

Anterior Shoulder Stabilisation

Introduction

Surgery: Stabilisation of the shoulder is a procedure used for shoulder instability. Initially, the shoulder is examined arthroscopically to determine the extent of the damage including any Bankart or SLAP lesions. Arthroscopic stabilisation is not suitable for all patients with shoulder instability, so in many circumstances, open stabilisation, for example Latarjet procedures, remains the procedure of choice. Additional procedures, including SLAP and Bankhart repairs should be conveyed from the surgical team to ensure a comprehensive understanding of healing structures and appropriate rehabilitation considerations.

Post-operatively, all groups follow similar principles of rehabilitation; a period of immobilisation to allow healing to commence, scapulothoracic control, gradual progression of range of movement, submaximal tissue loading, proprioceptive and neuromuscular control exercises through to full muscle power, endurance and stability of the shoulder and shoulder girdle.

Indications for surgery: Recurrent dislocation, shoulder instability and pain.

Expected Length of Stay: Day case

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Scope of practice

These guidelines are designed to guide physiotherapists when treating patients following shoulder stabilisation. A process of systematic review of the current evidence based literature, medical and peer consultation produced these guidelines. They were correct at the time of writing. The guidelines should be used in conjunction with the clinical reasoning skills of the physiotherapist and patients should always be treated on a case-by-case basis. Communication between the rehabilitation therapist and surgical team is essential to ensure adequate protection of healing structures.

Aim

The aim of these guidelines is to provide physiotherapy staff with a series of recommendations from the current evidence base to assist them in the management of patients who have undergone this surgical procedure.

Literature review question

What is a safe and effective rehabilitation programme for post-operative shoulder stabilisation?

Search Process

Appraisal process: Question formulated, keywords selected using PICO, databases searched, articles obtained, articles appraised, consolidation of evidence, evidence graded and report written.

Total number of articles selected: 26

Total number of articles discarded: 36

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CASPs used: 0

Data Bases:

Database	Dates	Limitations
Medline (OVID)	2010 to present	English Language
Embase (OVID)	2010 to present	English Language
AMED (OVID)	2010 to present	English Language
CINAHL	2010 to present	English Language
PEDro	2010 to present	English Language
JBI Connect	2010 to present	English Language
Cochrane Library	2010 to present	English Language
NHS Library of guidelines	2010 to present	English Language
TRIP database	2010 to present	English Language
PubMed	2010 to present	English Language

Key Words:

	AND	AND	AND
Shoulder	Stabilisation	Rehabilitation	Post-operative
	Stabilization	Exercise	Postoperative
	Joint instability	Physiotherapy	Post Operative
	Bankart Repair	Muscle Strengthening	Orthopaedic Surgery
	SLAP repair	Rotator Cuff Exercises	Orthopedic Surgery
	Thermal Capsulorrhaphy	Therapeutic Exercise	Surgery
	Inferior Capsular Shift	Physical Therapy	Immobilisation
	Reverse Bankart Repair	Manual Therapy	Immobilization
	Open Latarjet Reconstruction	Stretching	
	Hill Sachs Defect		
	Hill-Sachs Defect		
	Humeral Head Grafting		
	Hill Sachs Lesion		
	Hill-Sachs Lesion		

Results

The scientific evidence for physiotherapy rehabilitation following shoulder stabilisation surgery is limited. These guidelines reflect current practice in various centres, and are based on the expert opinions of the Orthopaedic Surgeons involved and Specialist Physiotherapists. NHS Lothian Orthopaedic Surgeons, were also consulted and their expert opinion have been noted accordingly.

Expectations of Surgery

Surgical outcome is dependent on a number of factors including age, pre-existing medical conditions, the shoulder's pre-morbid state and post-operative rehabilitation. The aim of surgery is ultimately to ensure shoulder stability and thus reducing the likelihood of further dislocation and in turn reducing associated pain, improving function and return to sport.

Key Points

- **Shoulder immobilised in sling for 4 weeks or as per consultant instructions**
- **Surgery-specific consideration to healing structures especially biceps following SLAP repair – avoid resisted biceps for 12/52's (13)**
- **Pendular exercises are not advocated in the initial phase**
- **Heavy weight lifting above shoulder height should be avoided during rehabilitation**
- **Contact sports should not be resumed prior to 6 months**

Recommendations

Immediate Post Op / Early Rehabilitation – 0 – 4 weeks

Arm is immobilised in a sling for approximately 4 weeks or as per consultant post operative instructions (1,2,3,4,5,12, 15, 17, 18, 19, 23, 25, 26)The sling can be removed for showering, but the arm must be kept across the abdomen at all times. The sling should be worn overnight. C

Patient is advised of maintenance exercises for the shoulder girdle, elbow, wrist and hand. (4)
C

Outpatient physiotherapy is not required during this period C

Goals

- To reduce post operative inflammation (9)
- Maintain movement at shoulder girdle, elbow, wrist and hand (4,9)
- Education of patient with regards post operative restrictions/protocol (14)
- Allow early scar formation

Current Practice

- Home ice packs (9)
- Active exercises of the shoulder girdle, elbow, wrist and hand range of movement (4, 9, 12, 13, 14, 16, 17, 21, 25)
- Shoulder immobilised in sling (1,2,3,4,5,9,12)

Middle Phase – 4 - 6 weeks

This phase involves gradually increasing glenohumeral movement, minimising stress on the repair, through passive and active-assisted exercise. Maintenance exercises for the shoulder

girdle should be continued with light to no resistance (12).

C

Milestones to progress to next phase:

ROM goals and strengthening activities completed with minimal to no pain and with normal movement patterns (12)

Goals

- Gradually increase glenohumeral movement, minimising stress on repair (2, 14)
- Maintain shoulder girdle muscles and movement (2,4,8,9)
- Increase function (4,9)

Current Practice

- Discard sling (1,2,9)
- Active-assisted flexion and rotations (lateral rotation within comfort limits, avoid stretching into end of range) with patient supine.
- Graduated range of movement exercises at glenohumeral joint depending on surgical procedure (13, 14, 15, 17, 18, 21, 23, 24, 25)
- Encourage scapular setting exercises (4,8,9,12, 16, 17, 18, 21)
- May use arm for light daily waist level activities only (4, 21)
- No heavy lifting (12)

Middle Phase 6-12 weeks

The aim of this phase is to achieve staged ROM goals, passive and active ROM and increase functional activities. (12)

C

This phase involves progressive muscle strengthening and regaining control and co-ordination around the shoulder and shoulder girdle. (1,2,6)

C

Patients may re-commence driving once they have sufficient range and control of movement.

C

Milestones to progress to next phase:

ROM goals and strengthening activities are to be completed with minimal to no pain, normal movement patterns, appropriate scapular control and posture (12)

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Goals

- By 12 weeks aim to regain full range of shoulder movement, actively and passively (1,2,9, 12, 14, 18, 25)
- Gradually improve muscle strength, control and co-ordination, around shoulder and shoulder girdle(1,2,6,9, 12, 25)
 - Avoid combined ER and abduction eg push ups, bench press, pec flies, overhead press (12, 14, 17, 21, 23)
 - Avoid repetitive overhead activities, heavy lifting, plyometrics or sports participation (12, 14, 18)
 - No resisted biceps until 12/52's if a SLAP repair has been carried out

Current Practice

- Begin progressive active exercises (9)
- Strengthen scapular retractors and upward rotators. (12, 14, 17, 21, 23)
- Use of isokinetic machine on passive mode for medial and lateral rotation.
- Initiation of rotator cuff strengthening, and progressed through range, ensuring normal movement patterns, emphasizing high reps and relatively low resistance (12, 13, 16, 18, 25)
- Light Theraband® exercises for shoulder and shoulder girdle muscles (9, 23, 26)
- Proprioception and neuromuscular exercises within range of movement limitations (13, 17, 18, 19, 23, 26)
- Address cervical, scapulothoracic and trunk mobility and strength limitations/deficits for example core stability (12, 14, 18, 26)
- Lower extremities strengthening and mobility exercises (16, 18)

Late Stage- 3 months- 6 months

Milestones to progress to next phase:

Minimal to no pain or sensation of instability with activities

Full functional ROM and adequate strength and endurance of rotator cuff and scapular muscles

(12)

Goals

- Achieve full range or good functional glenohumeral movement (9, 23)

Current Practice

- Passive ROM, stretching, and joint mobilizations as needed to full or good functional range of movement. (9, 12)
- Avoid stretching to gain end range ER or ER at 90deg abduction unless there is significant restriction (12, 18)

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- Normalise strength, endurance, neuromuscular control, and power (12, 14, 18, 21, 26)
 - Avoid lat pull downs with hands behind head – able to do it to chest (12, 21)
 - Avoid end range shoulder extension eg. Tricep dips, bench press
- Improve proprioception (10, 17, 18)
- Gradual return to full ADLs, work, and recreational activities
- Continue shoulder strengthening programme as initiated in middle stage, with increasing emphasis on high-speed multiplanar activities that incorporate the entire kinetic chain (12, 17, 18)
- Scapular muscle strengthening and PNF patterns as required (21)
- Isokinetics for rotator cuff
- Balance and upper limb weight bearing exercises (10, 12)
- Sports specific training as appropriate (8, 9, 12, 18, 23, 24)
- From four months can start to incorporate specific rehabilitation exercises as required for return to sport/function including plyometrics and overhead activities if appropriate (12, 14, 17, 21)

Late Stage – 6 months+

Milestones to return to work, hobbies and sport (C)

Contact sports may be resumed from 6 months onwards providing patients have optimal glenohumeral and shoulder girdle movement and adequate strength 80%-90% of the unaffected side (8, 13, 16, 25, 26)

- Isokinetic testing approx 90% of unaffected side of ER/IR strength at 60/180 speeds for return to sport (18, 26)
- ER/IR ratio should be approx 66% (23)
- Overhead strengthening and sports specific drills can be incorporated as appropriate

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Appendix

Levels of Evidence

Evidence from large randomised controlled trials (RCTs) or systematic review (including meta- analyses) [†]	A1
Evidence from at least one high quality cohort	A2
Evidence from at least one moderate size RCT or systematic review	A3
Evidence from at least one RCT	B
Expert opinions	C
Laboratory Evidence*	D

[†] Arbitrarily, the following cut-off points have been used: large study size ≥ 50 patients per intervention group; moderate study size ≥ 30 patients per intervention group.

* Arbitrarily, added by Lothian Physiotherapy Musculoskeletal Network Group

Modified from: MacAuley D and Best TM (2007) Evidence-based Sports Medicine. 2nd Edition. BMJ Books. Blackwell Publishing. Oxford, UK.