Chronic plantar ulcer secondary to congenital indifference to pain

Congenital indifference to pain (CIP) is a rare condition characterised by painless injuries beginning in early life, with normal sensory exam findings. Young people with inexplicable, painless chronic wounds may present to the plastic surgeon for surgical management. Given the young age of onset and high likely of postoperative failure, alternative options for closure of non-healing wounds should be considered. We present the case of a 17-year-old boy with congenital indifference to pain and successful management of his longstanding plantar ulcer.

Case presentation
A 10-year-old boy, previously healthy, presented with a persistently swollen left ankle attributed to an unwitnessed soccer injury 4 months previously. An X-ray demonstrated a large exostosis of the left calcaneus and Charcot joint (Fig 1). The patient denied experiencing any pain associated with the deformity.

Four months after initial non-weight bearing casting, the patient returned with a shallow, painless ulcer on his left heel. Thorough neurological workup, including EMG, returned with no anatomical abnormality, although further history elucidated a family history of decreased pain sensation in the patient’s father and paternal grandmother. Dressing and non-weight bearing proved unsuccessful and the ulcer was operatively debrided and closed primarily. Unfortunately, the surgical closure failed and the ulcer reopened less than 1 month later.

Over the next 7 years, the patient received multiple wound debridements, advancement flap closure and intravenous antibiotics for osteomyelitis secondary to the chronic heel ulcer. He was frequently immobilised for casting, and developed significant pes planus deformity (Fig 2a). Operative closures would inevitably break down. Complete neurological evaluation during this period led to a diagnosis of congenital indifference to pain (CIP).

When the patient was 17 years old, he was referred to the adult plastic surgery service for management of his newly reopened plantar ulcer, now measuring 3×3cm. Throughout his adolescence, the patient had significant difficulty following management plans, and non-concordance contributed to treatment failure. Multiple closure options had been undertaken, including primary closure, skin grafting and local flaps, and negative pressure wound therapy.

Given that multiple attempts at operative closure had failed, alternative management options were entertained. The patient agreed to a trial with a non-invasive tension adhesive (DynaClose, Canica

Fig 1. X-ray of left calcaneus. Note the post-traumatic ossific fragments adjacent to the distal, medial talus and anterolateral aspect of the calcaneus. There is a pes planus deformity with elevation at the heel.
Fig 2. Left chronic heel ulcer, measuring 3x3cm with significant granulation tissue prior to debridement, (a), 8-weeks after debridement and application of the dynamic closure system, (b), and healed defect 12-weeks after application of tension adhesive, (c)

References