Spontaneous intraneural haematoma causing acute neuropathy of the median nerve

Dear Sir,

A 71-year-old right-handed man presented with a history of a painful lump on the flexor aspect of the wrist just proximal to the wrist crease. It had occurred spontaneously a few days before referral without any precipitating event and there was no history of carpal tunnel syndrome. The past medical history included carcinoma of the prostate, for which he was receiving hormone manipulation therapy, ischaemic heart disease and non-insulin dependent diabetes mellitus. He had never been on warfarin but took a low daily dose of aspirin. Clinical examination confirmed a 1 x 1 cm, painful, non-pulsatile and partially mobile subcutaneous swelling. The radial 3½ digits were swollen and hyperaesthetic to touch. There was complete loss of thenar muscle function. Examination of the neck, shoulder and elbow was normal. All blood investigations, including coagulation screening, were normal. Plain radiographs of the left wrist did not show any abnormality. An ultrasound scan of the left wrist confirmed a well-circumscribed focal lesion, which appeared to lie within the median nerve, displacing its fibres.

To avoid any delay in treatment, no further investigations were requested and the patient underwent immediate explorative surgery. The lesion was confirmed to be an intraneural haematoma, separating and compressing individual nerve fibres (Fig 1). The surrounding tissues were normal and there was no sign of trauma or formation of an aneurysm. The nerve was decompressed by evacuating the haematoma, followed by neurolysis proximal and distal to the lesion. The immediate postoperative recovery was uneventful, with significant improvement of pain. However, within 2 weeks of surgery he developed typical features of complex regional pain syndrome. It is possible that the preoperative swelling of the digits might have been an early presentation of complex regional pain syndrome, which was then aggravated by surgery. Further rehabilitation consisted of intermittent splinting and intensive hand physiotherapy supported by multiple intravenous guanethidine blocks given by the anaesthetic pain team. During regular follow-ups hand function improved slowly but steadily. At final follow-up at 12 months he had no pain but still had impaired hand function due to stiffness in the wrist and fingers.

The spontaneous occurrence of this surgical emergency, without any obvious precipitating event, does highlight the importance of vigilance in clinical assessment and treatment. A minor injury that may not have been recognized by the patient cannot be excluded. However, that might have caused the condition, particularly in a patient taking a low dose of aspirin with a potentially abnormal ‘bleeding time’. Other causes of acute carpal tunnel syndrome that need to be considered with this presentation have been described by Wolfrum et al. (2007) and may be iatrogenic or associated with conditions including diabetes mellitus, haemodialysis, tenosynovitis, osseous deformities and soft tissue tumours. Scopel et al. (2007) described the possible pathophysiological mechanisms of intraneural haematoma as well as the functional and structural outcomes after conservative and operative treatment in an experimental study in rats. The concept of the intraneural lesion as a ‘miniature compartmental syndrome’, which can lead to hypoxia, tissue necrosis and intraneural fibrosis with permanent nerve damage makes nerve decompression a surgical emergency.

Chuang et al. (2002) stressed the diagnostic value of ultrasonography in the early recognition of epineural haematoma and suggested immediate decompression by ultrasound-guided fine needle aspiration.

Kheirelseid et al. (2008) reported complete resolution of symptoms 4 weeks after immediate surgical decompression of spontaneous subperineural haematoma of the median nerve. Despite prompt recognition and surgical treatment, the late presentation in our case contributed to the incomplete nerve recovery.

Fig 1 Intraneural haematoma compressing and displacing the nerve fibres.
References


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