

Synovial Cyst of the Pes Anserinus in a Patient with Rheumatoid Arthritis Presenting as Intermittent Claudication

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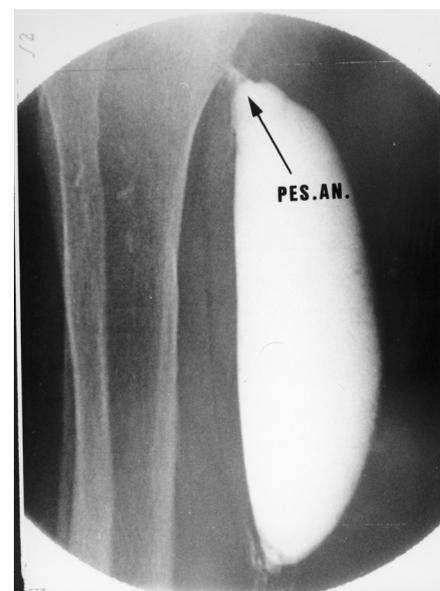
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Synovial cysts are a well-known phenomenon in rheumatoid arthritis, and have various locations and symptoms [1-5]. We describe here a unique case of synovial cyst originating from the pes anserinus and presenting clinically as intermittent claudication.

Case Description

A 56-year-old woman with rheumatoid arthritis for the previous 10 years was affected mainly in her hands and wrist. Treatment with non-steroidal anti-inflammatory medications and steroids had good functional results. A few months before admission she started suffering from intermittent claudication in her right leg, which became so severe that she could only walk 30-50 meters without stopping. Physical examination of the lower limbs, especially the knee joints, were reported as normal by her rheumatologist and no vascular or neurological deficit was noted. Routine blood tests were normal, except for positive rheumatoid factor and elevated erythrocyte sedimentation rate. X-ray radiographs were normal.

A few months later, repeated physical examination during and immediately after walking revealed swelling and soft tissue tenderness in the calf. X-ray revealed soft tissue swelling. Computed tomography and magnetic resonance imaging showed a large cyst filled with semi-liquid material in the posterior compartment of the calf. No origin of the cyst was noticed.



Anterior-posterior and lateral fluoroscopic view of the calf and knee after injection of contrast material demonstrating a huge cyst in the posterior compartment originating from the pes anserinus (arrow), with no connection between the cyst and the knee.

The patient was taken to the operating room where, under fluoroscopy, the cyst and knee were injected separately with contrast material. No connection was seen between the knee and the cyst, which originated from the pes anserinus [Figure 1].

During surgery, by way of a postero-medial approach, the cyst was located in the posterior compartment between the soleus and gastrocnemius muscles. The cyst was easily separated from the surrounding soft tissues and resected completely. Surgery revealed that the cyst originated from the pes anserinus, which was then

tightly ligated. The postoperative course was uneventful with no recurrence, and the patient resumed her normal daily activities. Histopathological examination confirmed the diagnosis of synovial cyst.

Comment

The pes anserinus is the joint insertion site of the sartorius, gracilis and the semitendinosus muscles; it is extra-articular and has a separate bursa. Synovial cysts are well known in rheumatoid arthritis. They may produce a wide range of local symptoms and complaints, and may present initially as an unrelated clinical situa-

tion. Several typical locations for synovial cysts in patients with rheumatoid arthritis were described in the past, including popliteal cyst (Baker or Baker-like) [1] of the calf, antefemoral with attachment to the suprapatellar bursa, the biceps muscle that usually resolves spontaneously, or with non-steroidal anti-inflammatory drugs, acromioclavicular cyst after rotator cuff tear, pubic bone with no connection to the hip [2], supraclavicular cyst presenting as a soft tissue mass, elbow, hip joint with the differential diagnosis of painless soft tissue mass of the groin [3], and also a lumbar intraspinal synovial cyst originating from the facet joint which may cause radicular pain [4]. Theoretically, it is possible that the association between rheumatoid arthritis and the appearance of the pes anserinus cyst is coincidental, but as mentioned previously, synovial cysts occur frequently in rheumatoid arthritis and therefore it is logical to assume that there is an association between the two in our patient.

Differential diagnosis between synovial cysts and soft tissue tumors may be confusing and it is often extremely difficult to make a correct

diagnosis without imaging modalities, such as ultrasound, MRI, or even during surgery. Synovial cysts of the calf in rheumatoid arthritis often originate from the popliteal area and are connected to the knee. If the cysts rupture they can simulate deep vein thrombosis, abscess, or pressure on the neurovascular structures, and may cause irritation and even destroy tendons and other soft tissues. No report was found in the literature on synovial cysts originating from the pes anserinus, and there is no evidence of intermittent claudication caused by synovial cysts.

The delay of 3 months prior to the appearance and diagnosis of the swelling on physical examination of our patient is probably due to the fact that this was the first time that she was checked immediately after effort (walking).

Some mechanisms for the formation of the cyst have been suggested, among them accumulation of inflammatory fluid in the joint space, and because of the rising pressure the weakest area of the capsule is broken and forms a connection with the adjacent tissues. Occasionally unidirectional valves with "infundibulum"

are formed that allow only one-way movement of the fluid. Another theory is that of independent extra- and intra-articular production of synovial fluid that may evolve to a synovial cyst [5]. The growing mechanism of the cyst in our patient is probably similar to that in other cysts, such as those connected to the joints (e.g., knee), or elsewhere such as in tendons.

References

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