

Kei Apple Plant Thorn Synovitis

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Summary

Plant thorn synovitis is well described but may be overlooked in the differential diagnosis of monoarticular inflammatory disease. It can present as a diagnostic difficulty because of its insidious onset after an apparently trivial injury, which may not be reported. Historically, thorn synovitis has been considered aseptic and treated with removal

of the intra-articular foreign body and the affected synovial ring. We present a child with Kei apple thorn that had penetrated into the right knee joint and lodged in the medial compartment.

Keywords: Kei Apple, Plant Thorn, Foreign Body Synovitis.

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Background

Isolated synovitis of a joint can prove to be a diagnostic dilemma and can pose a challenge even to the most experienced clinician. Early diagnosis may be difficult and it is often delayed (1). In sudden onset synovitis in a child without evidence of full blown septic arthritis, one should consider foreign body as a differential. It may result from a thorn causing foreign body reaction and subsequently relapsing arthritis (2).

Case Report

A.I was a 7 year old male who first presented to a teaching hospital in Nairobi Kenya as a referral from a private clinic complaining of pain and swelling of the right knee with inability to bear weight.

He had been seen repetitively, in private clinics for 5 months prior to being referred. He gave a history of fall in the playground at home but there was no mention of penetrating trauma into the knee. He developed a sudden onset of pain in the right knee which persisted and was associated with a limp. Two days later he was noted to have a swollen right knee with low grade fever. He was taken to the private clinic where he was treated with analgesics and some undisclosed antibiotics for an unknown duration of time. For the 5 months the swelling was on and off and the pain would become severe when he was off medication.

When seen at the hospital he was noted to be afebrile with temperature of 37.4°C, swollen right knee, no visible scars and a mild effusion in the right knee. Most of the swelling was clinically synovitic.

The range of movement was limited both extension and flexion at about 5 to 100 degrees, with pain on extremes of motion. The knee was quite tender. Investigations done included a hemogram which revealed WBC=7.17*10⁹, Hb of 11.7 g/dl with a raised ESR of 30 mm/hr. Plain radiograph and Magnetic Resonance Imaging were all reported to be normal.

A decision to perform a synovial biopsy was made. Arthroscopic intervention was unsuccessful and the surgeons resorted to a mini open procedure via a medial incision. As soon as the joint was exposed, about 8 mls of pus and purulent yellowish synovial fluid material was evacuated. We noted 2 visible pieces of broken thorn within the joint space (Figure 1). The pieces were retrieved and upon examination found to be thorns of Kei apple plant. The child was allowed home on the 3rd post operative day on antibiotics for 6 weeks. He has been reviewed 2 weeks post operatively with better range of motion and reduced swelling.

Figure 1: Kei Apple Thorn Pieces



Discussion

Thorn synovitis represents a spectrum of syndrome. The common link is inflammatory arthritis with a certain percentage of cases being infected (3,4). In our reported case, a fall in the play ground outdoor with bent knees was probable mechanisms that resulted in the thorn penetrating the knee and the puncture wound was never noticed. Although X-rays were taken in this case, the negative films could not be relied upon because thorns are not radio-opaque. An MRI done also was normal.

Black thorns or date palm thorns have caused most reported cases (5). But it can occur from thorns of several kinds of plants (6-8). Review of literature does not reveal any case of reported plant cell synovitis due to Kei apple (*Doyvalis caffra*).

The most commonly affected joint is the knee, but similar processes have been described in the hands, ankles and wrists (7,9). Antibiotic therapy provided temporary symptomatic relief as noted in this particular case, which contributed to delayed diagnosis and the subclinical features of synovitis. The presence of pus in the intra-articular space suggesting an infectious etiology (10).

Twenty seven percent of all reported cases of plant thorn arthritis have had positive culture for infective organisms. Gram positive rods most often *P. agglomerans* were the causative organisms in 73% of cases (11,12). In this particular case the culture results were negative. Delay in presentation to our facility and partial treatment with antibiotics may have contributed to a negative culture. Many reports in the literature point out that the delayed diagnosis similar to our case of up to 5 months could be attributed to the inflammation often developing long after the thorn injury has occurred (8). The differential diagnosis includes monoarticular rheumatoid arthritis and septic arthritis. The diagnostic and therapeutic approach should include arthroscopy of the affected knee within 36 to 72 hours of presentation which remains the best choice of diagnosis and affords one an opportunity to offer treatment in the same sitting (6).

Conclusion

Patients with suspected septic arthritis should be evaluated by a thorough history, clinical examination,

laboratory and radiological studies. Although arthroscopy with fluoroscopic control is the best choice for a foreign body for definitive diagnosis and treatment, but in a resource limited setting.

Recommendation

Improved physician awareness can result in more rapid diagnosis and improved clinical outcome in affected individuals.

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