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RUPTURED BAKER'S CYST WITH DISTAL EXTENSION

Orthopaedics

Dr. Tejashkumar Naik* Senior Resident, Department Of Orthopaedics, G.m.e.r.s. Gotri, Vadodara, Ind *Corresponding Author

Dr Subham Verma Senior Resident, Department Of Orthopaedics , G.m.e.r.s. Gotri , Vadodara, Ind.

Dr. Bharat Soni Senior Resident, Department Of Orthopaedics, G.m.e.r.s. Gotri, Vadodara, Ind.

Dr. Mansee Gajjar Consultant Radiologist, Radiodiagnosis, Infocus Diagnostics, Ahmedabad, Ind.

Dr. Ishit Patel 3rd Year Resident, Dept Of Orthopaedics , G.c.s. Medical College Hospital And Research Centre, Ahmedabad, Ind.

ABSTRACT

Baker's cyst is a sac filled with fluid that forms in the popliteal fossa in the posterior aspect of the knee. Baker's cyst is commonly seen in conditions like degenerative conditions of the knee. Sometimes, this cyst can rupture and show intra-muscular extension proximally or distally. Such conditions can lead to complications like compartment syndrome, dissection, rupture, pseudo thrombophlebitis, leg ischemia & nerve entrapment. Here we describe one such case of ruptured baker's cyst with distal inferomedial extension.

KEYWORDS

Popliteal Cyst, Baker's Cyst, Knee

INTRODCUTION:

"Baker's cyst" also known as "Popliteal cyst" is sac filled with fluid that forms in the popliteal fossa which is situated in the posterior aspect of the knee. Typically it is situated between the semimembranosus and medial head of the gastrocnemius.

Baker's cyst is commonly seen in condition like degenerative condition of the knee & also seen in association with secondary to degenerative meniscal tear. In such condition the meniscus serves as a one-way valve and the extruded synovial fluid localizes and consolidates to form a viscous, gel-like material. Other inflammatory condition and artithritis has also shown high association with Baker's Cyst.

Sometimes this cyst can get rupture with shows intra-muscular extension proximally or distally. Such condition can lead to complication like compartment syndrome.

Case Report :

This is a case report of 65 year old male presented with the complaint of pain the right knee since 2 weeks with swelling in the right popliteal fossa since 2 years extending distally in the calf region since. Patient is also having complain of restriction of movements. Patient was not able to do sitting cross leg and squatting. On physical examination, Swelling was 9*5 cm in size tender, soft, cystic, non pulsatile in nature. Patient had taken conservative treatment in the form of local injection did not get relieved. Knee aspiration shows clear synovial fluid. Culture study of synovial fluid shows no organism. USG local part has confirmed it as Popliteal cyst. At the time of examination there was feeble dorsalis pedis artery & tibialis posterior artery plusation. For which USG Doppler has been which is showing normal arterial flow.

Image 1. Clinical Picture

For Cyst excision patient taken in prone position. Posterior approach of the knee is chosen for cyst excison. Lazy "S" shaped incision taken from laterally over biceps femoris muscle and curved it obliquely across popliteal fossa then turned downwards over the medial head of gastrocnemius muscle and inferiorly into calf muscle.

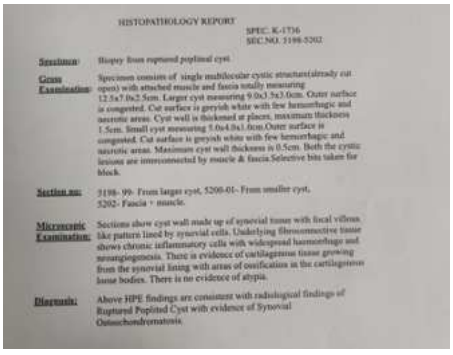
Image 2. Incision Marking

Cyst identified at the popliteal fossa level. As there was distal extension of the cyst distal dissection carried out in order to find out stalk. Distally stalk was identified and cyst excision done. Excised specimen sent for histopathological examination. Post operatively pt was given tight compressive bandage for 15 days. And gradual knee mobilisation exercises started. By the end of 3 months post operatively patient regain his full range of motion at knee joint. Patient was even able to sit cross leg and do squatting as well.

Image 3. Cyst at the popliteal fossa level

Image 4. Identification of whole cyst.

Image 5. Removal of whole Cyst with its stalk.



HISTOPATHOLOGY REPORT

SPEC. K-1736
SEC.NO. 5198-5202

Specimen: Biopsy from ruptured popliteal cyst.

Gross Examination: Specimen consists of single multilocular cystic structure(already cut open) with attached muscle and fascia totally measuring 12.5x7.0x2.5cm. Larger cyst measuring 9.0x3.5x3.0cm. Outer surface is congested. Cut surface is greyish white with few hemorrhagic and necrotic areas. Cyst wall is thickened at places, maximum thickness 1.5cm. Small cyst measuring 5.0x4.0x1.0cm.Outer surface is congested. Cut surface is greyish white with few hemorrhagic and necrotic areas. Maximum cyst wall thickness is 0.5cm. Both the cystic lesions are interconnected by muscle & fascia.Selective bits taken for block.

Section no: 5198- 99- From larger cyst, 5200-01- From smaller cyst, 5202- Fascia + muscle.

Microscopic Examination: Sections show cyst wall made up of synovial tissue with focal villous like pattern lined by synovial cells. Underlying fibrocollagenous tissue shows chronic inflammatory cells with widespread haemorrhage and neoangiogenesis. There is evidence of cartilaginous tissue growing from the synovial lining with areas of ossification in the cartilaginous tissue bodies. There is no evidence of atypia.

Diagnosis: Above HPE findings are consistent with radiological findings of Ruptured Popliteal Cyst with evidence of Synovial Osteochondromatosis.

Image 6. 3 Histopathological report

DISCUSSION

The Baker's term has been coined after the Baker in 1877[1]. It is a synovial cyst which present as swelling in the popliteal fossa due to enlargement of the gastrocnemius semimembranosus bursa, which lies on the medial side of the fossa. This cyst communicate with the adjacent knee joint space.

The cyst may get rupture and lead to severe pain at the calf, with warmth, erythema, and tenderness. Complications of popliteal cysts are dissection, rupture, pseudothrombophlebitis, leg ischemia, nerve entrapment, and compartment syndrome.

One of its well known complication is compression syndrome secondary to entrapment of the neurovascular bundle in and around the popliteal fossa[2].Compartment syndrome is a medical emergency, it is another complication of popliteal cyst rupture. Popliteal cyst can cause both anterior[3] and posterior[4] compartment syndrome. It requires immediate assessment of compartment pressure and if raised, surgical decompression to prevent permanent deformity[4].

Baker's cyst typically results from the leak of joint fluid through a weakened posteromedial joint capsule into the gastrocnemius semimembranosus bursa, between the medial head of gastrocnemius and the semimembranosus tendons[5]. Popliteal cyst might also dissect away from the popliteal fossa; this is usually in an inferomedial direction, but it can dissect anywhere, for example, anterior[3], intramuscular[6], lateral[7], and proximal[8,9]. The baker cyst in the case we are presenting is different from other baker cyst cases with inferomedial dissection. Although, Baker cyst can occur in the setting of inflammatory condition, like rheumatoid arthritis[9]. Although Baker's cyst rupture is a well-known complication of Baker's cyst, but rupturing of baker's cyst with its inferomedial extension is to the author's knowledge, is the only or one of the few cases rarely reported in the literature.

CONCLUSION

Ruptured baker's cyst can be misdiagnosed as DVT or Acute Thrombophlebitis. Rarely ruptured baker's cyst can present along with compartment syndrome which is alarming condition. Timely taken intervention can lead to excellent prognosis.

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