clinics at Leeds General Infirmary over a two-week period were included in this observational study. Information recorded on a standard case report form included patient details, injection site, indication for injection and whether patients received a standard or an US-guided injection.

Results Overall, 91 patients received 127 soft tissue and intra-articular corticosteroid injections. 17 patients (19%) were referred for an US-guided procedure and these patients received 26 injections (20% of total injections). The sites injected using US were small joints of the hands and feet (8), tendon sheaths (8), shoulder (4), hip (3), wrist (2) and sternoclavicular joint (1). Seven patients referred for US-guided corticosteroid injection (41%) reported a poor response to a previous standard injection. US was used to confirm the local diagnosis in 6 patients (35%) before a guided injection was performed.

Conclusion The use of US to guide corticosteroid injections is increasing, especially in patients who have failed to respond to a standard injection. US is particularly useful when clinical diagnosis is uncertain or injection is technically difficult. As US becomes increasingly used in rheumatological practise, more rheumatologists may wish to learn the technique of US-guided injection which will require training. Further work is required to determine whether US-guided corticosteroid injection is of additional benefit to patients.

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OP0124 THE PAINFUL SHOULDER. SONOGRAPHIC STUDY IN 425 PATIENTS

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Background Shoulder pain is a common symptom and it may be related to many different diseases. Both articular structures and periarticular soft tissues may be involved and for the complex anatomy of the shoulder girdle it is often difficult to identify the site of anatomic alterations with clinical examination. In contrast, sonography of soft tissues successfully evaluates changes of both articular and periarticular structures.

Objectives The aim of the present study was to identify sonographically the site and the entity of alterations in patients with shoulder pain.

Methods Sonography of the shoulder was performed in 425 patients with shoulder pain. They were 282 female and 143 male; their mean age was 57.9 years (range 18-90). 228 patients had a clinically suspected diagnosis of periarticular disorders of soft tissues of the shoulder, 23 of polyarthritis, 14 of osteoarthritis, 15 of previous trauma, 14 of other rheumatic diseases. In 137 patients no clinical diagnosis had been made yet. In 103 cases bilateral involvement was present; for this reason 528 shoulders were studied totally. Moreover both the shoulders of 198 healthy control subjects were examined. They were 109

female and 89 male and their mean age was 56.3 years (range 19-69).

Using a combination of already reported techniques, sonography of the shoulder was performed using a 7.5 MHz linear transducer. Investigations included the long head of biceps tendon (peritendinous effusion, thickening, thinning, tears, echotexture changes); the supraspinatus tendon, the infraspinatus tendon and the subscapularis tendon (thickening, thinning, tears, echotexture changes); the subacromial and the subscapularis bursae (effusion); the acromioclavicular joint (irregularity, effusion); the glenohumeral joint (effusion). Moreover calcifications were searched for. The chi square was used for statistical analysis of the results.

Results Generals Results are reported on Table 1.

In 25 patients (5.9%) sonography did not show any changes of articular and periarticular soft tissues of the shoulder girdle.

Calcifications were found in 38 cases (72%, $p < 0.00001$).

Abstract OP0124 Table 1 Prevalence of alterations of the single structures studied

	Cases (n = 528)	Controls (n = 396)	p
Long head of biceps tendon	254 (48.1%)	8 (2.0%)	< 0.00001
Supraspinatus tendon	314 (64.6%)	15 (3.8%)	< 0.00001
Infraspinatus tendon	89 (16.8%)	1 (0.25%)	< 0.00001
Subscapularis tendon	23 (4.3%)	0 (0.0%)	< 0.00001
Acromionclavicular joint	270 (51.5%)	11 (2.8%)	< 0.00001
Glenohumeral joint	59 (11.2%)	0 (0.0%)	< 0.00001
Subacromial or subscapularis bursae	85 (16.1%)	0 (0.0%)	< 0.00001

Conclusion The present study showed the high diagnostic capacities of sonography in the detection of changes of the soft tissues of the shoulder in patients with shoulder pain. The sensitivity of the technique is confirmed by the finding of alterations in 94.1% of cases. The girdle's complex anatomy makes it difficult to identify alterations by clinical examination, and the application of other diagnostic techniques is often limited by the high costs and the low availability of equipment. In contrast, sonography is a noninvasive and low cost imaging method that can be applied successfully to the study of shoulder's disorders. As well, it is also valuable for monitoring the therapeutic response and for the possibility of ultrasound guided interventions.

SAT0184 SCREENING FOR OSTEOPOROSIS BY CALCANEUS ULTRASONOGRAPHY IN ANKYLOSING SPONDYLITIS

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Background Ankylosing spondylitis (AS) is a chronic rheumatic disorder resulting in axial deformation due to (osteo)sclerosis and postinflammatory vertebral decalcification. Therefore measuring axial bone density is complicated in AS. Limited data are available on the potential role of quantitative ultrasound (QUS) for screening of osteoporosis in a high-risk patient group with AS. We evaluated test characteristics of Sahara calcaneus QUS by comparison with data from dual-energy X-ray absorptiometry (DEXA) in AS.