Embolia cutis medicamentosa after polidocanol injection of neovessels in Achilles tendinosis

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Date accepted for publication 14 December 2012

Abstract

This report documents a case of embolia cutis medicamentosa after therapeutic injection of neovessels associated with Achilles tendinosis with polidocanol. This condition has not previously been reported as a complication of this procedure.

Keywords

Embolia cutis medicamentosa; Nicolau syndrome; polidocanol; Achilles tendon.

Case report

A 51-year-old woman presented with an 18-month history of Achilles tendinosis. The clinical findings were consistent with this diagnosis. Ultrasound scanning confirmed typical changes of tendinosis in body of the tendon with florid neovascularity seen on power Doppler mode. No frank disruption of the tendon structure was seen. The treatment modalities trialled up to that point had included activity modification, an eccentric exercise program, glyceryl trinitrate patches, steroid iontophoresis and prolotherapy without resolution of her problem. She was advised that injecting polidocanol (a non-ionic detergent used as a sclerosing agent) into the neovessels was an accepted method of treating the pain of recalcitrant Achilles tendinosis. The risks of such a procedure, including infection, allergic reaction and short-term increases in pain, were explained. The injection was performed under ultrasound guidance by a procedural radiologist highly experienced in this particular technique. The neovessels on the anterior surface of the body of the tendon were injected with 2ml of 1% polidocanol solution. There was no abnormal leakage of the polidocanol during the injection. The patient described severe pain at the time of injection in both the area of the injection and in the posterior calf muscles.

Over the next 7 days her pain intensified to the point that she was unable to bear weight. A well-demarcated change became apparent in the cutaneous and subcutaneous tissues (Fig. 1). After a literature search, a diagnosis of embolia cutis medicamentosa (ECM) was made and she was referred to the plastic surgical team at the regional teaching hospital. Management consisted
of skin care, analgesia and non-weight-bearing relative rest. Some local tissue breakdown occurred in 2 sites approximately 2 weeks after the injection (Fig. 2). By 6 weeks, most of the injured tissue was healed but pigmentation changes persisted (Fig. 3). She was ambulating relatively normally by this stage albeit with some persistent pain.

**Discussion**

ECM, also known as Nicolau disease, was described by 3 physicians, including Nicolau, between 1924 and 1928\[1\]. The clinical picture is of the onset of severe pain at the time of an injection, followed some days later by the appearance of a demarcated area that is not necessarily immediately related to the injection site. In more severe cases, tissue breakdown, including cutaneous ulceration and necrosis of deeper tissues including muscle, occurs. The areas of damage may take many months to heal (by secondary intention) and permanent tissue loss and altered pigmentation have been noted. Medical management designed to re-perfuse the damaged tissues has been described\[1\], surgical intervention may be required to debride necrotic tissue.

The absolute incidence of the condition is not known but it is described as rare. Most cases relate to intramuscular injections but subcutaneous injections have also been described as precipitating the condition\[1–4\]. A wide variety of medications have been noted as having been injected at the time the condition commenced including bismuth, antibiotics, vitamin K, alpha and
beta interferon, diclofenac and etanercept\textsuperscript{[5–10]}. There is also a single case of ECM after sclerotherapy of intracutaneous veins with polidocanol in the literature\textsuperscript{[1]}. The aetiology of ECM is not well understood, but the acute onset of pain at the time of injection is suggestive of vascular spasm. Some authors have suggested that intra-arterial injection is the cause\textsuperscript{[11]} but this does not seem to be the consensus view. For the past decade polidocanol injections have been used in the management of the pain associated with chronic Achilles tendinosis\textsuperscript{[12,13]}.

**Teaching points**

- Clinicians using the technique of polidocanol injection should be aware of the possibility of precipitating ECM although it is so uncommon that routine discussion of it as part of informed consent procedures is probably not justified.
- Severe acute pain at the time of injection of polidocanol should raise the possibility of ECM.
- The development of significant tissue necrosis should be considered a rare complication of polidocanol injection for tendinosis.

**Conflict of interest**

None
References


