

# A case of rose thorn tenosynovitis

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## Abstract

Penetrating injuries with retained foreign bodies are a frequent cause of synovitis affecting the extremities. The management of plant thorn synovitis raises a number of diagnostic and treatment challenges.

## Keywords

Tenosynovitis; penetrating injuries; plant thorn.

## Case report

A 69 year old lady was pricked by a rose thorn which became deeply embedded in the pulp of her right index finger. Within 24h she had developed a painful dactylitis with erythema and swelling of the digit (Fig. 1). Despite being treated with flucloxacillin and penicillin followed by a course of ciprofloxacin there was no improvement. A plain radiograph was normal. Magnetic resonance imaging (MRI) showed long flexor tendon tenosynovitis with no apparent foreign body. Ultrasound, however, was able to detect a foreign body and the patient underwent surgical exploration. At surgery a small piece of rose thorn was found in association with intense tenosynovitis. Decompression and tenolysis was performed. Two weeks later the patient had made a full recovery.

Foreign bodies such as rose thorns can lead to chronic tenosynovitis, bursitis and aseptic monoarticular synovitis in relation to the site of puncture<sup>[1]</sup>. The thorn fragments cannot be phagocytosed during the initial inflammatory response resulting in their encapsulation and a granulomatous response<sup>[2]</sup>.

Rose thorns are radiolucent and therefore not seen on x-ray. Radiographs may show soft tissue swelling, joint effusions<sup>[3]</sup> or rarely osteolytic lesions known as pseudotumours which are formed by encapsulation of the thorn within the bone<sup>[4]</sup>.

MRI has been used to demonstrate non-radio-opaque thorns but there have been no surgically proven cases of plant thorn synovitis where the thorn fragment has been clearly seen on MRI<sup>[5]</sup>. Because MRI failed to locate the rose thorn in our patient, it was detected on ultrasound. Although operator dependent, ultrasound is less expensive and more widely available than MRI. Ultrasound can also be used to localise the position of the thorn and place a marker on the skin prior to surgical removal. A case of thorn synovitis in which computed tomography (CT) scanning was used to detect the thorn has been reported<sup>[6]</sup>. CT is less sensitive than ultrasound and involves exposure to radiation<sup>[5]</sup>. In plant thorn synovitis, ultrasound is therefore the diagnostic tool of choice.



**Fig. 1.** Swelling of the 2nd digit of the right hand following a rose thorn injury to the pulp of the finger tip.

Treatment of plant thorn tenosynovitis requires surgical excision of the thorn fragment. As plant fragments may be too small to be seen, excision of all inflamed synovium together with the thorn entry tract is recommended<sup>[7]</sup>. This is in contrast to sea urchin stings where surgical excision is not required as the radio-opaque calcium carbonate spines are slowly resorbed over time<sup>[8]</sup>.

Penetrating plant thorn injuries have been associated with a number of bacterial and fungal infections including *Enterobacter agglomerans*, *Sporothrix schenckii* and *Actinomyces* which produces a sinus that discharges sulphur granules<sup>[9,10]</sup>. Histopathological sensitivity for diagnosis of fungal tenosynovitis is poor due to the paucity of organisms in tissue samples and the non-specific tissue response<sup>[10]</sup>. If infection is suspected in association with plant thorn synovitis or tenosynovitis, open biopsy with aerobic and anaerobic bacterial cultures and fungal cultures should be undertaken. Treatment should include use of penicillin with an antifungal agent such as itraconazole or amphotericin.

### Teaching point

We have presented a case of rose thorn tenosynovitis which illustrates the superior use of ultrasound in diagnosis and the need for surgical management in conjunction with antibiotics if infection is suspected.

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