

Saturday Morning Palsy: Closed Traumatic Peripheral Neuropathy

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ABSTRACT

Traumatic peripheral neuropathy can occur following fracture, dislocation, forceful reduction or direct compression. During the emergency medical relief mission for earthquake victims in Pakistan, between 30th Oct and 14th Nov 2005, four patients presented with wrist drop and two others with foot drop, all with no underlying fracture or dislocation. All of them were attended by medical teams two to three days for the first time due to difficult rescue work and hard terrain. They were seen in field hospital on their follow up at four to five weeks.

Key Words:

Traumatic peripheral neuropathy , wrist drop and foot drop with no concomitant fractures

INTRODUCTION

Traumatic peripheral neuropathy can occur following fracture, dislocation, forceful reduction or direct compression. Determination of the actual mechanism of the injury and the extent of the insult to the nerve is very important for effective patient management. Such information may also provide information regarding the potential for recovery. During the emergency medical relief mission for earthquake victims in Pakistan, between 30th Oct and 14th Nov 2005, four patients presented with wrist drop and two others with foot drop, all with no underlying fracture or dislocation.

WRIST DROP GROUP:

Among the four patients who presented with wrist drop, three were middle aged housewives who were caught under the rubble of their houses. One gentleman in his early twenties, a primary school teacher was rescued from his collapsed classroom. Two had healed abrasions over the posterior aspect of the arm overlying the radial groove of the humerus (Fig. 1). All four patients were unable to extend their wrists and fingers with loss of sensation over the first dorsal web space. Tinel's sign was positive over the middle

third of the arm posteriorly. In addition, all had concomitant injuries including fractures, but the humerus of the affected limb remained intact. All of them were attended by medical teams two to three days for the first time due to difficult rescue work and hard terrain. They were seen in field hospital on their follow up at four to five weeks.

FOOT DROP GROUP:

An 11-years-old school girl and a housewife presented with unilateral inability to extend the ankle joint. There were signs suggestive of soft tissue injury over the anterolateral aspect of the upper leg. Both were unable to dorsiflex the ankle of the affected limb, and there was paraesthesia over the dorsolateral aspect of the foot. Tinel's sign was positive only in the 11-year-old girl just below the proximal fibula. These two patients were given first Aid treatment after 24hrs when they were brought down to the medical came from their homes up in the devastated mountainous region. They attended to my field hospital clinic at five weeks on their follow up.

BOTH GROUPS:

Diagnoses of radial and common peroneal nerve injuries were made based on clinical examination. Although the underlying bone was intact, prolonged compression of the nerve between the bone and heavy debris under which these victims were stranded for a prolonged period produced significant injury. There was no facility for electrophysiological studies due to the emergency situation at hand. All six cases were treated non-operatively for their nerve injuries and all showed some signs of sensory improvement over the following 4 to 5 weeks. There was no obvious motor recovery.

DISCUSSION

On Saturday morning, the eighth of Oct 2005, a massive earthquake struck parts of East Asia and brought devastation and misery to thousands of people. There were many



casualties, and life threatening conditions were generally given priority for medical attention. It was therefore difficult to satisfactorily treat all injuries seen following this tragedy, so diagnosis of peripheral neuropathy without underlying fracture was in all likelihood easily missed.

This is in contrast to a more common condition called ‘Saturday Night Palsy’ where an isolated nerve is usually involved. Victims of the earthquake treated for foot drop and wrist drop due to compression from destruction of the earthquake were likely victims of a ‘Saturday Morning Palsy’ from compression due to the weight of debris on the nerve. Both the radial and common peroneal nerves share the anatomical feature of being close to the radial groove of the humerus and the neck of the fibula respectively. There is minimal intervening soft tissue to provide a cushioning effect in the event of direct and prolonged compression.

Shyu reported on 10 recruited soldiers who developed acute left wrist drop with numbness over the dorsum of the first web space after three-hours of shooting practice¹. Electrophysiological studies revealed prolonged distal latency, reduced amplitude and sluggish left radial nerve

motor conduction velocity between the axilla and elbow. Nine patients recovered completely, and sensory recovery was noted to occur before motor recovery. In 6 of the soldiers, there was some evidence of sensory recovery detected at 4 to 5 weeks post trauma.

McGrail reported a case of common peroneal nerve palsy in a Blackhawk helicopter pilot². A common practice among Blackhawk helicopter pilots is to brace their left knee, subjecting the left common peroneal nerve to injury secondary to prolonged compression.

Common peroneal neuropathy has also been reported after prolonged squatting³.

In disaster areas, patients may present with uncommon mechanisms of injury to their limbs. There may be some telltale signs of injuries and these findings should be carefully evaluated and correlated with the presenting problem. It should be noted however, that long term follow-up may be difficult in these situations. Thankfully, recovery of closed peripheral nerve injury is possible without surgical intervention.

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