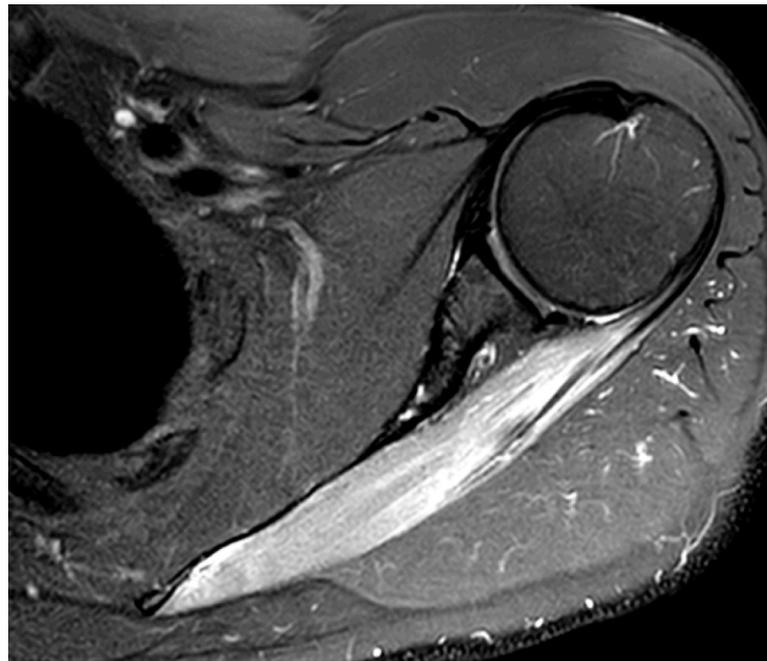


47M complains of shoulder pain for 4 months. Weakness in external rotation.

Findings:

- Diffuse oedema of supraspinatus and infraspinatus muscles
- Mild fatty infiltration of both muscles
- The suprascapular notch is normal, with no ganglion or mass compressing the suprascapular or axillary nerves
- No rotator cuff tear



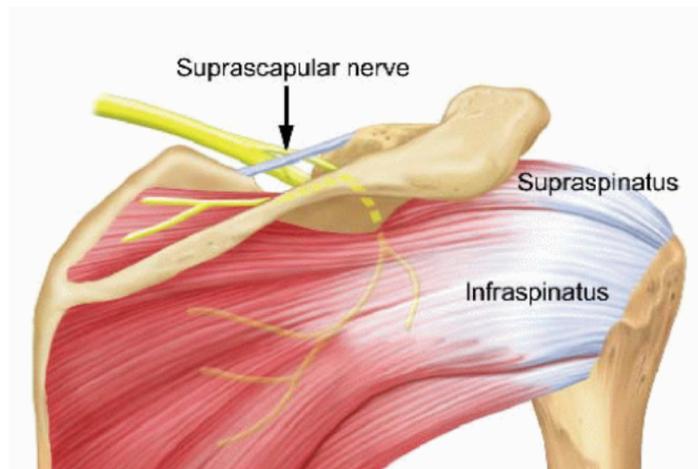
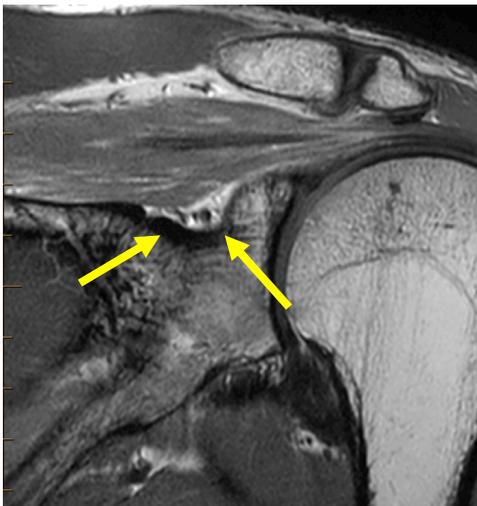
Above left: Sagittal oblique PD sequence demonstrates diffuse sharply demarcated oedema of supraspinatus and infraspinatus. A few bright streaks represent mild fatty atrophy (arrows).

Above right: PD axial sequence with fat saturation shows high signal in infraspinatus represents oedema.

Left: PD fat sat coronal oblique demonstrates similar findings in supraspinatus. Note the rotator cuff is intact and there is no ganglion or mass at the suprascapular notch (yellow arrow)

Discussion:

- **Parsonage-Turner syndrome**
 - Acute idiopathic brachial neuritis
- **Aetiology:**
 - Most likely an immune mediated response, often triggered by a viral antigen or recent immunisation
 - Rare hereditary form
 - Other associations with surgery, trauma and strenuous exercise
- **Epidemiology:**
 - 2-4 per 100,000 patients/year; Males more common than females
 - Bilateral in one third of cases
- **Clinical presentation:**
 - **Hallmark presentation is abrupt onset of severe pain in the neck, shoulder or arm, lasting approximately 4 weeks on average**
 - Weakness in abduction and external rotation; non-specific or deep shoulder pain; visible atrophy
- **Imaging:**
 - Muscle oedema in the distribution of the suprascapular nerve (supra and infra), less commonly the axillary nerve (deltoid) is involved.
 - Absence of other causes such as a ganglion or mass in the suprascapular notch (compressing nerve) or neck (involving brachial plexus)
 - **Muscle oedema is typically seen between 2-4 weeks following onset**
 - At some time (months) following initial denervation injury, muscle oedema will resolve. Atrophy and fat infiltration will remain and are important to describe, as they are permanent.
- **Differential diagnosis:**
 - **Suprascapular nerve entrapment (paralabral cyst or mass in suprascapular notch)**
 - Cervical spine disease, cervical cord pathology (syrinx)
 - DOMS – Delayed Onset Muscle Soreness
 - Infectious myositis and inflammatory myopathies



Left: Suprascapular nerve traverses the suprascapular notch (no compressive mass or ganglion)

Above: Diagram demonstrating the course of the suprascapular nerve as it branches from the brachial plexus (trunk of C5 and C6)

Further Reading:

Yanny S, Toms AP. MR Patterns of Denervation Around the Shoulder. AJR 2010; 195:W157–W163

Milner CS, Kannan K, Iyer VG, et al. Parsonage-Turner Syndrome: clinical and epidemiological features from a hand surgeon's perspective. Hand. 2016 Jun;11(2):227-31

Gaskin CM, Helms CA. Parsonage-Turner Syndrome: MR imaging findings and clinical information of 27 patients. Radiology. 2006;240(2):501-7.