MRI Appearances of Parsonage-Turner Syndrome

Sir,

Parsonage-Turner syndrome (also known as neuralgic amyotrophy or shoulder girdle syndrome) is a painful disease that involves shoulder and pectoral girdle.

Establishing the diagnosis clinically is demanding because features are non-specific that imitate other differential diagnosis; for example, rotator cuff tear or labral tear.[1-3]

A 67-year man with a history of complex left shoulder injury was referred by orthopaedic surgeons to radiology department for left shoulder, magnetic resonance imaging (MRI) to rule out a rotator cuff tear. No previous left shoulder MRI had been performed. Left shoulder MRI showed an articular partial tear of posterior supraspinatus tendon at its foot-plate. There was significant oedema and signal change in supraspinatus and infraspinatus muscles. Mild fluid was also evident around rotator cuff muscles and some of altered signals extended upto the tendon. There was severe chronic atrophy of supraspinatus and infraspinatus muscles. This raised the possibility of Parsonage-Turner syndrome with superadded traumatic changes in left shoulder (Figure 1 and 2).

Parsonage-Turner syndrome is typically described as an episodic, sudden-onset, acute, unilateral, shoulder girdle pain that can extend upto upper limb with an associated neurological weakness, numbness and muscle atrophy.[3]

There is no specific diagnostic test for this syndrome. Nerve conduction studies (NCS), electromyography (EMG) and MRI must be interpreted in correlation with clinical history. MRI is most appropriate imaging modality in such patients because MRI is sensitive for identifying signal changes in shoulder girdle musculature. MRI is also helpful to exclude intrinsic shoulder pathology; for example, rotator cuff tears, labral injury and impingement syndrome.[4]

On MRI, the earliest change is high signal in rotator cuff muscles on fluid sensitive sequences with T1-weighted images showing normal signal. After few weeks, there is reduction in muscle bulk and high T1 signals secondary to fat infiltration.[5]

To conclude, there is no single test for diagnosis of Parsonage-Turner syndrome. However, MRI shoulder is essential in diagnosis of Parsonage-Turner syndrome. In acute stage, there is increased signal in affected muscles on fluid sensitive sequences and in chronic stage, affected muscles atrophy with increased fat signal in affected musculature.

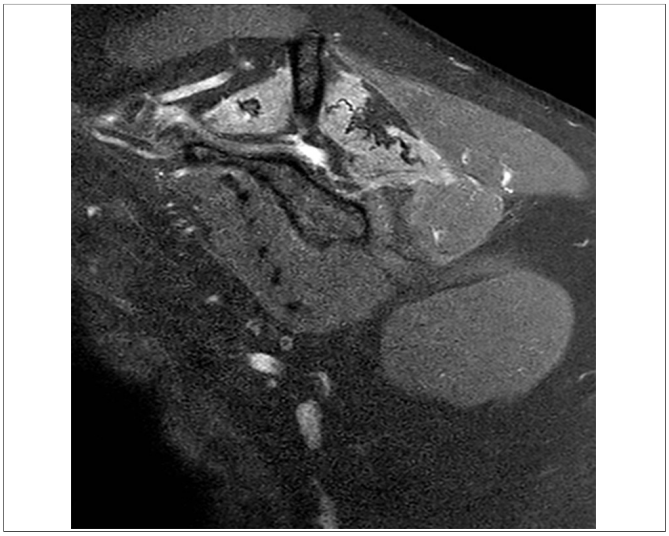

Figure 1: T2 fat saturated sagittal image shows high signal in supraspinatus, infraspinatus, and teres minor muscles.

Figure 2: T1 weighted image shows atrophy of supraspinatus, infraspinatus, and teres minor muscles.

CONFLICT OF INTEREST:
Authors declared no conflict of interest.

AUTHORS' CONTRIBUTION:
MFSS: Authored the manuscript.
BO: Reported the original MRI, made the diagnosis, did editing and proofreading of the manuscript.
BKA: Edited and proofread the final version of the manuscript.

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