A Case of Holstein-Lewis Fracture with Persistent Radial Nerve Palsy

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INTRODUCTION:

Radial nerve palsy is reported in approximately 2% to 17% of cases and represents the most common nerve injury observed subsequent to humeral shaft fractures. The nature of the radial nerve palsy itself is variable and can range from a transient contusion or neuropraxia to nerve incarceration between fracture fragments, and even complete transection.

REPORT:

A 19-year-old male was involved in a high energy road traffic accident, resulting in fractures of right humeral shaft and right iliac crest with sacroiliac joint disruption. Initial evaluation revealed weakness in the right metacarpophalangeal extension with sensation loss over dorsal aspect of the hand's first web space. One week later, surgery was performed for pelvic internal fixation in an elective trauma operation theater. However, due to a fungal infection at the incision site, internal fixation of the humeral shaft was deferred, and conservative management was pursued. Over the subsequent two months, monthly monitoring of the radial nerve revealed persistent palsy with no signs of improvement. Subsequently, surgical intervention was undertaken to address the humeral shaft fracture through open reduction and internal fixation using a 4.5 mm limited contact dynamic compression plate, employing a posterior triceps splitting approach. Intraoperatively, it was discovered that the radial nerve was entrapped within the fracture site and encased by healing callus. Extrication of radial nerve was performed. Immediate postoperative assessment showed marked improvement in radial nerve function on the first day.

Figure 1: X-ray on trauma date

Figure 2: X-ray post fixation

CONCLUSION:

The management of radial nerve palsies in humeral shaft fractures is debatable between early exploration and expectant management. In this instance, there is immediate improvement in radial nerve function following extrication of the radial nerve, indicating a favorable outcome.

REFERENCES:

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