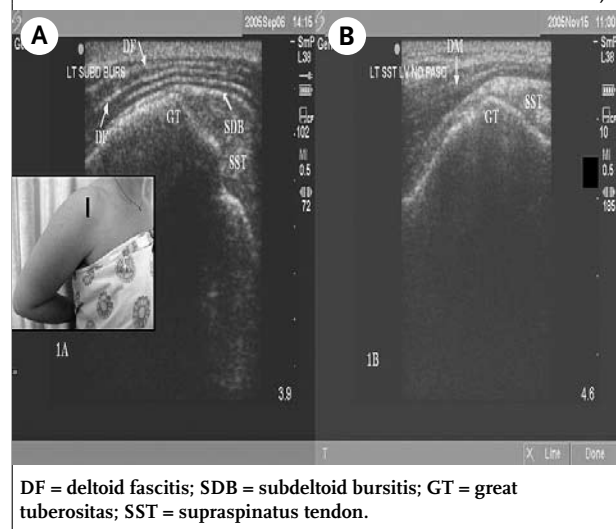


## US imaging of shoulder fasciitis due to polymyalgia rheumatica

Fascia and soft tissues, which are rich in collagen, receptors of pain and capable of significant distention, may be targets of autoimmune inflammatory diseases, causing morning stiffness, swelling, severe pain and limitation in movement. Ultrasound (US) is a very effective method for imaging soft tissues. The most frequent US soft tissue alterations in patients with polymyalgia rheumatica (PMR) are subdeltoid bursitis, tenosynovitis of the biceps tendon, and glenohumeral synovitis.<sup>1</sup> US imaging of another soft tissue disease, eosinophilic fasciitis, has also been described recently, but without a healthy control group.<sup>2</sup> We observed a thickened deltoid fascia (DF) by US study in patients with active PMR, which has not been reported previously. The aim of the study was to describe sonographic data of fasciitis due to PMR. Portable sonography (Sonosite-Titan, 5-10 mHz, L38) was performed on 14 patients with PMR (Chuang-Healey criteria, normal creatine kinase, differentiating PMR from macrophagic myofasciitis<sup>3</sup>) (aged  $65.4 \pm 6.5$  years, BMI  $25.4 \pm 1.6$  kg/m<sup>2</sup>). Thickness of DF (coronal view) was measured and compared with ten healthy controls (7 women, 3 men, aged  $61.5 \pm 11.8$  years, BMI  $27.7 \pm 5.1$  kg/m<sup>2</sup>). Coronal view of patients with PMR showed a 'two tram tracks' appearance (*figure 1A*): two thickened DF and two leaflets of subdeltoid bursitis separated by a hypoechoic layer. The shoulder position in internal rotation, extension and adduction for investigation was chosen for better visualisation of the subdeltoid bursa (*figure 1A-B*). Thickness of DF for active PMR was  $1.68 \pm 1.37$  mm compared with controls ( $0.83 \pm 0.25$  mm;  $p=0.047$ ). We observed other US characteristics of the fasciitis: fascial cleavage, easy detection of the thickened fascia, increased echogenicity, perifascial hypoechoic layers, and multiple hyperechoic lines of thickened perimysial tissue inside the deltoid muscle. After two months of CS therapy, the DF became undistinguished from controls ( $0.91 \pm 0.28$ ;  $p=0.1$ ) (*figure 1B*). BMI of patients with PMR and controls did not differ ( $p=0.19$ ). US imaging is an effective method to visualise, confirm and follow the course and therapy of fasciitis in patients with PMR.

**Figure 1.** Prominent thickening of deltoid fascia (deltoid fasciitis) and subdeltoid bursitis with 'tram track' appearance are seen (A), which disappeared after two months of corticosteroid therapy (B) (Coronal view, shoulder in internal rotation, extension and adduction)



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