An uncommon peripheral nerve injury after penetrating injury of the forearm: the importance of clinical examination

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A 22 year old woman presented to the accident and emergency department with a self inflicted stab wound to the radial side of the volar aspect of the left forearm caused by a pen knife. Her wounds were sutured on the day of injury. Over the course of next three weeks her wounds healed well but she noticed difficulty in using the hand. She therefore attended her general practitioner who suspected a possible nerve injury and referred the patient back to the A&E department. On follow up examination, she was noticed to have a loss of finger and thumb extension and weakness of thumb abduction. Active extension of the wrist (with radial deviation) was intact. There was no sensory deficit. PIN palsy was diagnosed and the patient was referred to the regional hand surgery unit where she underwent exploration of the wound. A complete transection of the PIN in the supinator canal was found and repaired with good functional outcome at one year.

DISCUSSION

Penetrating injuries to the forearm are common and they are frequently associated with peripheral nerve injuries. The type of nerve involved depends on the level of the penetrating injury in the forearm. The median and the ulnar nerve are commonly injured than the posterior interosseous nerve.

The deep branch of the radial nerve is often referred to as the PIN. The PIN has some unique anatomical features. There are very few case reports of PIN palsy resulting from laceration and penetrating injuries of the forearm. We report a case of this type resulting from a self inflicted knife injury to the radial side of the volar aspect of proximal forearm. The subtle clinical signs were missed on initial presentation and only detected at follow up. This case report illustrates the importance of thorough examination after apparently minor penetrating injury.

CASE REPORT

A 22 old woman presented to the A&E department with a self inflicted stab wound to the radial side of the volar aspect of the left forearm caused by a pen knife. A 2 cm entry wound was present on the volar aspect of the proximal forearm with an exit wound in the dorsal aspect of the forearm. Her wounds were sutured on the day of injury. Over the course of next three weeks her wounds healed well but she noticed difficulty in using the hand. She therefore attended her general practitioner who suspected a possible nerve injury and referred the patient back to the A&E department.

On follow up examination, she was noticed to have a loss of finger and thumb extension and weakness of thumb abduction (fig 1). Active extension of the wrist (with radial deviation) was intact. There was no sensory deficit. PIN palsy was diagnosed and the patient was referred to the regional hand surgery unit where she underwent exploration of the wound. A complete transection of the PIN in the supinator canal was found and repaired with good functional outcome at one year.

Figure 1 Loss of extension of thumb and all fingers at the MCP joint.
Isolated posterior gastric injury due to blunt abdominal trauma

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In civilian life most abdominal injuries are due to blunt abdominal trauma. The incidence of blunt trauma is rising because of the increase in automobile accidents. In blunt abdominal trauma incidence of injury to the solid organs is much higher than that to the hollow viscus.

CASE REPORT
A 17 years old man presented with a history of being knocked off a bicycle by a car and landing on his left side. He complained of pain in the left upper quadrant of the abdomen. He was haemodynamically stable and abdominal examination did not reveal anything remarkable except some bruises on the left hypochondrium and lower chest at admission but later he developed signs of peritonitis. And ultrasound scan taken at admission did not reveal any abnormality. At laparotomy the only injury found was a longitudinal tear on the posterior gastric wall in the upper third of stomach. The tear was sutured and the patient made an uneventful recovery.

DISCUSSION
Injuries to the stomach are very rare in blunt abdominal trauma. The stomach has very strong walls and these are not torn by blunt trauma unless it is very severe or the stomach is full, or both. Such trauma commonly involves adjacent organs like the liver, spleen, and pancreas. Apart from injuries to the anterior gastric wall, total rupture of the gastro-oesophageal junction, complete circular avulsion of the stomach from the duodenum, and rupture of both the gastric walls have been reported due to blunt abdominal trauma. All of these were associated with a solid organ injury.

In our case there was an injury only to the posterior wall of stomach. There was no other intra-abdominal injury. We, after extensive literature search, believe that this is the only case of isolated posterior gastric wall injury being reported. Because of technical problems with the computed tomography equipment an ultrasound scan was performed for this patient to exclude solid organ injury in view of the clinical signs. Mallik et al suggested that a truly normal ultrasound scan in asymptomatic patients may be highly reliable for excluding significant organ injuries and these patients may be followed up without computed tomography. However, in retrospect, a computed tomogram with oral contrast would probably have given an idea about the injury. The most probable mechanism of injury in this patient was injury on a full stomach.

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