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# Radial nerve injury following dry needling

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## SUMMARY

A 27-year-old secretary presented to an orthopaedic outpatients department with a 1-month history of left wrist drop following dry needling. On insertion of a needle, she reported spasms in her left hand followed by a wrist drop. An MRI scan was normal. Electromyogram and nerve conduction studies showed a neuropraxia of the left radial nerve. She was referred to a hand therapist for splinting and intensive hand therapy; however, her symptoms remain unchanged.

## BACKGROUND

Dry needling and acupuncture are commonly practised methods of pain management. In Ireland dry needling is performed by physiotherapists. It is considered a safe treatment.<sup>1</sup>

## CASE PRESENTATION

A 27-year-old secretary presented to an orthopaedic outpatients department with a 1-month history of left wrist drop following dry needling.

The patient attended physiotherapy occasionally for deep tissue massage and dry needling for shoulder pain. On this particular occasion, as the physiotherapist inserted a needle, she reported that she felt spasms in her left hand followed by a wrist drop. The needle was inserted in the lateral

aspect of her arm, approximately at the level of the junction of the middle and distal third of her left humerus. The patient reported that the needle was applied with equal vigour to other needles applied that day. A filiform needle 0.25 mm in diameter and 50 mm in length was used.

The patient attended the emergency department where an MRI scan of her arm showed no evidence of pathology at or around her left humerus.

## INVESTIGATIONS

Nerve conduction studies and an electromyogram (EMG) were performed following orthopaedic review. This revealed a neuropraxia of her left radial nerve at the spiral groove. EMG of the left triceps muscle was normal. She was referred to a neurologist, who could find no contributing neurological conditions or cervical radiculopathy. Follow-up nerve conduction studies and an EMG showed no signs of recovery. The patient continues to have symptomatic weakness.

## TREATMENT

The patient was referred to a hand therapist for splinting. Despite intensive hand therapy, she continues to show no signs of improvement and has consistent left wrist drop (figure 1).

## DISCUSSION

Dry needling is the insertion of a needle into a myofascial trigger point. A trigger point is a hyper-irritable spot in the skeletal muscle or its fascia.<sup>2</sup> The needle can be inserted into the superficial tissue above the trigger point or into the trigger point.<sup>1</sup> The depth to which the needle is inserted depends on the muscle being treated.

Injury to the radial nerve can present in a variety of ways. The more common would include following a fracture to the shaft of the humerus, compression of the arm (Saturday night palsy/honeymoon palsy) or following lead poisoning.

We report that there is little or no published evidence to suggest a radial nerve injury following



**Figure 1** The patient was asked to extend both wrists, and the figure 1 shows that the patient was unable to extend her left wrist.

## Learning points

- ▶ While rare, the complications of dry needling can have serious implications for the patient.
- ▶ The anatomy of the area being treated should be familiar to the practitioner before undertaking the procedure.
- ▶ Healthcare practitioners who perform this procedure should be familiar with the complications and should undertake informed consent prior to the procedure.



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dry needling. An extensive review of the literature shows reports of complications in dry needling and acupuncture such as pneumothorax, cardiac tamponade, spinal epidural haematoma, abdominal visceral injury, and median and fibular nerve injury.<sup>3 4</sup> Despite this, complications are rare; however, health-care professionals who offer this service should be familiar with the anatomy of the region that they are treating.

**Contributors** Clinical work-up and all the work surrounding the write-up of this case have been under the stewardship of MC. MC is the acting guarantor for this work. RM is an orthopaedic SHO at University Hospital Waterford. He reviewed the patient in the clinic, has followed the patient's investigation results, performed a literature search on this topic and wrote the case report under the guidance of MC.

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**Author note** This case was presented to the Department of Trauma and Orthopaedics in University Hospital Waterford. This patient is under the care of MC,

Consultant Orthopaedic Surgeon.

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