



Ultrasound imaging for shoulder pain in general practice

Norman Broadhurst, MBBS, PhD, FRACGP, is Associate Professor, Department of Musculoskeletal Medicine, Flinders University, South Australia.

Timothy Baghurst, BMBS, DipMusMed, FRACGP, is a general practitioner, Hobart, Tasmania.

Shane MacLaren, BEng, BMBS, FRACGP, is a general practitioner, Glenelg, South Australia.

The Diagnostic Imaging Advisory Group in the Department of Health and Ageing (DHA) noted a huge increase in the costs of diagnostic ultrasound for shoulders compared to other musculoskeletal areas.¹ Because the increase was outside the DHA's guidelines for cost increase, the DHA fully funded a joint project with the Musculoskeletal Foundation of Australia in the form of a qualitative study to determine the degree of clinical information on request forms, correlate the request information with the ultrasound findings, and suggest further research relative to shoulder imaging and management.

Method

Four urban radiology practices specialising in musculoskeletal ultrasound in three states were approached to provide approximately 100 sequential requests and reports relating to shoulder ultrasound over the same 3 month period during 2002. Both the request form and the report were anonymous for patient, referring doctor and radiologist. We collected data on the patient and referrer. We did not include reports for patients sent solely for injection of the shoulder under ultrasound control, nor those whose request forms were illegible.

The wide variation in what was written on the request and what was described on the report caused difficulties when attempting to categorise the radiology findings. Simplified categories for analysis based on anatomy were subacromial space, tendonitis and joint dysfunction.

Results

We analysed 386 requests and reports. Several were of different anatomical areas, leaving 329 requests: 176 female, 150 male, three not stated. Specialists referred 77 patients. The mean age was 54.6 years (females 56.7, males 52.1). Most pathology was found in the sub-acromial space (247) of which about half (123) were soft tissue tears; the remainder (124) were swelling only. The remaining pathology reported was swelling of the long head of the biceps (8), disruption of the acromioclavicular head (4), adhesive capsulitis (3), and one avulsion fracture.

Information on 113 (34%) request forms contained no contributory history or clinical information for the radiologist (eg. 29 had 'shoulder pain' as the only information). The results were normal in 20%. A diagnosis was proposed on 169 (51%) request forms, of which 21 (12%) had a normal scan result.

Partial tears were 72% of all tears and occurred at a mean age of 63 years; complete tears occurred at a mean of 74 years of age. Despite the high incidence of tears of the rotator cuff, this diagnosis was rarely suggested on any request form. The contra-lateral shoulder was only reported in three cases (and then when specifically requested).

Discussion

There are limitations to this study. First, there was no attempt at selecting representative practices. But it seems unlikely that selection bias would be important if medical imaging practices receive referrals passively. Second,

to assume deficiencies of the referral form implies clinical deficiencies will overestimate the latter. Finally, the lack of a denominator means we cannot know from these data what the optimal referral rate should be.

The Medical Benefits Schedule² recommends comparison views (ie. imaging both shoulders) to avoid treating asymptomatic and degenerative pathology. Reporting this should be routine rather than the exception. That one-third of request forms had little or no clinical information to help the radiologist is a concern. This is now a requirement of the Medical Benefit Scheme from 2003 (item 55808).

The increasing use of shoulder ultrasound is unlikely to be useful except with 'red flag' conditions (*Table 1*). Most cases recover in 6 months.³ Indeed evidence based musculoskeletal practices refer only 8% of patients with shoulder pain for imaging compared to 58% from vocational general practices.⁴ This raises the question of the best means to establish cost effective management of shoulder pain by GPs (*Table 2*).

Table 1. Red flag conditions

- Fracture
- Tumour
- Infection
- Inflammation
- Visceral referred pain
- Night sweats in people over 55 years of age

Table 2. Avenues for further research

- Guidelines for shoulder imaging (similar to the Ottawa guidelines for knee and ankle injuries)
- What was the motivation for ordering the investigation and what was the level of confidence in management?
- What is the effect of imaging on management?

Implications of this study for general practice

- Patients presenting with nontraumatic shoulder pain are likely to be over 50 years of age and degenerative changes are to be expected.
- The most likely place to find pathology is in the sub-acromial space.
- If ultrasound is required, comparison of the opposite side should be requested.
- Reports should include whether symptoms are reproduced during the investigation.

Conflict of interest: none declared.

References

1. Health Care Providers. Available at: www.hic.gov.au/providers/health_statistics
2. Medical Benefits Schedule 2002;415.
3. Australian Acute Musculoskeletal Guidelines Group. Evidence based management of acute musculoskeletal pain. National Health and Medical Research Council. Available at: www.NHMRC.com.au. Accessed June 2003.
4. Australasian Faculty of Musculoskeletal Medicine. Report on the National Musculoskeletal Medicine Initiative. University of Newcastle. August, 2001.

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Correspondence

Email: broa0032@flinders.edu.au