Unexpected outcome (positive or negative) including adverse drug reactions

Falling up the stairs: the equivalent of 'bashing it with a bible' for an ACL ganglion cyst of the knee

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Intra-articular anterior cruciate ligament (ACL) cysts are rare, the pathogenesis remains unknown, with trauma often implicated. Often asymptomatic, incidental MRI findings, 11% produce symptoms such as pain, locking or instability. Treatment of intra-articular ganglia differs from the traditional 'bash it with a bible' mantra for ganglia elsewhere with surgical debridement generally indicated for symptomatic cases. This case report describes a 43-year-old male car mechanic who presented with a symptomatic ACL cyst diagnosed on MRI. While waiting for surgery the patient fell up his stairs at home, causing forced hyperflexion of his knee. After an initial sharp pain, within 24 h the patient experienced complete resolution of symptoms. Postfall MRI showed no evidence of the initial lesion, leading to our conclusion that for this patient, a fall up the stairs was the equivalent of 'bashing it with a bible' for an ACL ganglion cyst of the knee.

BACKGROUND

Although well reported in the literature, intra-articular ganglion cysts of the knee are a rare clinical finding,¹ often presenting incidentally. The prevalence has been reported as 1.3% on MRI scans and 0.6% at arthroscopy with ganglia arising from the anterior cruciate ligament (ACL) predominating.²⁻⁶ First described by Caan during routine autopsy in 1924,⁷ these lesions were reported very infrequently over the subsequent 70 years. The increase in popularity initially of arthroscopy and then of MRI in the 1990's though has led to an increase in the prevalence of the condition.²

The pathogenesis of ACL ganglions is still unknown, with several theories suggesting a combination of synovial tissue herniation, connective tissue degeneration after trauma and ectopia of synovial tissue among other explanations.³⁻⁹ Overall trauma is widely implicated as a key feature with many patients reporting a history of repeated minor knee trauma, usually in the absence of a single episode of serious injury.² Even the term ganglion cyst, while widely accepted,² is not a true diagnosis as ganglia and synovial cysts have differing histological findings, despite having equivalent clinical significance.⁹

The majority of ACL cysts are asymptomatic, only 11% were symptomatic in the largest published series to date;² and diagnosed incidentally during MRI scanning or arthroscopy. While ACL ganglia predominate, the lesion can also originate from posterior cruciate ligament (PCL), mensci, popliteus tendon, alar folds or from areas of chondral fracture.¹ When symptomatic the presenting complaints for this lesion are non-specific and dependent on the exact location of the lesion within the joint.¹ Patients may describe pain in the joint line, anterior knee pain, mechanical locking, restriction in extension, intermittent swelling or clicking sensations.¹⁰⁻¹³

Arthroscopic resection, debridement or excision is the preferred method of treatment,¹⁴⁻¹⁷ generally producing excellent results, providing the cyst was an isolated

finding. Once completely excised there is a very low recurrence, Krudwig *et al* reported a recurrence rate of 0% in their 85 patient series, the largest case series available.¹⁻² Other treatment modalities include ultrasound/CT guided aspiration, or open surgery in certain cases.

This case illustrates an unusual diagnosis for patients presenting chronic knee pain in the absence of trauma, and with normal x-rays; and goes on to examine the current literature on ACL ganglions. It also demonstrates that this type of lesion, often thought to require surgical management, can resolve with a conservative approach.

In addition, we use this case to reflect upon the traditional mantra for treating wrist ganglia, which was to bash

Figure 1 Preop T2 sagittal MRI demonstrating the lesion.

Figure 2 Preop T2 coronal MRI demonstrating the lesion.

Figure 3 Postfall T2 sagittal MRI.

tem with a bible, and suggest that the blunt trauma experience by this patient falling up the stairs may have had a similar effect.

CASE PRESENTATION

A 43 year old male attended knee clinic with postero-lateral knee pain, reporting radiation of the pain into his lateral calf most noticeable when on his feet for a long

Figure 4 Postfall T2 coronal MRI.

period at work and when squatting. There was no history of trauma. Before referral he had undergone an ultrasound scan to exclude a Baker's cyst and several months of physiotherapy with no improvement.

Examination demonstrated no effusion, no joint line pain, but pain located deep within the popliteal fossa. The patient had a full range of motion, with his symptoms reproduced on deep flexion, and no abnormal laxity on ligament testing.

INVESTIGATIONS

- ▶ USS – No bakers cyst, no popliteal aneurysm
- ▶ MRI demonstrated intrasubstance signal abnormality of the ACL with an adjacent cyst in the intercondylar notch suggesting an ACL ganglion cyst (figures 1 and 2). No other abnormality was identified.

DIFFERENTIAL DIAGNOSIS

ACL rupture/partial, PCL rupture/partial, ACL ganglion, degenerative meniscal lesion, meniscal cyst.

TREATMENT

After discussion of several different treatment options the patient and surgeon decided upon operative treatment planning to arthroscope the knee with a view to attempting aspiration and excision of the lesion.

Shortly before admission to hospital for arthroscopy the patient tripped and fell while walking up a flight of stairs at home, landing heavily and hyperflexing his left knee. At the time of injury the patient felt a sudden, sharp pain deep inside his left knee. This pain resolved very quickly and on resolution of this initial pain the patient found that

within 24 h his left knee symptoms had resolved entirely (figures 3 and 4).

OUTCOME AND FOLLOW-UP

At 3 month follow-up consultation he remained entirely asymptomatic and was found to have no joint effusion, a full pain free range of motion and a clinically intact ACL. Repeat MRI scan demonstrated complete resolution of the intrasubstance ACL ganglion cyst.

DISCUSSION

While still a rare condition to encounter in orthopaedic practice, intra-articular ganglion cysts of the knee are being increasingly reported and should be considered in the differential diagnosis in cases of unexplained progressive knee pain and mechanical locking in the absence of significant trauma.²

Diagnosed on MRI or at arthroscopy, and generally as an incidental finding, it is a condition which has only really come to the fore since the use of these modalities has increased in popularity;² and it seems reasonable to assume that the reported incidence of this condition will only increase with the increasing access to MRI facilities.¹⁸

While the aetiology and pathogenesis of the condition is not entirely understood,² and the term ganglion cyst is likely to represent an umbrella term for a variety of histological diagnoses the clinical significance of the lesion, once established, is identical whatever the exact underlying histology.⁹ Current wisdom for treatment of an established lesion is dependent of the clinical presentation with symptomatic lesions responding well to arthroscopic excision, and asymptomatic lesions best left untreated.^{10–13}

A traditional mantra for the treatment of a ganglion on the dorsum of the wrist was to ‘bash it with a bible’ causing the synovial out-pouching and fluid collection to be forced back into the intra-articular space. While not a definitive treatment, and very prone to recurrence this often temporised the condition providing symptomatic relief for many and definitive cure for a lucky few.

This case resulted in complete resolution of a symptomatic intrasubstance ACL ganglion cyst as a result to trauma to the knee caused by the patient ‘falling up the stairs.’ After an initial sharp pain, which no doubt was also experienced by anyone lucky enough to experience the ‘bible-bashing’ technique, the patients symptoms entirely resolved immediately following the event leading him to cancel his proposed surgery. Postfall MRI scan shows no evidence of the ACL ganglion cyst so clearly visible on the prefall images.

While not representing a viable treatment option for the population at large we would suggest based on this case that falling up the stairs acted as the equivalent to ‘bashing it with a bible’ for intra-articular ganglion cysts of the knee.

Learning points

- ▶ ACL ganglia are a rare, but important differential in the context of chronic knee pain.
- ▶ While surgical excision is often the treatment of choice for symptomatic lesions, ACL ganglia can resolve with conservative measures.
- ▶ In this case we suggest that falling up the stairs was the equivalent to bashing a ganglion on the dorsum of the wrist with a bible.

Competing interests None.

Patient consent Obtained.

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