

Slaughterhouseworker with a painful shoulder

48 years old, on sick leave, and offered operation

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Tasks to consider

- What is the disease?
- Is there loss of normal shoulder function?
- Is there also a work disability problem?
- What were the exposures?
- Is it a work related disease?
- What is the prognosis according to pain relief and shoulder function?
- What can be done to improve prognosis according to pain and shoulder function?
- What is the prognosis according to return to work?
- What can be done to improve return to work?

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Shoulder pain - what hurts?

- 16-25% report shoulder pain
- 1-8% have symptoms and also clinical signs of subacromial origin of the pain
- Referred pain
- 50% without shoulder pain have gross pathological/US/MRI changes (tears) of their rotator cuff
- Between 30 and 95% do not have a flat (type I) acromion
- 16% have enthesophytes (subacromial spurs).
- 7 to 20% have calcifications within rotator cuff tendons
- Prevalence of bursitis, biceps tendonitis, AC osteoarthritis?

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Shoulder diagnosis

- Clinical diagnosis - no consensus
- Further investigations, which and when?

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Rotator cuff syndrome, M75.1

- | | |
|----------------------|--|
| • Symptoms | • Insidious pain over the antero lateral aspects of the shoulder, aggravation by over head activities (painful arc), pain at night |
| • Clinical signs | • Muscle atrophy, impingement signs (e.g. Neer's, Hawkins's). Impingement test, pain at resisted movement. |
| • Functional tests | • ROM (active/passive), strength (isobex) |
| • Diagnostic imaging | • Radiographs: spurs (outlet), elevation of humeral head (AP), calcifications. US and MRI: Full thickness tears |

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Impingement syndrome, M75.4 (part of the same continuum)

- | | |
|----------------------|---|
| • Symptoms | • Insidious pain over the antero lateral aspects of the shoulder, aggravation by over head activities, pain at night, |
| • Clinical signs | • Muscle atrophy, impingement signs (e.g. Neer, Hawkins's), impingement test, pain at resisted movement. |
| • Functional tests | • ROM (active/passive), Strength (isobex) |
| • Diagnostic imaging | • Radiographs: spurs (outlet), elevation of humeral head (AP), calcifications
• US and MRI: Full thickness tears |

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Biceps tendinitis, M75.2 (also part of the same continuum)

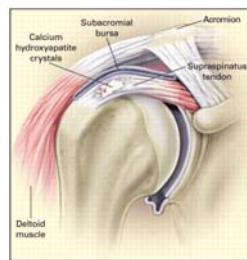
- Symptoms
 - Insidious pain over the antero lateral aspects of the shoulder and upper arm
- Clinical signs
 - Tenderness at sulcus, Speed's and Yergason's test positive

Periarthrosis, frozen shoulder, M75.0

- Symptoms
 - Insidious shoulder stiffness, severe pain
- Clinical signs
 - Near complete loss of passive and active external rotation of the shoulder

Calcific tendinitis, M75.3

- Severe self limiting shoulder pain due to extravation of calcium crystals into the bursa
- Radiographic evidence of calcium within a rotator cuff tendon, calcific deposits in the tendon, however, are not specific for calcific tendinitis.



Other shoulder disorders

- AC arthrosis
 - Cross body adduction test, swelling and tenderness
 - Radioagraph
- Instability
 - History of dislocation
 - Apprehension tests

What is the disease, anamnestic clues

- Acute onset
 - Dislocation, labral tears, rotator cuff tears, fractures, septic arthritis/bursitis, calcific tendinitis
- Gradual onset
 - Impingement/rotator cuff, osteoarthritis, frozen shoulder, polymyalgia, neoplastic disease, referred pain from cervical spine, neck, visceral radiation from processes in spleen, liver, heart.

Diagnosis of shoulder pain

bmj 2005;331:1124-8

- **History:**
 - Acute or gradual onset, pain at night
 - Neck or upper limb pain
 - History of previous trauma
 - Other joints affected
 - Systemic symptoms of illness (fever, weight loss, rash), respiratory symptoms
 - Comorbidity (diabetes, stroke, cancer, gastrointestinal, or renal disease, ischemic heart disease)

Diagnosis of shoulder pain

bmj 2005;331;1124-8

• Examination:

- Neck, axilla, and chest wall.
- Asses range of movement of cervical spine
- Inspect shoulder for swelling, waste and deformity
- Palpate sternoclavicular, acromioclavicular, and glenohumeral joints for tenderness, swelling, warmth, and crepitus.
- Compare strength, stability, and range of motion of both shoulders
- Painful arc, signs of impingement, drop arm test
- Test passive external rotation

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Diagnosis of shoulder pain

bmj 2005;331;1124-8

Shoulder pain

- Rotator cuff disorder: rotator cuff tendinopathy, impingement, subacromial bursitis, rotator cuff tears, biceps tendinitis
- Glenohumeral disorder: frozen shoulder, arthritis
- Acromioclavicular disease
- Infection
- Traumatic dislocation

Functional impairment

Pain from elsewhere

- Referred pain: neck pain, myocardial ischemia
- Polymalgia
- Malignancy

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Further investigations –

Southampton Health Technology Assessment Center, 2003

The effectiveness of diagnostic tests for the assesmnet of shoulder pain due to soft tissue disorders: a systematic review:

- Results suggests that clinical examination by specialists can rule out the presence of rotator cuff tears
- MRI or Ultrasound could equally be used for detection of full-thickness tears
- The prevalence of rotator cuff disorders was high in most studies, overall mean prevalence 50%.

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Further investigations?

- Radiograph: Between 30 and 95% do not have a flat (type I) acromion, 16% have enthesophytes (subacromial spurs), 7 to 20% have calcifications within rotator cuff tendons
- Ultrasound and magnetic resonans imaging: 50% without shoulder pain have changes (tears or rupture)of their rotator cuff
- Early investigation may increase referral rates to specialists

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What is the prognosis of rotator cuff disorders?

- How fast do you get well?
- Can treatments help?
- Is it safe to work or can workloads harm?

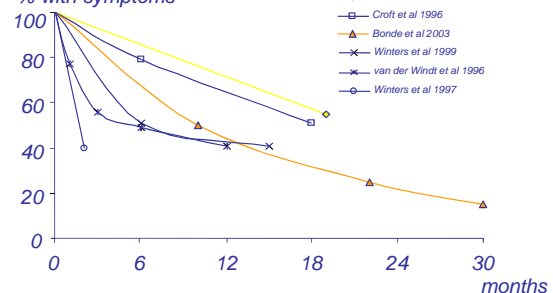
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Prognosis (shoulder pain)

Svendsen & Frost 2004

% with symptoms



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Surgery for rotator cuff disease

Cochrane review, 2008

- Aim: to determine the effectiveness and safety of rotator cuff disease
- Studies: randomised or quasi randomised studies of participant with rotator cuff disease and surgical interventions compared to placebo, no treatment or any other treatment
- Included: 14 studies involving 829 participants, 11 with impingement, two with rotator cuff tear and one with calcific tendinitis
- Conclusion: no firm conclusion on the effectiveness and safety could be drawn. No significant difference in outcome between decompression and active non-operative treatment.
- Adverse events accrued in three trials and included infection, capsulitis, pain, deltoid atrophy, and reoperation

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Surgery for rotator cuff disease, 600 patients from 70 centres

UK Rotator Cuff Surgery Trial



The clinical and cost-effectiveness of surgical (arthroscopic or open) versus Rest then Exercise management for tears of the rotator cuff.

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Physiotherapy interventions for shoulder pain

Cochrane review, 2003

- Aim: to determine the effectiveness physiotherapy interventions for disorders resulting in pain, stiffness and/or disability of the shoulder
- Studies: randomised trials and suffering from a shoulder disorder
- Included: 26 studies. Little overall evidence to guide treatment. Generally small trials. Exercise was effective in terms of short term recovery in rotator cuff disease, and longer term with respect to function

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Rotator cuff disorders – best practise,

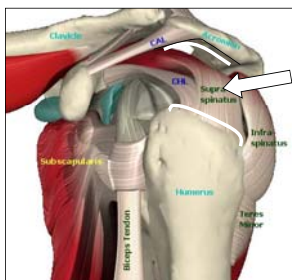
bmj 2005;331:1124-8

- Shoulder disorders are common and sophisticated diagnostic does not alter to any great extent that most cases should be handled by conservative treatment in primary care
- Diagnosis of shoulder problems is primarily based on history and clinical examination to rule out referred pain or malignancy and to establish the most likely cause of shoulder pain: rotator cuff disorder, glenohumeral disorder, acromioclavicular disease or traumatic dislocation.
- Should systematically registrate shoulder function and evaluate work demands
- Tailored advice: stay active, occupational modification if needed, and analgesics
- Physiotherapy may help restore function if impaired
- Referrel to orthopedic specialist if pain and disability persist more than six months, despite attention to occupation and physiotherapy and steroid injections. Further investigations may be needed for guidance of surgical treatment

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Rotator cuff disorders



Subscapularis
Supraspinatus
Infraspinatus
Teres minor

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