

Circumflex Nerve & Artery Rupture in a Champion Jockey

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Abstract

Circumflex artery and nerve rupture without fracture or dislocation is a rare event. We report such a case in a Champion Jockey who sustained blunt trauma to the shoulder after a fall during a race and review the literature.

Key words: AxillaryNerve/Circumflex Nerve; Infraclavicular brachial plexus; Injury

Case Report

A thirty-five year old champion jockey fell from his horse during a race. Whilst falling he recalled being kicked in the left shoulder.

The jockey complained of severe pain and swelling about the shoulder. On inspection a hoof mark on the postero-lateral aspect of the shoulder, and a large haematoma in the axilla was seen. Sensation was absent in the proximal lateral arm and paresthesia was present in the rest of the upper limb. Motor testing demonstrated absence of power in the deltoid with normal motor function elsewhere. Peripheral pulses and circulation were normal.

There was no evidence of associated fracture or dislocation.

A lesion of the circumflex nerve was suspected and in view of the energy of trauma and associated haematoma an exploration of the infraclavicular brachial plexus was undertaken within 48 hours of injury.

At operation, approx. 750ml of haematoma was evacuated about the shoulder. The circumflex artery had ruptured 1mm from its origin from the axillary artery and was tied off. The circumflex nerve was ruptured and repaired using a 3 stranded cable graft from the medial cutaneous nerve of the forearm. The medial and posterior cords of the brachial plexus were contused.

Four months after operation a flicker of activity (MRC grade 1) was recorded in the posterior fibres of the deltoid.

Six months after operation the jockey had regained sufficient strength and movement in the upper limb to commence professional racing. **Need final MRC Grade of motor activity with ROM of shoulder and Muscle strength % with opposite shoulder.**

Discussion

The majority of closed injuries to the circumflex nerve occur in the context of dislocation and or fracture. Recovery often occurs spontaneously because the lesion is in continuity and the nerve injury partial¹ and a conservative course of management is appropriate for the nerve injury. Rupture of components of the infraclavicular brachial plexus without associated fracture or dislocation is a rare but recognised event following blunt trauma^{2,3}. Nerve rupture requires surgical repair the results of which are far superior when performed early^{4,5}. Late repairs of nerves in cases that have been managed conservatively are associated with more technical difficulty. The nerve ends are often retracted and embedded in scar tissue. In cases where there has been an associated vascular injury, nerve stumps can be encased in a false aneurysm compounding technical difficulty of the repair.

Vascular injury associated with rupture of the circumflex nerve is well recognised. Narakas⁵ and Birch⁶ have between them reported on over 200 cases of circumflex nerve rupture. Associated vascular injury to the axillary artery or its major branches accounted for 10-15% of cases.

Clearly early diagnosis of a nerve rupture or nerve injury with an unfavourable prognosis with conservative treatment is essential if prompt surgical intervention and optimal management is to be undertaken. Clinical features suggestive of nerve rupture are the energy of injury, open wound, associated vascular injury, and complete nerve lesion. The essential features in the case we present are of high-energy trauma, recognition of associated vascular injury as evidenced by severe swelling about the shoulder with a deep lesion of the circumflex nerve.

Without recognition of these features early surgical repair and the optimal outcome observed in this case would have been compromised. The patient would have undergone a delayed return to functional recovery and may not have returned to professional racing.

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