relat Res 1989;239:222-30.

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