

Retraction

The article "Osteochondroma of femoral neck: a rare cause of sciatic nerve compression" is retracted by the Editor and Publisher, as per the request of corresponding author Dr. Mangesh M. Chandewar and co-authors, due to violation of the policies and practices of International Journal of Research in Orthopaedics.¹ While the review was in progress, a duplicate version of the article was published online in the Global Journal for Research Analysis (GJRA. 2018;7(10):48-49).

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1. Chandewar MM, Yadav S. Osteochondroma of femoral neck: a rare cause of sciatic nerve compression. Int J Res Orthop 2019;5:189-91. DOI: <http://dx.doi.org/10.18203/issn.2455-4510.IntJResOrthop20185346>.

Case Report

Osteochondroma of femoral neck: a rare cause of sciatic nerve compression

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ABSTRACT

Osteochondroma is most common primary benign bone tumor and comprising of more than one-third of primary benign bone tumors. Osteochondromas are usually extra-articular lesions secondary to their common origin from metaphysis of long bones. Osteochondroma of the femoral neck is atypical as they represent an intra-articular lesion. They are mostly asymptomatic depending on their size and location. We are describing a rare cause of sciatic nerve compression in an adult which turned out to be solitary osteochondroma of femoral neck. 18 years old man reported to us with complains of pain in left groin region, mass in buttock region associated with tingling sensations in left lower limb since 8 months. Patient complains of difficulty in sitting on hard surface. Sensation was decreased on plantar and dorsal aspect of left foot. A sessile mass measuring 6 x 4 cm on posterior femoral neck was seen on plain radiographs and CT. Electromyography showed moderate sciatic neuropathy of the peroneal and tibial branches. Surgical en-bloc resection was performed through posterior approach. The final pathological report indicated the tumor was an osteochondroma. Post-operatively symptoms resolved dramatically. At follow up, he had full resolution of neurologic findings. Postoperatively, the patient reported improvement in numbness and tingling in the leg. So we should have awareness and high index of suspicion of rare entities such as proximal femur osteochondroma during diagnosis and treatment of sciatic neuropathy along with other more common etiology.

Keywords: Osteochondroma, Sessile, Electromyography, Neuropathy

INTRODUCTION

Osteochondroma is a most common benign tumor containing both bone and cartilage, usually occurring near the end of long bone. Osteochondromas are usually asymptomatic; however they may cause variety of symptoms depending on their site and location. It is usually an extra-articular lesion arising from the metaphysis of long bone and seen most commonly at the knee, forearm, and ankle.¹ These tumors are commonly found as isolated lesion (90%) though it can present as a part of multiple hereditary exostoses.² Hereditary multiple exostoses, also known as Osteochondromatosis, is a rare, autosomally dominant condition that causes

multiple bony lesions. Muller believed that osteochondroma arise from a primary defect in periosteal differentiation in which ectopic collections of cartilage cells arise from the proliferative layer of the metaphyseal periosteum.³ Multipotent mesenchymal cells in the region of the perichondral groove of Ranvier have also been implicated in the development of osteochondromas.⁴ Osteochondroma grow until skeletal maturity; growth generally stops once the growth plates fuse though slow growth from the cap may continue over time, but this usually stops by age 30 years.⁵ Solitary osteochondroma of femoral neck is a very rare condition. Very rarely solitary osteochondroma linked with bursal inflammation, pain, compression of neurovascular structures and

malignant degeneration.⁶ The role of proximal femoral Osteochondroma in sciatic neuropathy very rarely reported in orthopedic literature. Osteochondroma of the femoral neck may lead to mechanical restriction of hip motion. Mechanical blockade can occur through direct contact of the widened and enlarged femoral neck against the ischium and acetabular rim. Non skeletal extrinsic complications can result from mass effect on the adjacent tissues including muscle, tendon, nerve and vascular structures. Nerve compression is rare and present in less than one percent of all cases of Osteochondroma.⁷

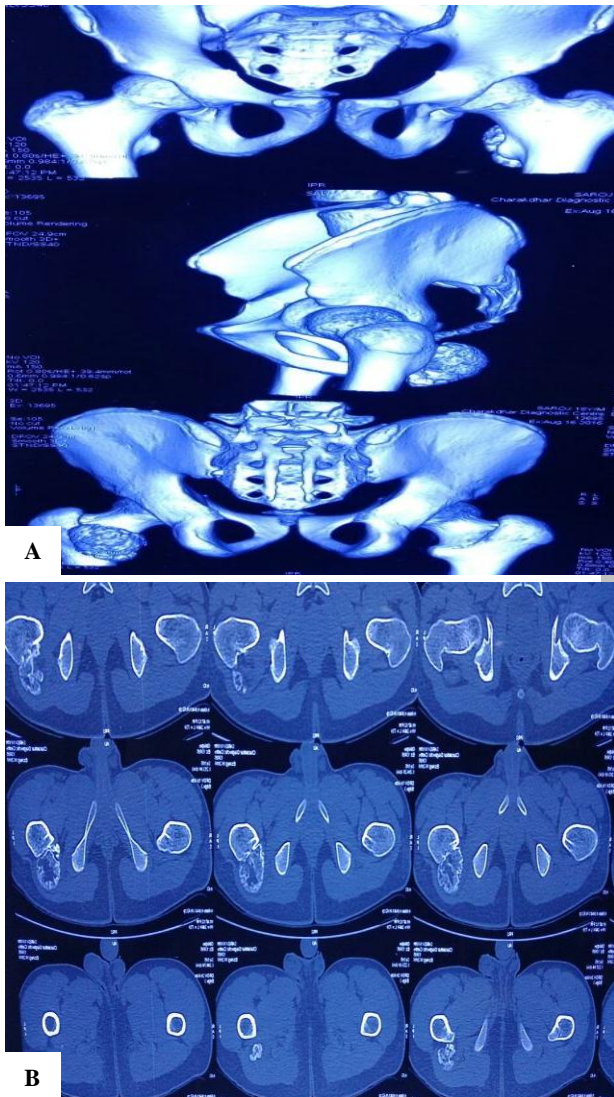


Figure 1 (A and B): 3D CT and axial section shows a sessile cauliflower like mass measuring approximately 6 x 4 centimeters attached to medial femoral neck and lesser trochanter and expand to antero-lateral and postero-lateral direction.

CASE REPORT

A 18 years old male presented with pain in left hip and pain and weakness of left lower extremity along with numbness and tingling in his toes and a palpable non-

mobile mass in his left groin extending to left buttock for 8 months duration. There were no overlying skin changes or erythema and mass was non-tender on palpation. Active hip flexion was limited to 90°. Further passive flexion was possible for 10° but very painful. Adduction was limited to 10° and extension 0°. Abduction was essentially normal, internal rotation was restricted to 15°. Motor strength was diminished for left Ankle dorsiflexion and plantar flexion. Sensation was diminished on plantar and dorsal aspect of foot.



Figure 2: A-P radiograph of pelvis showed sessile cauliflower like attached to medial femoral neck and lesser trochanter.

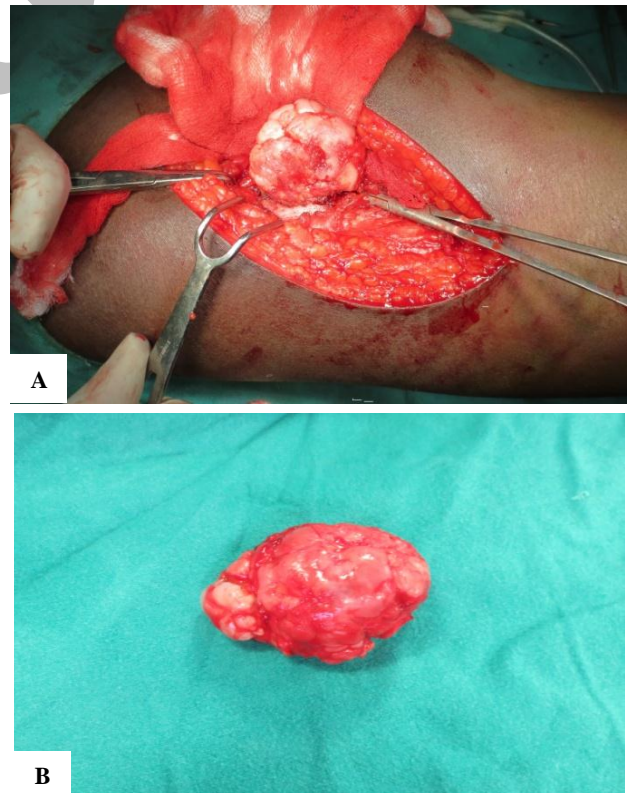


Figure 3 (A and B): Showing surgical en block resection performed through posterior approach.

An electromyography study demonstrated sciatic neuropathy with peroneal and tibia component. Pre-operative laboratory evaluation revealed a white blood cell count, differential count, erythrocyte sedimentation rate, C-reactive protein within normal limit. Surgical en-bloc resection was performed under general anesthesia in supine position with left hip flexed, abducted and slightly externally rotated through posterior approach. The final pathological report indicated the tumor as an osteochondroma. Symptoms resolved dramatically following surgery. Patient reported improvement in numbness and tingling.

At 18 month follow up this patient had full resolution of her sciatic nerve motor and sensory findings. Radiograph of hip shows no evidence of osteoarthritis or vascular necrosis of head of the femur.

DISCUSSION

The osteochondroma of femur originating from proximal left femur was solitary and sessile cauliflower like mass with its cortex continuous with cortex of the proximal femoral bone and also having homogeneous continuity with its medulla. However depending on the location of osteochondroma significant symptom may occur as a result of complications such as fractures, bony deformity, mechanical joint problem, vascular and neurological compromise and malignant transformation. Neurovascular compression occurs in <1% of all cases of osteochondromas.⁸ Osteochondroma of the femoral neck is relatively rare. It is atypical as it represents an intra-articular lesion. It has been described in association with trochanteric bursitis, sciatic nerve compression, a snapping hip, femoroacetabular impingement, a fracture at its pedicle.^{9,10} The differential diagnosis of sciatic nerve compression was substantial and divided into intraspinal, extra-spinal, pelvic and extra pelvic categories of anatomic etiology. Lumbar disc herniation and spinal canal stenosis are most common cause of sciatic nerve compression. Other potential site includes the hip joint such as acetabulum, para-labral cyst, the pelvis as seen in impingement by the obturator internus muscle, pelvic bone tumors, such as osteochondroma as in this case, female endometriosis and leiomyomas. Other less common cause of sciatic nerve compression includes vascular malformation, infectious disease and other tumors of bone and soft tissues. Hereditary multiple exostoses causes multiple bony projections with a cartilaginous cap. This bony exostoses have the potential to cause compression neuropathies but actual reported cases are rare. In our case, patient also demonstrated sign of sciatic nerve compression including weakness of the toe and ankle dorsiflexion and a diminished Achilles tendon reflexes. The osteochondroma in that case as seen on 3D CT and MRI had a sessile structure and extended outward broadly in the region of lesser trochanter. Based on literature search, there are case reports of solitary osteochondroma of femoral neck, which caused groin pain and stiffness. This contrasted with the

osteochondroma presented here, which caused sciatic nerve compression.

CONCLUSION

To conclude sciatic neuropathy can be due to various etiology. The syndrome may be a clinical manifestation of proximal femoral osteochondroma very rarely. So during diagnosis of proximal femoral impingement syndrome, we should take into accounts proximal femoral osteochondroma. Surgical en-bloc resection protecting the surrounding neurovascular structure is a reliable means of treatment which resulting resolution of symptoms dramatically.

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Ethical approval: Not required

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