Fine Needle Aspiration Cytology of Ganglion Cyst of the Knee

Ashi Verma*, Aarthi KB, Prem K Garg, Swati Singh, Mayurika S Tyagi, Abhishek Pathre Rajiv K Gupta

Santosh Medical College, Santosh Deemed to be University, Ghaziabad, UP, India.

*Corresponding Author: drashiverma@gmail.com

Abstract

Ganglion cysts are benign soft tissue formations arising from the joint capsule or tendon sheath containing mucinous fluid. Most common locations are on the dorsum of the wrist, palm, and the dorsolateral aspect of the foot. Ganglion cysts within the knee joint are unusual findings and may produce clinical manifestations which mimic internal derangement of the knee. We present here a case of 85-year-old female came with complaints of swelling near the right knee. On examination the swelling was seen in medial aspect of right knee about 7x8cm. Fine Needle Aspiration was done and 2ml of gelatinous material obtained. Cytomorphological features are suggestive of Ganglionic cyst of Right Knee, which was then correlated and confirmed by MRI. Ganglion cyst of the knee usually present in locations atypical for popliteal cysts. It is important to derive the cystic nature of the lesion and its association with intra-articular diseases, for which FNAC plays an important role.

Keywords

Ganglion cyst, knee joint, FNAC, cystic lesion

Imprint


Introduction:

Ganglion cysts are the most common synovial cyst, fluid-filled sac or swelling. Most often, they develop in the wrist, particularly in the dorsal part of the wrist and originate from the scapholunate interosseous ligament. Ganglion cysts are often characterized by swelling accompanied with pain. They may also be asymptomatic. Women are three times more prone to develop ganglion cyst than men with a ratio of 3:1. It can occur at any age, but mostly between 20 – 50 years. Risk factors includes repetitive microinjuries due to overuse of the joint, previous traumas. Magnetic resonance imaging (MRI) and ultrasonography (USG) imaging techniques are used for diagnosis. 

Aspiration is a simple and useful option for acute management. Aspiration appears to be significantly more successful in ganglia of the flexor tendon sheath of the hand with success up to 60% or 70% of the time. Surgical excision remains the gold standard for the treatment of ganglion cysts.

Case History:

A 85 year old female came with complaints of pain and swelling near the right knee. There was no history of trauma or any other exacerbating factor. She had been taking analgesics for last few months due to intermittent pain but there was no improvement.

Local examination was done, the swelling was seen in medial aspect of right knee, measuring about 7x8cm, soft to firm in consistency, slightly mobile. Tenderness (+), Warmth (+).
FNAC was advised and consent obtained for the same. On aspiration, 2ml of gelatinous material was aspirated, smeared, stained with MGG and observed under microscope.

Giemsa-stained smears showed several single lying cells resembling histiocytes with some distorted red blood cells in a mucoid background. No atypical cells seen. (Fig 3 & 4) Cytomorphological features are suggestive of Ganglionic cyst of Right Knee.

Further, FNAC features were correlated with MRI findings.

Discussion:

The ganglion cyst is the most common soft tissue mass found in the hand and wrist. They are cystic structure containing mucoid material. The most common cause of ganglion cyst is trauma (38% – 67%). The most common site is Dorsal aspect of the wrist, from the scapholunate ligament or scapholunate articulation around 70% followed by Volar aspect of the wrist, from the radiocarpal joint or scaphotrapezial joint around 20% followed by Distal interphalangeal joint, hip, knee, ankle, foot, others around 10%. Their aetiology is unclear. Patient can present with complain of firm, rubbery, superficial mass which may form suddenly or gradually.

Although most of the ganglion cyst presents with no other symptoms except the appearance of a mass, if a cyst pressurizes on the nerves which passes across the joint, it can cause pain, tingling, and muscle weakness. Painless large ganglion cysts can be distressful due to their appearance alone.

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Location of the cyst plays a major role on the limitation of joint movement with cysts. Limitation is noted in cysts anterior to the cruciate ligament whereas flexion is mostly affected in cysts posterior to cruciate ligament. The clinical presentation is usually adequate for diagnosis, but ancillary tests are used for confirmation.

Ganglion cysts can lead to pressure-related pain as well as cosmetic concerns. Painless, non-growing, small ganglion cysts can be monitored with no intervention because they may regress spontaneously. Being a benign condition prognosis for most of the patient is excellent.

Treatment options include observation, aspiration, and surgical excision. Aspiration is most often combined with some form of injection, electrocautery or multiple punctures. Volar ganglion cysts are harder to treat and more likely to recur than dorsal ganglion cysts. Recurrence is rare after arthroscopic surgical treatment for ganglion cyst of the knee when compared to other sites. Its recurrence rate is around 10 – 15% after surgery.

The wide variety of treatments which have been developed are as a result of its frequent presentation to physicians and due to the lack of a satisfactory mode of treatment. Aspiration is a very useful and a simple option for acute management but appears to have a long-term impact on resolution. Currently due to emerging adjunctive measures, there is no benefit over aspiration alone. Surgery offers improved resolution of ganglia but is often an invasive method.

Cystic lesions are often revealed by MRI. In our case, the MRI finding showed a well-defined thick-walled fluid signal intensity multi-loculated cystic lesion seen in medial aspect of the knee joint. They had
suggested a differential diagnosis of infected medial collateral ganglion cyst, chronic giant para meniscal cyst with secondary infection, which was then confirmed by FNAC.

**Conclusion:**

Ganglion cysts are common, benign, soft tissue swellings found around the joints. Their presence in the knee is uncommon, and very few case reports have been noted for this condition at this location. Due to an uncommon presentation in the knee, the ganglion cysts are often difficult to diagnose. Hence, an awareness about the rare presentation of a ganglion cyst in the knee is necessary, to arrive at an early diagnosis and treatment.

**References:**