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Case Report

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Uncommon presentation of a ganglionic cyst: a case study of intra muscular ganglion cyst of rectus femoris

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ABSTRACT

Ganglionic cyst most commonly occurs in hand and wrist. When it presents in uncommon location like in lower limb, it causes a diagnostic dilemma. One such case is ours, an uncommon presentation of intra muscular cystic ganglion of rectus femoris. Due to its unlikely presentation in rectus femoris, diagnosis and management was delayed. A 12 years old boy presented with complaints of pain and swelling over left lower limb in suprapatellar region. On radiographic and ultrasound examination, swelling was found to be cystic lesion in rectus femoris. Histopathological examination of biopsied specimen was found to be intra muscular ganglion cyst of rectus femoris. The patient's general condition improved with betterment in laboratory parameters, resolution of the lesion, without any sequelae, no residual deformity and excellent clinical outcome. To consider cystic ganglion as differential diagnosis, along with intra muscular myxoma, lipoma and synovial cyst in patients with lower limb intra muscular swelling.

Keywords: Cystic ganglion, Intramuscular cyst, Dilemma

INTRODUCTION

Ganglion cyst are benign soft tissue tumors, usually found on dorsal aspect of wrist. They are also found in uncommon locations like in gastrocnemius and quadriceps femoris muscle bellies. It's a fluid filled cyst with unknown pathogenesis. Mostly asymptomatic, but could cause pressure effect over adjacent neurovascular structures.[1]

Ganglionic cysts arising in atypical locations present a diagnostic challenge and might get misdiagnosed. They have been reported to originate from cartilage, nerves, and muscles. Intra articular ganglion cysts of the knee mainly involve the tendon sheath or joint capsule and infrequently the menisci, and anterior and posterior cruciate ligaments.[3-5] Somewhere reported to occur intraosseously in the distal epiphysis of the tibia and from peripheral nerve sheath particularly the common peroneal nerve.[6] Involvement of other nerves including the radial, ulnar, median and sciatic nerves have also been reported.[7] Cases of multiple ganglion cysts involving unusual sites like the temporo mandibular joint affecting young patients, the so called cystic ganglionosis, might indicate a genetic susceptibility and give new insights to the pathogenesis of this lesion.[8] To the best of our knowledge, this is one of the first few case reports to document an intramuscular ganglion cyst arising in the rectus femoris muscle itself.

CASE REPORT

A 12 years old, male child presented with complaints of swelling and vague pain over left thigh upon exertion. Swelling was gradual in onset, noticed by patient himself while bathing 6 months ago. Swelling was small in size about marble size when first noticed and then later evolved over a period of 6 months to attain the present size. It was asymptomatic to start with, then later since past 2 months, there was vague pain upon exertion and was associated with restriction of activities of daily life like unable to do cycling and run for long distances. Upon examination, swelling was over distal 1/3rd of thigh with normal

looking overlying skin with no scars and discharging sinuses. On palpation, there was no local raise of temperature, swelling was non tender and non-pulsatile. Skin over the swelling was pinchable and swelling was mobile in one direction (along long axis of the thigh). It was an oval shape swelling with dimensions around 5×4 cm. With uniform consistency and well-defined edges. There was no neurovascular deficit noted in the affected limb and knee range of motion (ROM) was 0-110 degree in comparison to 0-130 degree on unaffected side. On ultrasound evaluation, it was found to be ganglion cyst in the muscle belly of quadriceps muscle.

Patient was operated under spinal anesthesia, with no tourniquet. About 7 cm midline incision along the long axis of thigh, centered over swelling was given. Skin and subcutaneous tissue incised and retracted. Cyst was noted to be arising from muscle belly and was incised along with the capsule without spillage of contents.

Peri-operative period was uneventful. Suture removal done on post-operative day 14 and was made to walk full weight bearing on affected limb. Patient was followed up for a period of one year and there were no complications like recurrence.

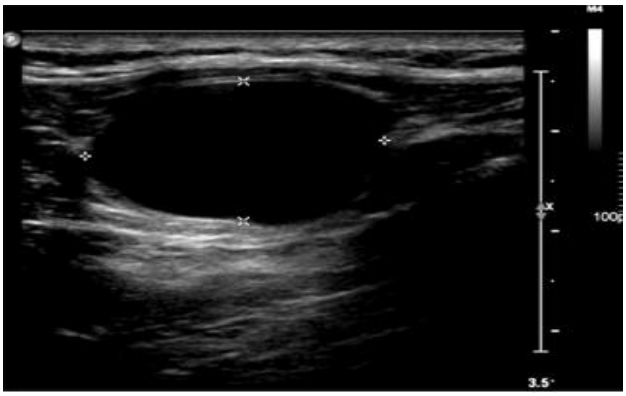

Figure 1: Sonographic image showing the non-lobulated mass of a cystic lesion (4.1×2.5 cm) within the rectus femoris of the quadriceps femoris muscle.

Figure 2: Clinical picture depicting swelling was over distal 1/3rd of thigh with normal looking overlying skin with no scars and discharging sinuses.

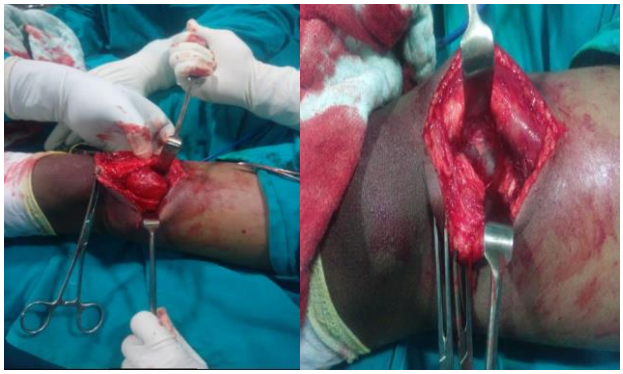

Figure 3: Intraoperative picture depicting cyst to be arising from rectus femoris muscle belly and was incised along with the capsule without spillage of contents.

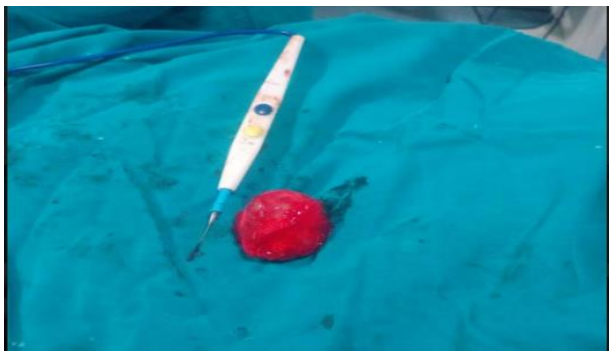

Figure 4: Cystic tumor approximately 4.1×2.5 cm in size was identified.

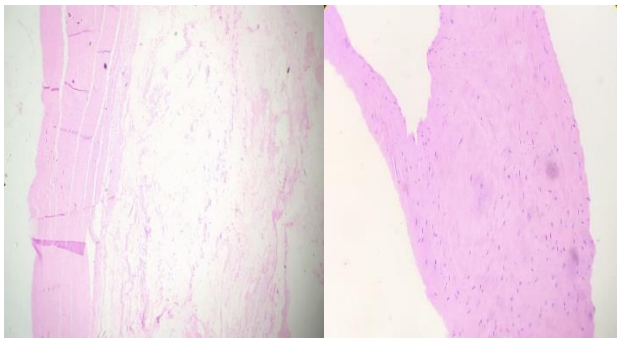

Figure 5: Photomicrograph section shows a dense fibrotic cyst wall with no epithelial lining, suggestive of ganglion cyst.

DISCUSSION

Ganglion cysts are benign soft tissue tumors with fluid filled cavity. The exact cause for its origin are unknown. However, it's presumed to arise from synovium or tendon sheath.[1] It is presumed that, as in baker's cyst, the synovial tissue herniates and becomes loculated, which later transforms to form mesothelium lining membrane.[2]

Its clinical presentation varies from small asymptomatic swelling over dorsum of wrist to large swelling causing

pressure symptoms over adjacent neurovascular structures and soft tissue.[1] Most common presentation is from extensor digiti communis over dorsal aspect, followed by space between flexor carpi radialis and abductor pollicis longus tendon on volar aspect.[3] Its source of origin varies from tendon sheath, cartilage, cruciate ligament, nerves and muscles.[4-7]

Intramuscular ganglion cyst in quadriceps femoris is a rare presentation and it usually present as palpable tender lump without any accompanying symptoms. However, wasting of associated limb could be noted, due to restricted use of limb, secondary to pain.

Plain radiographs of knee is unlikely to relieve any important diagnostic information. It is usually diagnosed with ultra sound. However, the limitation with ultrasound are its inability to give definite information regarding cyst and its association with adjacent soft tissue. Magnetic resonance imaging (MRI) is useful in such situations to clearly mark the extent and its relation with adjacent soft tissue. It is important to identify the extent of tumor, to avoid complications associated with incomplete excisions like recurrence.

A study by Nelson et al had shown, cure rate of 94% after excision.[3] Another study by Aydin et al on a case series of 40 cases has shown recurrence rate of 22%.[8] The common surgical complications following excision include damage to adjacent neurovascular structure. As shown by Aydinet al in their study.[8] The study showed 10% incidence of damage to palmar cutaneous nerve and 5% incidence of damage to radial nerve.

Intramuscular ganglion cyst in quadriceps femoris is unlikely presentation and there is limited literature on this topic. Unlike ganglion cyst of hand, which is a common form of presentation.

CONCLUSION

In this case report, we present a 12 years old male child with intramuscular ganglion cyst in quadriceps tendon managed by excision and biopsy with no post-operative complications and no recurrence after 1 year of follow up.

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Ethical approval: Not required

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