EXAMINATION OF THE SHOULDER

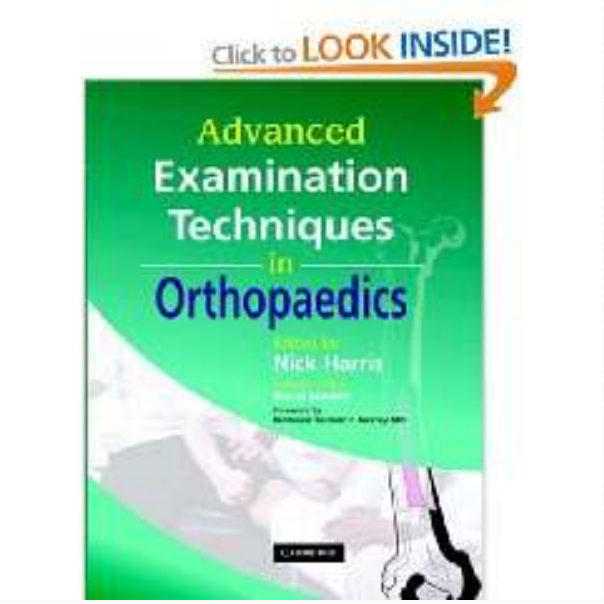
NE REGIONAL TEACHING-UPPER LIMB TERM

18/01/10

DJC BURTON

County Durham and Darlington NHS
NHS Foundation Trust

READING



Shoulderdoc.co.uk

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How I Examine—A guide from the expert

How I examine the shoulder

D. Limb

INTRODUCTION

Examination of the shoulder can seem quite daunting. The prospect is not enhanced by the plethora of special tests that can be carried out and signs that can be elicited, texts being full of advice on precisely how to determine which tendon is deficient and which soft tissue structure is inflamed. A similar wealth of less than useful information is available for the knee, yet most if not all trainees manage to develop a method of knee examination capable of identifying most lesions without committing every variant of every test to memory. The same situation pertains to the shoulder. I will present here a basic guide to shoulder examination founded on the 'look, feel, move' system that is useful in the clinic and can identify most shoulder pathology. Esoteric tests might still be needed for some rarer conditions and the interested reader may wish to follow-up some references to other tests, but the place of these additional items of examination will be limited outside the specialist shoulder clinic.

Although the system of examination I will present is based on the principle of looking, feeling and moving, the limitations of this sequence are recognized and the examination adapted so that the process flows. Each may chose to adapt the precise order of the elements of the examination, just as the examination may have to be adapted according to the functional capacities of the patient. It should go without saying that the most important element to precede an adequate examination is a thorough history. The examination then follows and gauges the range of movement and strength. Special tests are then directed to pathology suspected from the history.

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LOOK

It is tempting to produce a list of all the conditions that can be identified by simple inspection. Provided that the patient is adequately exposed such that the whole shoulder girdle is visible, the shoulder girdle is inspected from all angles and (at some point during the examination) care is taken to inspect the axilla; then the truth is that most of these conditions will be obvious and the prior memorization of such a list will be unnecessary. Care does have to be taken not to miss subtle but important signs such as rotator cuff wasting (supraspinatus above and infraspinatus below the acromial spine, respectively). Similarly care has to be taken in weighting the significance of such abnormalities as prominence of the acromioclavicular joint (ACJ). This may occur because of subluxation or dislocation after injury, because of arthritic change in the joint or may be normal for that person, the observation of symmetrical knobbles being helpful in this respect.

FEEL

Palpation of the shoulder girdle can be singularly unrewarding and in some cases downright misleading. That is not to say that it should not be done, for elements of it are useful and significant, but there are also traps for the unwary.

Palpation should be done in a systematic way. I would recommend starting at the sternoclavicular joint and palpating along the clavicle. Anterior prominence of the sternoclavicular joint may arise due to subluxation after trauma or more gradually as part of an osteoarthritic process. Spend some time at the ACJ as it is here that palpation is particularly useful. ACJ tenderness frequently accompanies ACJ pathology. Since degenerative change is almost universally found in the ACJ then the decision to include surgery to the

OVERVIEW

- GENERAL INSPECTION
- SHOULDER INSPECTION
- FEEL
- ROM
- TEST ROTATOR CUFF
- SPECIAL TESTS-according to history/presentation/age
- NECK
- NEUROVASCULAR

GENERAL INSPECTION

- Looks well ?
- In pain at rest/undressing/compensatory movements?
- Well muscled ?
- Posture/core stability ?
- Upper limbs used to weight bear ?

SHOULDER INSPECTION

- Wasting
- Scars-look carefully for arthroscopy and axillary !
- Deformity
- Posture of shoulder (high/low/pro/retracted)
- Sinus

WASTING

DEFORMITY

FEEL

- SCJ
- CLAVICLE
- ACJ
- ANTERIOR/POSTERIOR/LATERAL
- TRAPEZIUS & PARASPINOUS MUSCLES
- DELTOID/SUPRA & INFRASPINOUS FOSSAE

ROM

- ACTIVE THEN PASSIVE
- Standard planes-not scapular plane

- **ABD** 170 deg (from the back -look at scapulothoracic motion at same time)
- ?painful ? Easier with short lever

- **FF** 170 deg

ROM

- **ER** (nb from neutral) women>men

Usually greater tested in abduction (thrower)

- ***Functional* IR**

Thumb to vertebral level

Test IR and ER in abduction to look for GIRD (glenohumeral internal rotation deficit)

External rotation in abduction !

SCAPULOTHORACIC MOTION

- Compare both sides in abduction and return to side

- Asymmetry ?
- Smooth/jerky ?
- Asymmetric/inappropriate firing of prime movers (eg traps/lats) ? *Sequencing problem ?*
- Winging

- Usually first 45 deg GHJ then 2:1 GHJ/ST (debate !)

SCAPULOTHORACIC MOTION

ROTATOR CUFF

- Supraspinatus-nb 60 deg of abd in scapular plane applies most force.

Empty can-Jobe et al Am J Sports Med 1982;10:336-339
Full IR eliminates deltoid

Full can-Kelly et al Am J Sports Med *1996;24:581-88*
?Less painful-so weakness due to tear rather than pain

ROTATOR CUFF

- Itoi et al Am J Sports Med 1999;27:65-68

Empty can provokes more pain than *full can*

Full can weakness predicts tear more reliably than *empty can*

Boettcher et al J Science and Medicine in Sport 2009;12(4) 435-9

EMGs suggest that both *FC* and *EC* tests do not sufficiently isolate the supraspinatus to be of any predictive value!

ROTATOR CUFF

- Infraspinatus -external rotation

Bigliani et al JSES 1992;1:120-30. *ER drop sign*

Hertel R et al JSES 1996;5(4):307-13. *ER lag sign* (in 20deg abduction) and *drop sign* (in 90 deg abduction in scapular plane)

ROTATOR CUFF

- Subscapularis- internal rotation

Belly press

Lift off test-Gerber et al.JBJS1991;73(B):389-99

High sensitivity and specificity, EMGs-very selective for subscap.

Subscap lag sign-Hertel R et al JSES1996;5(4):307-13.

FRCS (Tr&Orth)

If you have done 1 test for all of the preceding and picked up the signs I suspect you will have passed !

(don't forget to at least offer to examine the neck and NV at hand aswell !)

SPECIAL TESTS

Shoulderdoc.co.uk lists 113 tests !

- ROTATOR CUFF

Hawkins' impingement sign-Hawkins R.Am J Sports Med 1980;8:151-8.

Neer's impingement sign-Orthop Clin N Am 1977;8:583-591

Both high sensitivity, low specificity (subsequent studies)

Neer *test* helpful

SPECIAL TESTS

- Long head of biceps tendon

Speed's test – Field L. Am J Sports Med 1993;21:783-91.

Resisted FF at shoulder with elbow at 30 deg (descriptions vary!)

Yergason's test- JBJS1931;13:160. Resisted supination elbow at 90 deg.

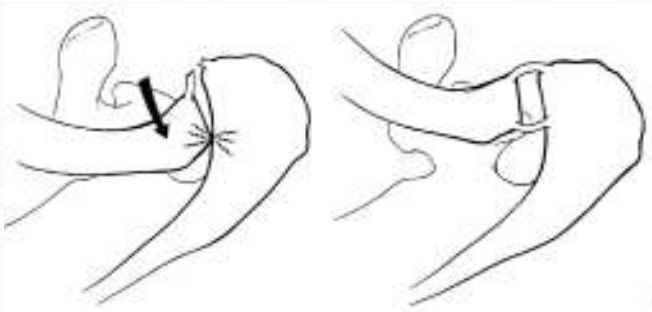
Originally for LHB in groove. Also for labral/SLAP pathology. Both high sens/low spec.

SPECIAL TESTS

- ACJ

Scarf- cross body adduction

Compression



O'Brien

Ballotment

Repeat after local anaesthetic to joint

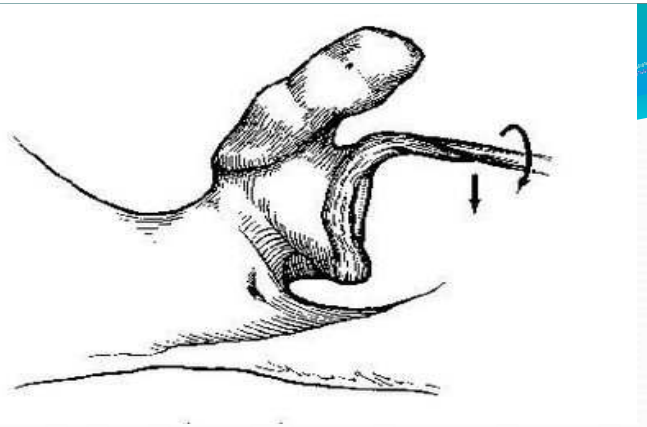
SPECIAL TESTS

- INSTABILITY

- Always start with Beighton laxity score /9
- Sulcus sign
- Anterior/posterior draw (describe….? Grade)
- Load and shift anterior/posterior
- Apprehension anterior/posterior(apprehensive or painful?)
- Relocation

SULCUS

SPECIAL TESTS



- SUPERIOR LABRUM ANTEROPOSTERIOR TEAR (SLAP)

O'Brien-Am J Sports Med 1998;26(5):610-613

Initially described for ACJ pathology (pain in ACJ).

Also for SLAP (pain deep in shoulder with click)

Near 100% spec and sens in O'Brien's hands-nearer 50% in subsequent studies!

SPECIAL TESTS-SLAP contd…

- Apprehension test painful (not apprehensive)

- *Biceps load test*- Kims et al Arthroscopy 2001;17:160-164. 90% sens/spec.

Supine

120 deg abduction

ER → pain

Elbow flexion vs resistance → more pain !

Thankyou !