Ultrasound: A Potential Tool for Detecting of Fasciitis in Dermatomyositis and Polymyositis

To the Editor:

We read with interest the article by Noda, *et al* regarding the presence of fasciitis among patients with dermatomyositis (DM) and polymyositis (PM) and the association with myalgia[1]. The authors used histopathologically proven fasciitis cases to assess associations with clinical variables such as myalgia, muscle weakness, serology, interstitial lung disease, and malignancy.

Previously, we have assessed fascia thickness of the proximal muscles deltoid, vastus lateralis, and rectus femoris using muscle ultrasound (US) in 12 patients with DM or PM[2]. By comparison with healthy controls, we found a significant 2-fold increased fascia thickness of the deltoid muscles in patients with PM and DM. In the majority of the patients (n = 8), there was a markedly thickened deltoid fascia (> 5 SD; Figure 1). Four patients also had fascial thickening of the vastus lateralis and/or rectus femoris. This shows that US can detect an accompanying fasciitis in DM and PM patients. Although this diagnosis was not confirmed by magnetic resonance imaging or biopsy, an increase of > 5 SD in fascial thickness of the deltoid is suggestive of a fasciitis. Further, our results revealed the highest mean thickness of the deltoid and vastus lateralis muscles among patients with DM compared to PM. These results correspond with the findings of Noda, *et al* showing structural aberrations of the fasciae in patients with DM and PM[1,3]. In addition, Noda, *et al* also found mild fasciitis among a small portion of patients with PM compared to DM.

The study by Noda, *et al* provides evidence that fasciitis is involved in the pathogenesis of DM/PM and is associated with patient symptoms of myalgia. Muscle US proves to be a useful, noninvasive technique to visualize fasciitis in pathological skeletal muscle tissue among patients with DM or PM. Future research with muscle US is warranted to determine the prognostic value of these findings and may further elucidate whether remission of fasciitis also leads to disappearance of myalgia in patients with DM or PM.

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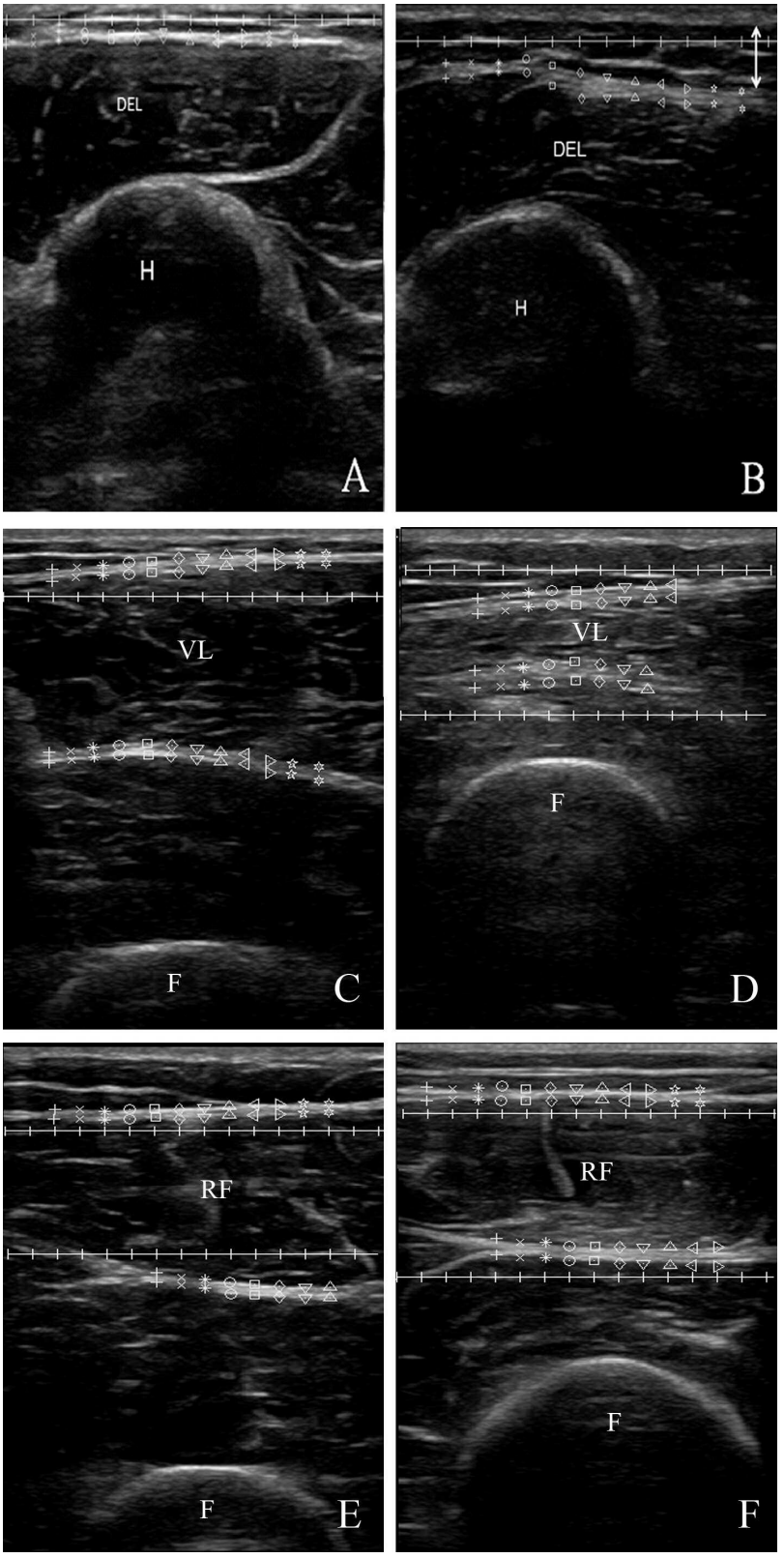

Figure 1. Transverse ultrasound images of deltoid (A, B), VL (C, D), and RF (E, F) muscles of a healthy person (left panels) and of 3 different patients with IIM (right panels). The calipers are placed around the superficial and deep fascia in these images. The fascia thickness of the DEL is clearly increased in the patient with IIM (9 SD above normal). The fascia thickening in this patient is not homogeneous, as can be seen from the placement of the calipers. The superficial and deep fasciae of the VL and RF are thickened (1.3 and 3.3 SD VL, 2.6 and 4.1 SD RF above normal, respectively), but less pronounced than the deltoid fascia. Double arrow in panel B indicates subcutaneous tissue. From Bhansing, *et al*. Muscle Nerve 2015;52:534-9; with permission[2]. VL: vastus lateralis muscle; RF: rectus femoris muscle; IIM: idiopathic inflammatory myopathy; DEL: deltoid muscle; H: humerus; F: femur.