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The Frozen Shoulder

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- Consultant 7 years
- Full time shoulder specialist
- Part time NHS appointment
- SOL for remainder
- 30 new /50 follow ups per week
- 600 procedures per year (open and arthroscopic)



Frozen Shoulder



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- Definition
- Pathology and medical associations
- Presentation
- Clinical Examination and Investigation
- Natural History
- Treatment
- Conclusions

Definition



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‘Frozen shoulder is a condition difficult to define, difficult to treat and difficult to explain from the point of view of pathology’

Codman 1934

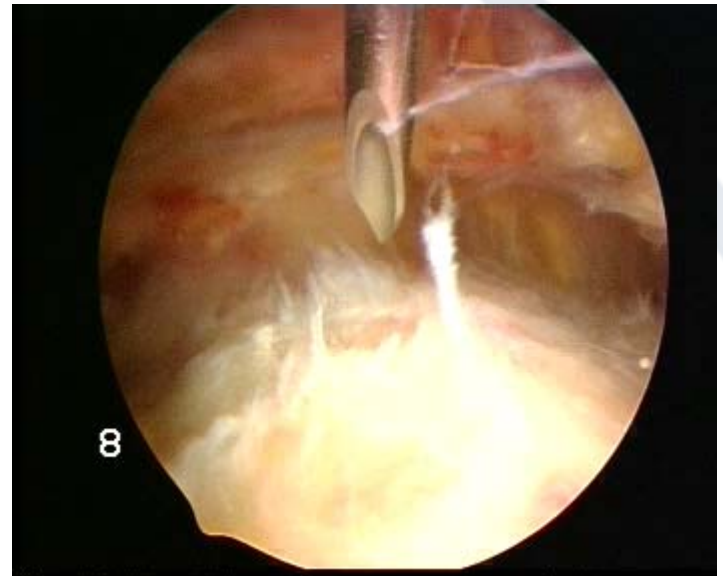
‘A condition of uncertain aetiology causing significant restriction of passive and active movement in the absence of obvious shoulder pathology’

Francis Cuomo 2001

Frozen Shoulder is a Diagnosis of Exclusion. It is not...



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Secondary Capsulitis



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- Underlying cause
- Insidious onset
- Mechanical pain
- Global restriction in ROM esp post capsule (internal rot'n)



Medical Associations



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- Diabetes
 - Incidence of FS in diabetics is 10.8%
 - Incidence in non-diabetics is 2.3%
 - 28% of pts with FS have abnormal GTT
- Thyroid disease
- Hypoadrenalism



Pathogenesis



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- Adhesive capsulitis (Neer) – avascular dense capsule adherent to the humeral head
- The capsule (CHL & RI) becomes inflamed then contracts to form a thick fibrous sheet
- Increased serum lipids (TG & cholesterol) cf diabetes, proliferation of myofibroblasts in capsule cf Dupuytren's – Bunker
- Loose association with trauma



Epidemiology



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- Incidence across general population ~2%
- Most common in 30-60 age group
- Women>Men
- Left>Right
- Increased risk of contralateral involvement
- Recurrence very uncommon

Clinical Presentation



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- Insidious onset non-mechanical pain
- Pain greater at night, exacerbated by movement
- Pain is progressive and unremitting
- Usually no apparent cause (history of trauma usually spurious)
- Followed by progressive loss of movement especially external rotation

Examination



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- Early signs
 - Irritable movement in all directions
 - No evidence of impingement, cuff pathology, biceps problems etc
- Established disease
 - Decreased ROM esp external rotation
 - Firm end-point
 - Passive = active ROM
 - Pain only on extremes of range
 - Reversal of normal scapulothoracic rhythm



Investigations



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- Essentially a clinical diagnosis
- However, in patients who do not respond to an initial course of physiotherapy, x-rays to exclude OA, AVN, tumour and dislocation
- X-rays are normal apart from showing regional osteoporosis
- In selected patients a glucose test and lipid profile may be indicated

Natural History



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- Initially thought to last 18-24 months
- Mean duration of disability actually ~30 months
- Objectively, 50% of patients have some residual loss of motion
- Functional disability 7%

The Three Phases of Frozen Shoulder



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- Freezing phase lasts 3-9 months
- Characterised by constant unremitting aching pain
- Subsequent gradual stiffening





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- ‘Frozen’ phase characterised by functionally disabling stiffness
- Pain only at extremes of range
- Lasts 4-12 months





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- 'Thawing' phase
- Minimal or no pain
- Gradual return of movement
- Internal rotation last to improve
- Lasts 12-42 months
- Recovery variable



Conservative Management



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- In freezing phase
 - Good pain relief (NSAIDs)
 - Gentle physiotherapy (stop if aggravating shoulder)
 - Steroid injection for pain relief
- In frozen phase
 - Trial of physiotherapy 3/12
 - stop if no improvement
- In thawing phase
 - Physiotherapy most useful



Surgical Intervention



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- Capsular distension or 'brisement' – mixed results
- MUA can have dramatic results!
 - Not if osteopaenia, post-trauma or RSD
- Patient needs to be motivated for rehab
- Not in freezing phase
- Less successful in diabetics
- Complications
 - Fracture, cuff tear, dislocation, radial nerve injury



Arthroscopic Capsular Release



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Originally used as an adjunct to MUA

Results are predictable, safe and superior to MUA alone

Can be technically challenging

Can be used following failed MUA, osteoarthritis, post-trauma/post-surgical

Day case procedure

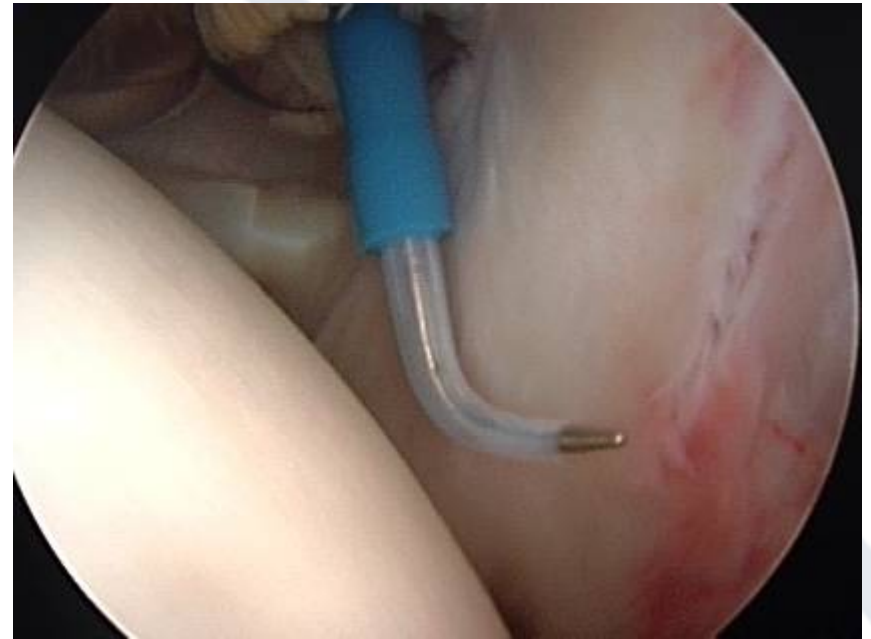


Surgical Technique



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- Interscalene brachial plexus block and GA
- Resect rotator interval capsule incl CHL
- Mobilise subscapularis
- Release middle GHL
- Capsular release down to inferior recess
- Intensive post-op physio

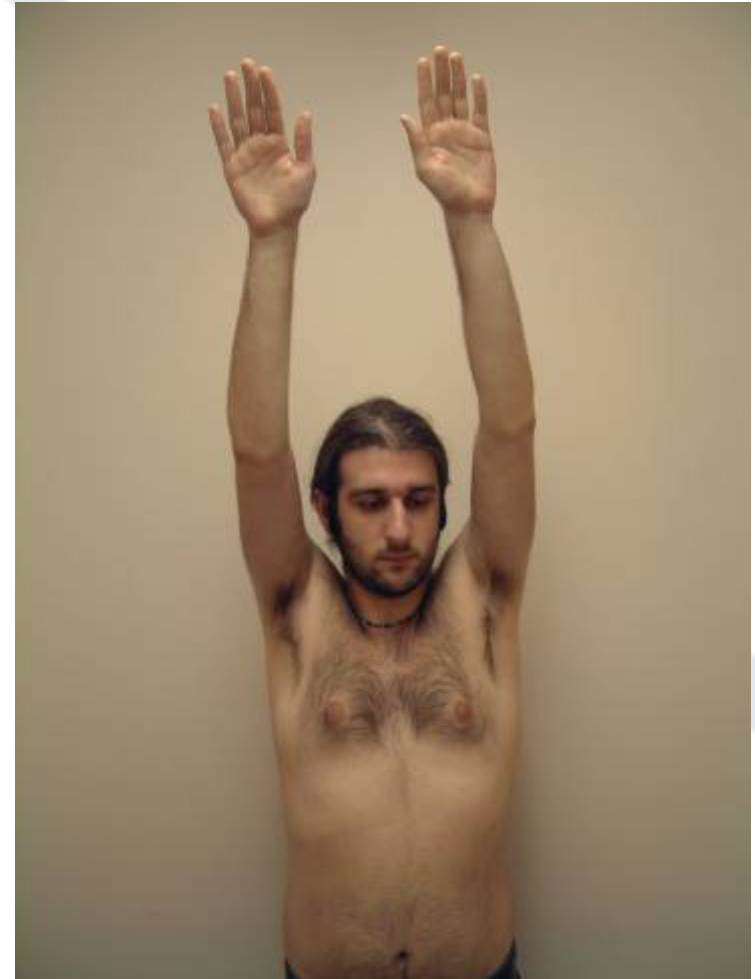


Results of Surgery



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- Non-diabetics 90% return to normal function
- Diabetics 75% good results
- Complications
 - Failure of surgery
 - Axillary nerve injury
 - Pain and swelling



Thank You - Questions



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