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## CASE REPORT

# Acute carpal tunnel syndrome caused by a dermal fragment

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## Introduction

Carpal tunnel syndrome in an acute setting has been reported on a number of occasions, predominantly associated with fractures.<sup>3,2</sup> However, it has rarely been reported in conjunction with foreign bodies within the carpal tunnel. We have previously reported a case of acute carpal tunnel caused by a fragment from a metacarpal bone.<sup>1</sup> Here we describe a further case of acute carpal tunnel syndrome related to an autologous foreign body, in this case the culprit being a significant dermal fragment.

## Case

A 31-year-old right hand dominant man presented with acute parasthesia in the thumb, index, middle and ring fingers of his left hand. He had earlier fallen with an outstretched hand upon a three pin UK standard mains plug. Further examination revealed a punched out lesions over the distal thenar eminence and another lesion overlying the hypothenar eminence, distal to the pisiform. There was no lesion directly overlying the carpal ligament itself.

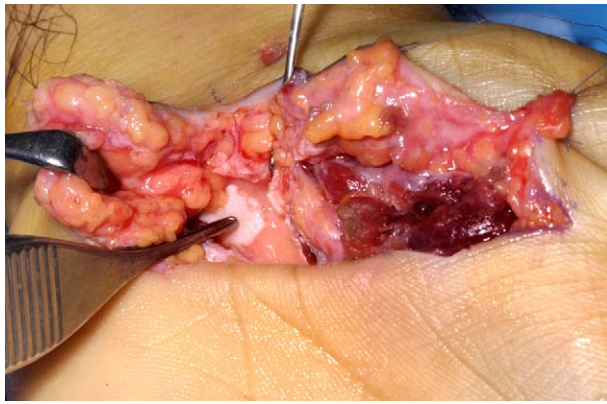
Examination revealed intact motor function of the median nerve, but parasthesia and altered sensation in the median nerve distribution. Wrist flexion was painful and limited. There were no motor or sensory symptoms in the distribution of the ulnar nerve. No fractures were present on radiographs.

Due to the presence of median nerve symptoms, it was decided to explore the injury fully. At operation, the thenar eminence was explored and no injury was found. The injury overlying the hypothenar eminence was explored but did not extend into Guyon's canal. The carpal tunnel was formally explored in view of the median nerve symptoms. The transverse carpal ligament was divided in the midline, and no haematoma was found within the carpal tunnel. At the proximal limit of the carpal ligament a small rupture was noted, to the ulnar side of the midline. Upon full release of the ligament, a 1 cm diameter dermal fragment was noted lying directly on the median nerve (Fig. 1). The dermal fragment was more than 3 cm from the site of entry of the plug pin. There was no bruising of the nerve and the perineurium was intact. The dermal fragment exactly matched the punched out defect overlying the hypothenar eminence (Fig. 2).

Post-operatively the patient had immediate relief of his symptoms, and was discharged 24 h later.

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**Figure 1** The dermal fragment as discovered in situ, shown lying on median nerve (pointed to with Adson's forceps).



**Figure 2** The dermal fragment matching the punched out defect overlying the hypothenar eminence.

## Discussion

Although traumatic space occupying lesions in the carpal tunnel are rare, any suggestion of median nerve involvement where there has been breach of palmar or wrist skin, merits formal exploration of the carpal tunnel. Two previous reports of carpal tunnel syndrome attributed to exogenous foreign bodies have been delayed presentations.<sup>4,5</sup> This emphasizes the need for a high degree of suspicion at the time of injury, even at sites apparently distant



**Figure 3** Dermal fragment placed in its original defect.

from the carpal tunnel, when median nerve symptoms are present. In our case the dermal fragment was located at a site both distant and oblique from the site of entry, and was an unexpected find (Fig. 3).

Although the patient's median nerve symptoms may have been attributable to direct trauma and consequent neuropraxia, the immediate post-operative relief of symptoms suggests that the dermal foreign body was in part responsible. The dermal fragment may have had a direct irritative effect on the nerve, rather than exert any major space occupying effect.

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