

A New Approach For Resistant Post-Injection Radial Nerve Palsy

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Introduction

In developing countries, intramuscular injections are frequently used to treat common ailments. With varied educational levels of health workers in India, it is not unusual to find radial nerve palsies following intramuscular injections (IMI) in the arm.

Literature is deplete regarding the treatment protocol of resistant nerve palsies. No clear cut guide lines exist regarding roll, type and proper timing of surgery.

Having had two cases referred for resistant post-injection radial nerve palsies, the author opted for surgical intervention with total recovery. These cases are presented to highlight the new approach.

Case No.1 : A male, SBU, aged 44 yrs., working as a compounder with a practicing general practitioner, was given intramuscular injection of analgin in left arm for his symptoms suggestive of viral infection. After injection, patient immediately noticed tingling in the distribution of radial nerve. This was followed by wrist drop, loss of power in extension of fingers and a patch of numbness over dorsum of hand over 1st web space.

Patient was treated with expectant line of treatment for 3 months without any improvement, Hence patient was referred to the author by his doctor on 30-8-03. On examination, there were signs of high radial nerve palsy. There was no tenderness over radial nerve in the spiral groove.

It was decided to explore the nerve surgically. Through posterior approach, radial nerve was exposed in the radial groove and was isolated. There was a nodule felt over radial nerve on the lateral

aspect. Epineurium was thickened. Neurolysis and epineurotomy was done. After epineurotomy, nerve was found to bulge out, indicating local compression.

Post-operative recovery was uneventful. Patient continued with physiotherapy, splintage and supportive therapy. Recovery of nerve function became evident nearly after 2 months and there was full recovery at 3 months. At 3 yrs. follow up, patient was symptom free and was gainfully employed as a heavy manual labour.

Case No.2 : A young boy, MKH, 7 yrs. old, had fever for which his doctor have him an injection of analgin in It. arm. The boy developed It. wrist drop in 4 hrs. following injection. Expectant line of treatment was followed for 3 months., without any improvement. The boy was referred to author in June 04. Clinically, there was a high, total radial nerve palsy,. A nodule was palpable along the radial nerve, in the spiral groove. The boy was operated for neurolysis. At operation, radial nerve had a nodule in the midzone of spiral groove and epineurium was thickened. Epineurotomy was done and nerve bundles were teased off gently. Post-operative recovery was uneventful. Within 15 days following surgery, the patient showed signs of nerve function recovery and at 1 month, there was full recovery. At 2 yrs., follow-up patient was symptom free and was doing all his scholastic activities.

Discussion

Nerve injuries due to intramuscular injections result in neuropraxia and axontemesis and supposed to have a good recovery rate. However, Dr. Pandian et.al., (ref.4) did a retrospective study of patients with nerve injuries following intramuscular injections

done between Jan. 1990 to Dec. 2003. They found, out of total 66 patients, 29 (44%) patients had radial nerve injuries while others had sciatic nerve injuries. Only 18 patients (28%) had good recovery.

Nerve paralysis initially is due to drug trickling down in the vicinity of nerve sheath causing chemical irritation and conduction blockage. Later on mechanical blockage ensues due to perineural fibrosis.

Initially patient is observed for spontaneous recovery especially. If the paralysis is partial. During this period, he is provided with splintage, physiotherapy and anti-inflammatory drugs.

Most patients can be expected to recover in 1 to 4 months. In 3-4 weeks, if recovery has not begun, the extent of nerve damage is assessed by electromyography. (ref.5). However the decision to explore in a late case must be a clinical one. (ref.5).

If recovery is delayed, neurolysis becomes extremely valuable. Palpable nodule along the nerve indicates dense perineural fibrosis. (ref.1).

At 3 months, if there is no recovery, choice is to explore the nerve and do adhesiolysis and epineurotomy than to continue expectant line of treatment for 9 months and then to opt for tendon transfers which is a compromise in the hand function and power. Besides this early surgery would reduce psychological trauma to the patient and the stressful situation to his treating doctor.

The two cases under discussion showed no signs of recovery up to 3 months and hence were operated with total recovery.

Conclusion

Epineurotomy is recommended for resistant high post-injection radial nerve palsy after 3 months.

Medical fraternity mainly the general practitioners ought to be well oriented for safe sites of intramuscular injections and also to minimize the intramuscular injections.

References

1. Aird Ian: A companion in Surgical studies, 11nd ed., P.413,1958.
2. Brown P.W.: The time factor in Surgery of Upper extremity in peripheral nerve injury. Clin. Orthp.: 68: p. 14,1970.
3. Chapman & Madison: Principles of treatment in Radial Nerve Palsy. Operative Orthopaedics, 11nd ed., Vol. 2, P. 1456,1993. J.B.Lippincott Company, Philadelphia.
4. Jevrai Duran Pandian et al. :Nerve injuries following intra-muscular injections . A Clinical & neurophysiological study from North-West India. Journal of Peripheral Nervous System, Vol. 11,issue 2, P. 165, June 2006.
5. Rolfe Birch: The primary & secondary repair of divided peripheral nerves: Rob & Smith - Operative surgery, The Hand. 4th Ed. P. 174. Butterworths, London, Boston, Toronto.
6. Seddon H.J.: Surgical Disorders of the peripheral Nerves. 2ndEd.,p. 31, 1975. Edinburgh, Churchill, Livingstone.

