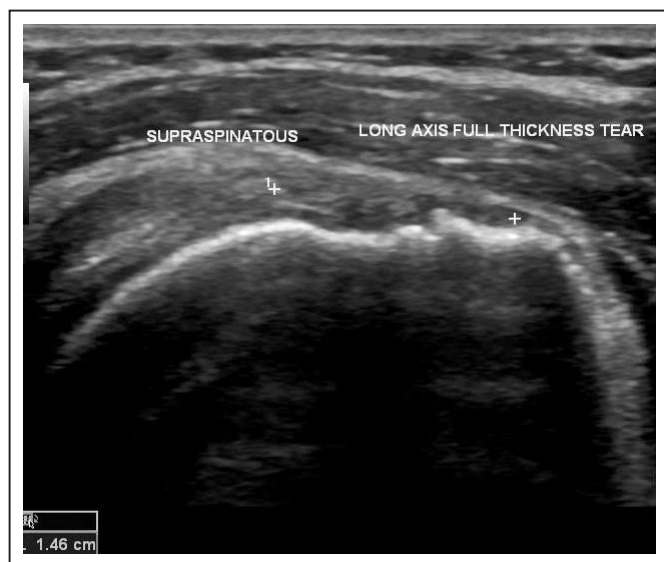


'One I did earlier' ... Surgeon-performed ultrasound in a shoulder clinic

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INTRODUCTION

Hospital waiting lists have been a cause of concern nationwide for many years. Previously, it was not uncommon for patients to wait many months or even times exceeding a year on waiting lists for operations.⁽¹⁾ Invariably, this caused significant public outcry, and the 18-week pathway to achieve and provide speedy care to patients in the NHS was introduced by the Department of Health for non-emergency hospital care,⁽²⁾ to ensure that care was delivered in a timely fashion.⁽³⁾



In a shoulder clinic at a district general hospital, most patients are referred for pain or signs of impingement. In this group of patients, rotator cuff tears are common, and it is essential to identify the integrity of the rotator cuff.⁽⁴⁾ In addition to clinical assessment, ultrasound is an important imaging modality in the diagnosis of a rotator cuff tear, and so many patients will require ultrasound evaluation after being seen in clinic. Early diagnosis of a rotator cuff tear is essential to ensure good outcomes, particularly in restoring full function. Late diagnosis can cause tendon retraction and subsequent failure of surgical management.

The most specific and sensitive test to diagnose a rotator cuff pathology is a magnetic resonance arthrogram,⁽⁵⁾ but this is an invasive and costly investigation which is not widely available. In addition, it is associated with further limitations, particularly that some patients find the study difficult to tolerate due to claustrophobia. The procedure itself is time consuming and in current NHS practice there is considerable delay in accessing this special investigation. This delay will undoubtedly have an impact on patient management due to delayed diagnosis, and therefore subsequent delay in surgical intervention.

However, ultrasound with its relatively low cost, portability and potential for use in an outpatient setting makes it a quicker and more accessible tool for assessment of the rotator cuff. The

use of ultrasound is widespread in other clinical specialities, which use it as an adjunct to clinical examination within the department. These include accident and emergency, obstetrics, anaesthesia and those involved in management of musculoskeletal disease. The Royal College of Radiologists has its own directive on ultrasound training recommendations for medical and surgical specialities.⁽⁶⁾

Ultrasound also has the advantage of allowing dynamic assessment and multiplanar imaging with minimal patient discomfort. As a result of its ready availability and many advantages, ultrasound imaging has become an essential supplement to clinical examination when assessing a patient with suspected rotator cuff pathology.⁽⁷⁻¹⁴⁾

CURRENT PATIENT PATHWAY

At present, after the patient has been referred by the general practitioner (GP), they are seen in the clinic by a consultant or one of their team members. If the patient requires an ultrasound examination, they are then referred to the radiology department and they join another waiting list for ultrasound evaluation of the shoulder. After requesting ultrasound assessment, there is commonly a wait of four to six weeks before an appointment becomes available. Following that, the patients return to orthopaedic clinic with the results of the ultrasound examination and a decision is made regarding further management. In addition to the time lag between referral by the GP and initial assessment in orthopaedic clinic, this wait means that the first six to eight weeks of the 18-week pathway are lost awaiting diagnosis, which in turn delays the decision that surgical management would be appropriate. It is only at the point at which both a firm diagnosis has been made and the decision that surgical intervention would be appropriate that patients are placed on the waiting list. At this point, a considerable portion of the 18-week pathway has elapsed, and once the patient goes onto the waiting list the time gap available to perform the operation is very small. As a result of this, the risk of patients breaching the 18-week target, with the associated financial penalties, is high.

DISCUSSION

From a clinical point of view, a one-stop clinic providing an accurate imaging modality to diagnose a musculoskeletal pathology would be ideal, allowing a decision on the same day regarding further management. The emergence of inexpensive high-definition portable ultrasound scanners has allowed orthopaedic surgeons to perform these scans in the clinic at the first point of contact;⁽⁴⁾ this study of 143 ultrasound scans of patients who underwent shoulder arthroscopy concluded that ultrasound imaging of the shoulder, performed by a substantially trained orthopaedic surgeon, is a reliable and time-saving practice to identify rotator cuff injury. The accuracy of ultrasound examination in diagnosing rotator cuff pathology has been established beyond doubt.^(15,16) The accuracy of ultrasound

examination looking specifically at rotator cuff tears has been reported as 67-100%, with a specificity of 85-97%.^(7,17) Others have shown significant cost savings with performance of shoulder ultrasounds in the one-stop clinic;⁽¹⁸⁾ in this study of 122 patients, the authors found that ultrasound had an associated sensitivity and specificity of 94.8% and 93.8% respectively in the diagnosis of full-thickness rotator cuff tear. When considering other shoulder pathology, ultrasound was associated with a sensitivity of 60.5% and specificity of 100% if long head of biceps pathology was included. More recently, other authors have shown that the use of portable ultrasonography by an orthopaedic surgeon can significantly reduce the time until treatment and the financial cost for patients with rotator cuff tears.⁽¹⁶⁾

The incidence of adults attending primary care for new shoulder pain is 1% per annum,⁽¹⁹⁾ with a prevalence of 2.4% for acute and chronic shoulder problems.⁽²⁰⁾ It is reported that surgeons' use of portable ultrasound in the clinic is increasing in Europe and America,⁽¹⁶⁾ with a quoted saving in one study of £193 per patient by using this method. With this cost saving in mind, the study concluded that a middle of the range device could pay for itself after approximately two years with only one surgeon using it.⁽¹⁶⁾

The British Elbow and Shoulder Society (BESS) set up an expert committee of shoulder surgeons who looked at the evidence-based guidelines for ultrasound issued by the European Federation of Societies for Ultrasound in Medicine and Biology in 2008,⁽²¹⁾ and the UK Royal College of Radiologists in 2005.⁽²²⁾ They concluded that these guidelines were based on expert opinion and there have been no peer-review publications to date that have noted rates of learning competency. They also found that these recommendations were from musculoskeletal ultrasound in general, as opposed to shoulder ultrasound. A group from Oxford has also presented an excellent rate and learning method for orthopaedic surgeons performing shoulder ultrasound.⁽²³⁾ These recommendations were based on the radiology and surgical evidence available as regards both radiology and surgeon-performed shoulder ultrasound scans. Their recommendations were submitted to the 2011 BESS council meeting. The BESS Council also has clear audit and governance directives for shoulder surgeons to keep the competence up to date. The only downside to surgeon-performed ultrasound is increased clinic time. This, however, can be minimised with experience and as the service picks up it should not take more than five minutes extra for performing the investigation.

CONCLUSION

Rotator cuff tear of the shoulder is a common pathology in patients presenting to the shoulder clinic, and ultrasound scanning is a reliable investigation in their diagnosis. The current treatment pathway requires this investigation to be performed in the radiology department as a separate attendance. This adds two extra hospital visits for the patient and several weeks of delay in treatment time. There is evidence in the literature to show that results of ultrasound scans performed by surgeons are comparable to radiologists. A surgeon-performed shoulder ultrasound scan in the clinic cuts short the referral-to-treatment time (RTT) by several weeks. It also has the advantage of avoiding the complications of delayed surgery, and evidence suggests potential for significant cost savings.

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