

A Runner with Right Lateral Knee Pain

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SECTION 2 – ANSWER

Case

A 45-year-old male in good health participating in marathons and triathlons presented with dull discomfort over his right lateral knee in the past 4 months, without any traumatic event reported. The pain was mechanical, without any neurological symptoms. Musculoskeletal and neurological examinations were normal, except for pain over the right proximal tibiofibular joint (PTFJ).

Both ultrasound (US) [Figures 1-5] and magnetic resonance imaging (MRI) [Figures 6-8] of the right knee were performed.

Interpretation

The imaging results matched the clinical picture, demonstrating a lobulated ganglion cyst of the PTFJ. There was no focal entrapment of the right common peroneal nerve by the cyst.

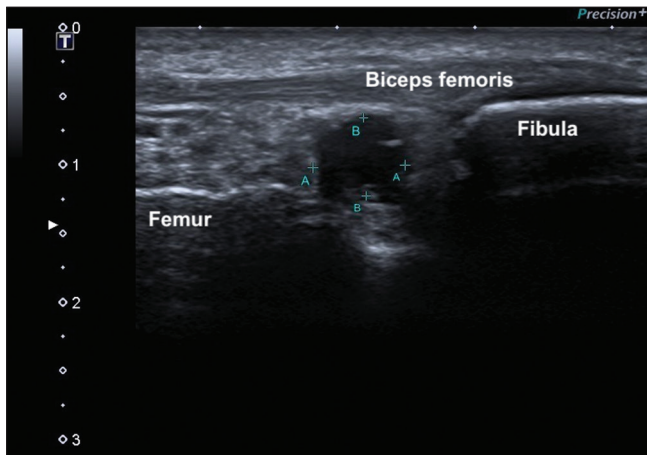


Figure 1: Right biceps femoris in long axis, with a multilobulated cystic lesion deep to the biceps femoris, measuring 6.7 mm x 5.7 mm with anechoic content

Even though on US, the cystic lesion was in proximity with the PTFJ, it was only on MRI that a nonequivocal connection with the joint could be demonstrated, thus confirming the suspected diagnosis of PTFJ ganglion cyst. Other findings that were considered nonclinically significant on MRI were intrasubstance injury of the posterior cruciate ligament, medial meniscus tear, and patellar chondromalacia.

Given the patient was still symptomatic after a trial of oral nonsteroidal anti-inflammatory medication, US-guided cyst aspiration followed by injection (20 mg triamcinolone acetate and 2 ml 1% xylocaine) was performed as a less invasive option compared to surgical excision [Video 1]. A small amount (<2 ml) of serosanguinous mucinous gel-like fluid was aspirated [Figure 9]. The analysis of the fluid showed regular synovial fluid profile without detectable crystals.

After the aspiration and injection, his physiatrist suggested casual activity and physiotherapy. His symptoms improved gradually, with no resting pain and no limitation during

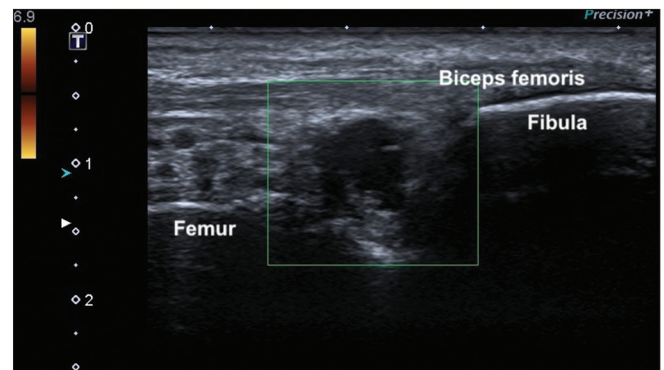


Figure 2: Right biceps femoris in long axis, with power Doppler activated over a cystic lesion deep to the biceps femoris

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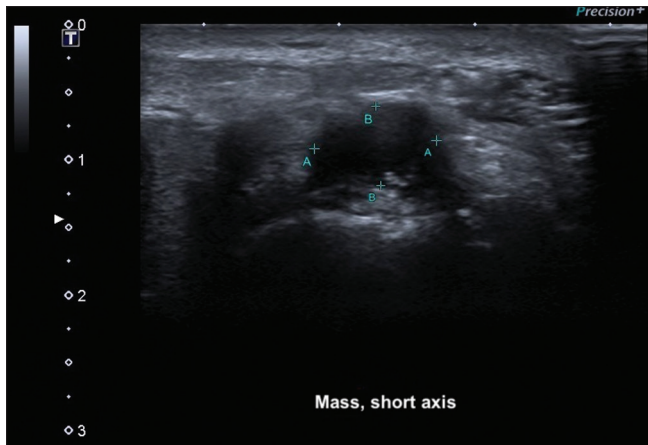


Figure 3: Transverse view of the cystic lesion, measuring 9.0 mm x 5.9 mm in this axis

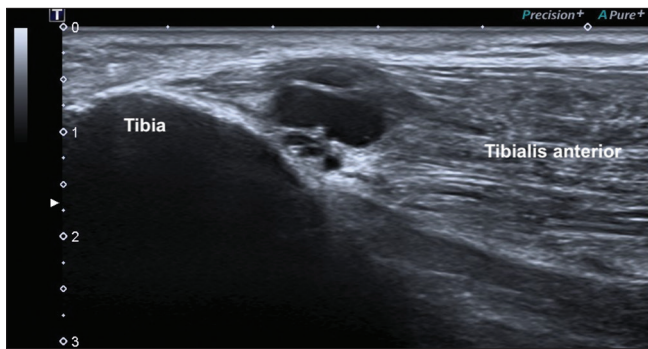


Figure 5: Longitudinal view of the multilobulated cystic lesion overlying the proximal anterior tibia



Figure 7: Coronal cut of the right knee on magnetic resonance imaging

walking. He even participated and completed the half marathon 2 weeks after the intervention. He was still doing well and symptom free at the 1-month follow-up.

DISCUSSION

The first report of a PTFJ ganglion cyst in the literature dates back to 1891.^[1] However, it remains an uncommon entity: a

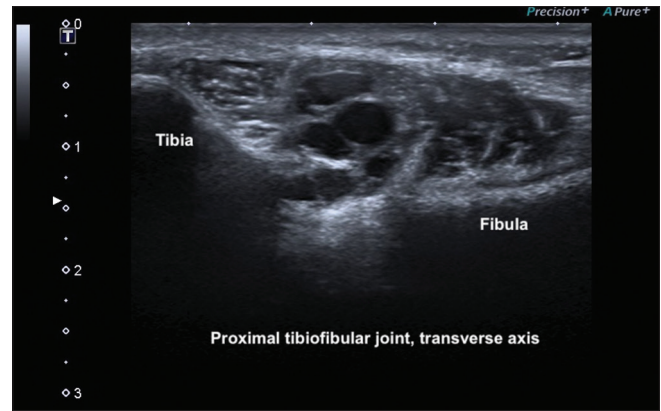


Figure 4: Lobulated cystic lesion seen emanating from the proximal tibiofibular joint in transverse axis

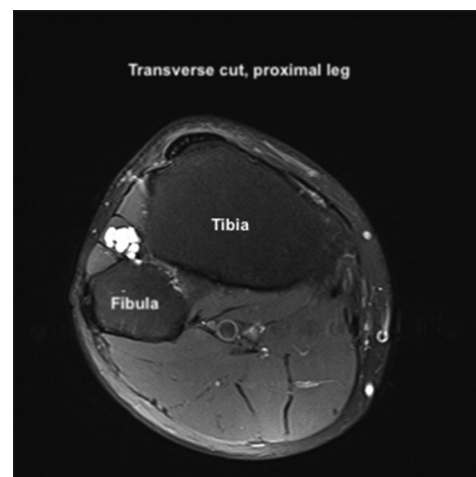


Figure 6: Transverse cut of the right proximal leg on magnetic resonance imaging



Figure 8: Sagittal cut of the right lateral knee on magnetic resonance imaging

retrospective study of 654 patients who had knee MRI for any reason found that the prevalence of ganglion cysts originating from the PTFJ was 0.76%.^[2] Most data published to date on this pathology are made of case reports and case series.^[2-13]



Figure 9: Aspirate from the right proximal tibiofibular joint ganglion cyst

The presentation can include a painless or painful lateral knee mass, with or without common peroneal nerve involvement with varying degrees of neurological involvement.^[14] A case of secondary anterior compartment syndrome has even been described,^[13] as the cyst can extend and grow intramuscularly.^[4,15]

US appearance of a ganglion cyst typically fulfills these criteria: well-demarcated avascular and anechoic mass with posterior enhancement that is most often connected to a joint or tendon sheath.^[16] It is lined by dense connective tissue and contains gel-like fluid rich in hyaluronic acid and other mucopolysaccharides.^[17]

Regarding treatment, cyst needle aspiration and steroid injection have been described with anatomic landmarks in the literature, but no clear recurrence rate has been established.^[11] A more reliable long-term option remains surgical excision of the cyst with complete resection of the ganglion stem and closure of the capsule.^[9] However, in refractory cases presenting with common peroneal nerve involvement, joint excision by proximal fibulectomy has been advocated.^[7]

CONCLUSION

One must keep in mind to include PTFJ in a comprehensive knee examination. US is a good screening tool to confirm the cystic nature of a lateral knee lesion and can also help identify nerve involvement potentially associated with PTFJ ganglion cyst.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients

understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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