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US-Guided Perineural Amniotic Membrane/Umbilical Cord (Am/Uc) Particulate Injections for the Iatrogenic Radial Nerve Palsy: A Case Report

Topic: Health Conditions (Nervous System, Musculoskeletal System, Cardiopulmonary System)

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BACKGROUND

Radial nerve palsy is a well-recognized complication of orthopedic procedures, particularly those involving the humerus. Iatrogenic radial nerve palsy (IRNP) can result from surgical interventions, leading to significant motor and sensory deficits. Traditional management involves conservative rehabilitation, but emerging therapies, such as amniotic membrane and umbilical cord (AM/UC) particulate injections, may accelerate nerve recovery.

CASE DESCRIPTION

We report a case of a 24-year-old male who developed IRNP following osteosynthesis of a humeral shaft fracture. Postoperatively, he exhibited complete loss of wrist and finger extension (Oxford Scale 0/5) and radial nerve territory anesthesia. Electromyography confirmed radial nerve dysfunction, and ultrasound revealed an enlarged nerve with a loss of fascicular architecture, indicative of prolonged traction injury. Initial rehabilitation yielded minimal improvement, prompting perineural AM/UC particulate injection under ultrasound guidance two months post-surgery. One month post-injection, the patient demonstrated pain reduction and improved wrist extensor strength (OS 2/5). By the third month, motor function had significantly improved (wrist extensors OS 4/5, finger extensors OS 2/5), accompanied by ultrasound-confirmed nerve recovery.

DISCUSSION

This case highlights the potential of AM/UC particulate injection as a regenerative treatment for IRNP. AM/UC has been studied in ophthalmology and orthopedics for its neuroprotective and anti-inflammatory properties, promoting nerve healing and functional recovery. Compared to conventional treatment, AM/UC may enhance neural regeneration and reduce recovery time. Further studies are needed to validate its long-term efficacy in nerve injuries.

CONCLUSION

This case report emphasizes ultrasound's role in diagnosing and managing Iatrogenic Radial Nerve Palsy (IRNP) after humerus fracture surgery. It suggests AM/UC particulate as a potential treatment, showing positive outcomes. However, further research is needed to confirm its effectiveness in treating IRNP.

Statement of Disclosures

None

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