

Case Report

Unusual presentation of giant ganglion cyst from the infrapatellar (Hoffa's) fat pad of knee: a case report

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ABSTRACT

Ganglion cyst of the knee joint can be intra articular or extra articular. Large intra articular ganglionic cystic formations arising from the infrapatellar fat pad are quite uncommon and only few are reported. Treatment option is surgery (open/arthroscopic) depending on the site and size of the cyst. We report a case of giant ganglion cyst arising from the infra patellar Hoffa's fat pad which presents anterior to the patellar tendon through a rent in the medial retinaculum with the posterior wall of the cyst being adherent to the para tenon of the patellar tendon, in a 58 year old male which presents anterior to the patellar tendon through a rent in the patellar retinaculum which was adherent to the para tenon of the patellar tendon and it was managed by open excision of the cyst.

Keywords: Ganglion cyst, Hoffa's fat pad, Patellar tendon

INTRODUCTION

Ganglion cyst is defined as a cystic swelling that is formed of myxoid matrix which has a jelly-like content and it is lined by a pseudo membrane.¹ Giant ganglionic cyst arising from the infra patellar fat pad (Hoffa's) are rare and only few are reported.² We report a case of giant ganglion cyst arising from the Hoffa's fat pad which presents antero-lateral to the patellar tendon through a rent in the medial patellar retinaculum and it was adherent to the para tenon of the patellar tendon.

CASE REPORT

A 58 years old male presented with complaints of swelling, vague pain and discomfort over the right knee for 6 months. Swelling was initially small in size and it gradually progressed to present size. He recalled no history of trauma to the knee. On examination patient generally looked healthy. The right knee had a cystic swelling of size 6×4 cm over the anterolateral aspect in the infra patellar

region. Skin over the swelling was normal and there is no local warmth or tenderness. Knee range of movements are normal. Lachmann, Apley and McMurray test were negative.

X ray showed grade II MJOA with multiple osteophytes (Figure 1).



Figure 1: X-ray AP and lateral view.

MRI showed cystic lesion of size 5.9×3.7×2.8 cm just anterior to the patellar tendon which shows continuity with similar cystic lesion of size 2.4×1.4×3.6 cm in the Hoffa's fat pad (Figure 2).

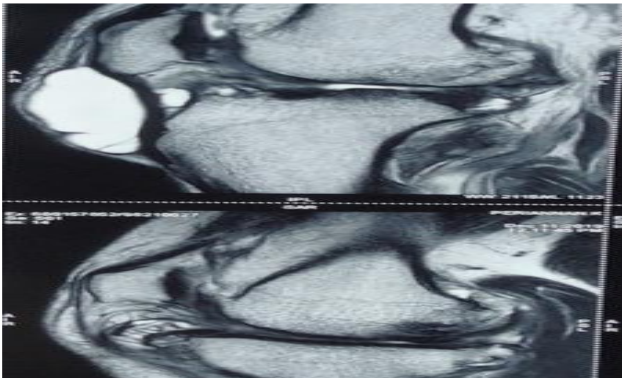


Figure 2: Saggital FS MRI images.

At surgery, under spinal anesthesia and tourniquet control, the cyst was approached through a midline incision. A multi-lobulated, dumb-bell shaped mass was present anterior to the patellar tendon which had an intra articular extension through a rent in the medial patellar retinaculum. The mass was adherent to the paratenon of patellar tendon (Figure 3). The whole mass was dissected completely and excised. Cyst attachment to the capsule and the intra-articular extension was removed by making a small arthrotomy and wound closed in layers after securing hemostasis. Post operatively compression bandage was applied and knee mobilization was started after two weeks for effective dead space management. Post-operative period was uneventful and suture removal done on 12th post-operative day.

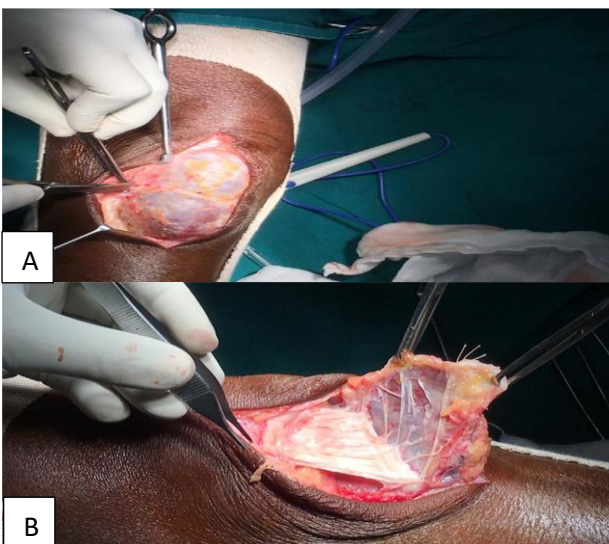


Figure 3: (A) Intra-operative picture and (B) Adherence of cyst to the paratenon.

Macroscopically the excised specimen is a cystic mass with a pseudo membrane and attached fatty tissue with a jelly like material as its content (Figure 4).

Microscopically the cyst wall is made up of fibro collagenous stroma with mucoid degeneration. No epithelial lining is seen. No evidence of cellular pleomorphism, granuloma or malignancy. The findings were consistent with ganglion cyst (Figure 4).

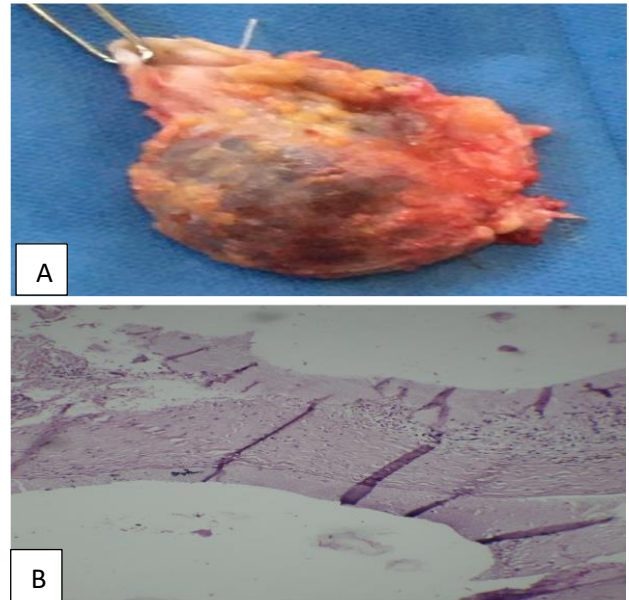


Figure 4: (A) Macroscopic picture of specimen and (B) Microscopic picture.

DISCUSSION

Ganglion cyst of the knee can arise from the anterior cruciate ligament, posterior cruciate ligament, inter cruciate area and the infrapatellar fat pad.³ The pathogenesis of ganglion cysts is still not known, but many theories have been suggested, including a synovial herniation in ligament fibers, ectopic inclusion of synovial tissue, post traumatic mucinous degeneration, and the proliferation of totipotent mesenchymal cells.^{2,4} A variety of sizes of ganglion cyst ranging from 1.8 to 5 cm are reported.¹ Majority of ganglion cysts are asymptomatic and if it is symptomatic, it usually relates to the size and the location of the cyst within the knee joint. MR imaging is an effective, noninvasive method for evaluating cystic lesions of the knee joint.⁴ Unlike meniscal cysts, ganglion cysts are not associated with meniscal tears, but may have connections to the joint capsule, which can be detected with MRI.¹ Fat-suppressed contrast-enhanced MR imaging is useful in detecting intra-articular ganglion cyst, because a thin, rim-enhancing feature of the cyst allows it to be distinguished from other swellings in the Hoffa's fat pad region. The differential diagnosis of swelling in the infrapatellar fat pad region includes lipoma, synovial cyst, meniscal cyst and ganglion.^{5,6}

The ganglion cyst in our case, has originated from the infrapatellar fat pad cleft (recess). Hoffa's fat pad is a large fatty structure located between the patellar ligament and the knee joint capsule. This structure has a horizontal cleft (recess) in its posterior aspect which is roofed by ligamentum mucosum and it lies anterior to the ACL tibial insertion. Shape of the cleft can be linear, pipe-shaped or globular and it is lined with synovium.⁷

Various treatment options have been employed for treatment of intra-articular ganglion cysts of the knee. Spontaneous reduction of the size of a ganglion cyst of the knee was reported by Huang et al.⁸ The technique of percutaneous aspiration under ultrasound guidance was described by DeFriend et al. They showed excellent results using this technique, which has both diagnostic and therapeutic value.⁹

Yilmaz et al suggested, arthroscopic/open excision with limited arthrotomy of the ganglion cyst for symptomatic cases.¹⁰ We believe arthroscopic excision should be undertaken in small lesions, and open surgical excision should be reserved for those cases with large ganglion cysts. The possibility of incomplete removal of the cyst wall make arthroscopic surgery less desirable in patients with large size cysts.

In this case we have used a midline approach to remove the cyst keeping in mind the pre-existing arthritic changes, that in future patient may need a total knee replacement. Since the cyst was adherent to the para tenon of the patellar tendon dissection has to be meticulous to avoid iatrogenic injury to it. Since the cyst was relatively large, removal of it leads to development of potential dead space post operatively which was managed by compression bandage and prolonged immobilization.

CONCLUSION

In conclusion, we report this case of giant ganglion cyst of the knee, arising from the Hoffa's fat pad with intraarticular extension (Dum-bell shaped), presenting anterior to the patellar tendon with adherence to the para tenon of the patellar tendon, which was managed by open excision of the cyst.

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Ethical approval: Not required

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