

## Case Report

# A rare case of extra-synovial and intracapsular ganglion cyst of the knee joint

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### ABSTRACT

A 23 year old female presented with knee swelling which was found to be ganglion cyst of the knee with extra synovial and intracapsular origin from the lateral meniscus which was causing pain in extreme extension. The cyst was excised and confirmation was done on histopathology. Ganglion cysts may have following differential diagnoses of ganglion cysts may include synovial chondromatosis, pigmented villonodular synovitis, meniscal or parameniscal cysts, and synovial hemangioma. Which needs good histopathological and radiological correlation. Most common sites of Intra-articular ganglion cysts are in the dorsal wrist, palm, and shoulder but rarely found in the knee joint.

**Keywords:** Ganglion cyst, Knee joint, Intracapsular ganglion cyst

### INTRODUCTION

Most common sites of Intra-articular ganglion cysts are in the dorsal wrist, palm, and shoulder but rarely found in the knee joint.<sup>1,2</sup> Ganglion cysts of the knee found to be originated from the menisci and both cruciate ligaments as well as from the popliteal tendon, alar folds, and subchondral bone.<sup>2-4</sup> Here we report a case of ganglion cyst arising from the lateral meniscus anterior border and which was confirmed intraoperatively.

### CASE REPORT

A 23 year old female presented with swelling which was painful on the lateral aspect of right knee which gradually increased from last 6 months. Pain increased while squatting and while using stairs. Patient complaints of pain on extreme extension. There was no history of trauma. On physical examination swelling was firm, slightly mobile and there was tenderness on palpation. The lesion was prominent and immobile during extension knee range of

movement was complete with Mc Murrays test painful in lateral meniscus.

MRI images shows multilobulated cystic lesion of 3.5×2.8×2.4 cm anterolateral area of knee joint below and lateral to the patella.

Procedure-Open excision of the ganglion by lateral parapatellar arthrotomy. The cyst was excised under all aseptic precautions with lateral incision. The lesion was identified coming from lateral meniscus and displacing the fat pad medially and ten laterally between capsule and the synovium. Blunt dissection was performed preserving the synovium and cyst was excised en-bloc. Intra-operative examination of knee showed stability in all planes. No extrusion of meniscus was seen. Sample sent for histopathological evaluation showed cyst lined by fibro-collagenous along with edematous stroma.

No recurrence was detected for 6 months after successful excision.



Figure 1: MRI of-T1 weighted image showing cystic lesion in the coronal plane on the lateral side.



Figure 2: MRI of-T2 weighted image showing cystic lesion in the coronal plane on the lateral side.



Figure 3: MRI of-T2 Weighted image showing cystic lesion in the sagittal plane on the anterior side arising from the lateral meniscus.



Figure 4: MRI of T2 weighted in axial view showing lytic lesion anterolaterally, lesion appears to be cystic and multi-lobulated. Arrow on lateral meniscus pointing towards the anterolateral ganglion cyst. Lesion arising from the wall of lateral meniscus intra-synovial and then lesion moving towards lateral side in the extra-capsular zone.



Figure 5: Lateral parapatellar exposure of the joint over the cyst.

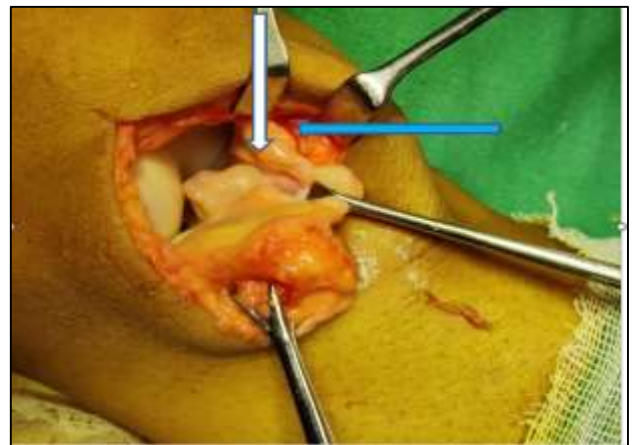


Figure 6: Lateral knee arthroscopy. The white arrow showing the ganglion cyst extending up to the lateral meniscus. Blue arrow denotes the lateral meniscus.



**Figure 7: Ganglion cyst after excision.**

## DISCUSSION

Caan in 1924 was the first to describe intra-articular knee ganglion.<sup>5</sup> In 1991 García et al was the first to describe MRI findings of cystic masses of the knee preoperatively.<sup>6</sup> But in 1987 Lee et al had used computed tomography (CT) to evaluate cystic masses of the knee, the majority of the cysts observed were popliteal cysts; intra-articular ganglion cysts of the knee were rare.<sup>2</sup> As an incidental finding intraarticular ganglion cysts of knee found using MRI, had a reported prevalence between 0.9 to 1.3%.<sup>3,6</sup> Intra-articular ganglion cysts of the knee are majorly detected as incidental findings using MRI, with a reported prevalence between 0.9 and 1.3%.<sup>3,7</sup>

Franceschi et al reported a ganglion in the anterolateral aspect of the knee and according to them it was an anomalous location of a cystic lesion arising directly from the anterolateral articular capsule, displacing the infrapatellar fat pad and lying over the lateral meniscus.<sup>8</sup> Similarly in our case the ganglion on MRI was found to be extending from lateral meniscus (intracapsular) to anterior extra-synovial region which was confirmed intraoperative.

Georgis et al described similar presentation of extra-synovial and intracapsular extension of ganglion in study of the 3 cases.<sup>9</sup> According to the author it has been suggested that a ganglion could arise from the mucinous degeneration of connective tissue with the liberation of hyaluronic acid as the result of trauma or from repetitive microtrauma or from a congenital anomaly. Although some patients can associate with some specific injury, many others have no recollection of any causative incident. Clinical diagnosis remains difficult because of the lack of specific clinical symptoms and signs. Other presumptive diagnoses included loose body, chondral flaps, osteoarthritis, a cyst of the lateral meniscus, or a discoid lateral meniscus. Location and size probably contribute significantly to symptoms. Symptomatic ganglia usually present with history and signs mimicking

internal derangement of the knee, usually a meniscal injury.<sup>9</sup>

The investigation of choice for any cystic lesion in the knee is MRI.<sup>10</sup> MRI not only provided the correct diagnosis but, in revealing the location of the extension, also provided the correct surgical approach for excision. According to Recht et al.<sup>11</sup> Ganglion cysts may have following differential diagnoses of ganglion cysts may include synovial chondromatosis, pigmented villonodular synovitis, meniscal or parameniscal cysts, and synovial hemangioma.<sup>4</sup>

Before the use of arthroscopy, intra-articular ganglia were excised by means of an arthrotomy. Successful treatment with no recurrence has also been reported after arthroscopic excision/ debridement and arthroscopically guided needle aspiration.<sup>8,12,13</sup> Simple evacuation of the cyst, computed tomography-guided aspiration, and ultrasound-guided aspiration have also been described.<sup>9</sup> However, recurring formation of ganglia after arthroscopic and computed tomography-guided aspiration has been reported.<sup>14</sup>

In this case reported here, open arthrotomy was undertaken because we believed that for the size of the lesion arthroscopic excision could not offer an en bloc excision of the cyst and thus there was the chance of leaving some part of the lining wall with the potential risk of recurrence.

## CONCLUSION

Ganglion cyst originating from the knee joint is a rare entity and needs excision in symptomatic patients. Excision can be done using arthroscopy or if needed open approach for bigger cysts.

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