LETTERS TO THE EDITOR

Magnetic resonance imaging: a useful technique in the diagnosis and follow up of focal myositis

Focal myositis is a benign inflammatory disorder that clinically may mimic a soft tissue sarcoma. A history of trauma and evidence of systemic symptoms are absent. In general, serum muscle enzymes and other routine laboratory variables are normal. Histological features show severe inflammatory myopathy with necrosis, inflammation, and later focal fibrosis. However, a clinical diagnosis of focal myositis may present difficulties in differentiation from other disorders. Furthermore, follow up of cases of focal myositis raises the need for non-invasive and reliable tests. In this regard, we describe our experience in a case where magnetic resonance imaging (MRI) was of great help in making a diagnosis and evaluating the outcome of the patient.

A 52 year old white man presented with a 20 day history of pain and swelling in his right arm. He denied trauma and his past medical history was unremarkable. Physical examination revealed a tender, localised, and firm mass measuring 8 x 5 cm in the posterior region of his right arm. His muscle strength testing was normal and he was also afebrile. All laboratory studies including rheumatoid factor, antinuclear antibodies, thyroid hormones, glucose, and muscle enzymes were normal or negative except for an ESR of 68 mm in the first hour, C reactive protein of 13.6 g dl⁻¹ (normal < 0.5), and creatine phosphokinase (CPK) of 346 U litre⁻¹ (normal 30-230).

Ultrasound examination of the right arm showed enlargement of the soft tissues. MRI revealed increased signal intensity on T2 weighted images and strong diffuse enhancement after gadolinium administration in the middle and external region of the right triceps. No bone abnormalities were observed (fig 1). Although STIR images can show muscle oedema very well, this finding is non-specific. Gadolinium administration was believed necessary to improve diagnostic specificity. STIR images are insensitive to gadolinium enhancement so they were not required.

On the basis of the radiological findings, a diagnosis of focal myositis was considered. However, despite suggestive data of focal inflammatory myositis, a muscle biopsy was considered to exclude a malignant muscle disease. In this sense, MRI was also useful in finding the best site for biopsy. Muscle biopsy was consistent with an inflammatory myopathy. Other disorders, such as muscle infarction sometimes seen in diabetics, were excluded. Due to spontaneous improvement during the diagnostic work up and considering that a good outcome may be observed in some cases of focal myositis without treatment, specific therapy with corticosteroids was not considered and only analgesic treatment was prescribed. Three months after the onset of symptoms ESR, C reactive protein, CPK, and MRI were normal (fig 2). By that time the patient was asymptomatic.

The aetiology of focal myositis is unknown and the course is generally one of regression. Although Flaisher et al have observed that patients with early laboratory abnormalities such as an increase of ESR or muscle enzymes may evolve to polymyositis, our patient had a good outcome. MRI may be useful in studying focal myositis as it may help in finding the location and size of the mass, as well as to provide a non-invasive method of follow up. In this regard, Fraser et al have pointed out that an increase in the MRI signal intensity on T2 weighted is useful to find the presence of an active inflammatory disease in the muscle. We feel that routine use of MRI may also be considered to evaluate the clinical course of this disease.

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Figure 1 (A) and (B): Long TR magnetic resonance images show a hypointense mass in triceps muscle with surrounding hypointense oedema. (C): On T1 weighted images no defined abnormality is observed, other than mass effect. (D): After gadolinium administration a nodular area of contrast enhancement is seen.

Figure 2 TR weighted magnetic resonance image shows a complete resolution of findings with no mass effect nor signal abnormality.

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