E-Poster

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Management in PMR of Comminuted Shoulder Girdle Fractures with Brachial Plexus Injury

Topic: Exercise

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BACKGROUND

Comminuted and simultaneous fractures of several bony structures of the shoulder girdle are rare injuries, often caused by high-energy trauma, the association with brachial plexus injury, considerably increases the severity of the functional prognosis of the upper limb. This study aims to discuss the means of functional assessment and the rehabilitative management of this type of fracture.

CASE DESCRIPTION

We report the case of a 54-year-old patient, victim of a road accident on a motorcycle six months ago. This trauma resulted in a comminuted fracture of the scapula and glenoid, with massive plexus paralysis, motor and sensory of the right upper limb. Computed tomography (CT) scan showed a comminuted fracture of the scapula and glenoid with multiple fragments around the sternocostoclavicular joint, magnetic resonance imaging (MRI) and electromyography (EMG) were in favor of a complex lesion of the right brachial plexus, the surgical intervention performed by a multidisciplinary team of orthopedic surgeons and neurosurgeons; consisted of exploration and repair of the brachial plexus, with reduction of fracture sites. After stabilization of the patient at 6 weeks after the intervention, rehabilitation was established:

Early phase: Passive mobilization, pain management (physiotherapy, prescription of pregabalin), electrostimulation.

Active phase: Progressive muscle strengthening of unaffected muscles, stretching, sensitive and proprioceptive rehabilitation

The evolution was marked by functional improvement of the shoulder and elbow, however, recovery of the wrist and fingers still limited. The assessment scores used are:

- Active Movement Scale (AMS)
- Brachial Plexus Outcome Measure (BPOM)

The results of the assessments (pre-post rehabilitation) are shown in the attached table

DISCUSSION

Complex fractures of the shoulder girdle associated with brachial plexus injuries are polysegmental injuries involving significant biomechanical instability of the shoulder, often correlated with a neuromuscular deficit compromising the functional recovery of the upper limb. These injuries require rigorous multidisciplinary management and functional assessment. The use of standardized scores, such as the BPOM and AMS, allows an objective assessment of functional deficits and guides therapeutic strategies. In addition, regular monitoring of neurological recovery by electroneuromyographic exploration also remains essential, given the risk of motor and sensory sequelae, which may involve specific surgical management such as nerve grafting or nerve transfer

CONCLUSION

Complex and comminuted fractures of the shoulder girdle associated with plexus palsy require multidisciplinary management involving a neurosurgeon, an orthopedist and a PRM specialist. Although intensive postoperative rehabilitation can optimize functional outcomes, recovery remains conditioned by the severity of the injury

Statement of Disclosures

None

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