Latarjet Procedure

The Latarjet procedure involves transfer of the distal coracoid to the anterior-inferior aspect of the glenoid. It is used in patients with significant bony deficiency following shoulder dislocation, those with recurrent instability (following traumatic dislocation) or those who have failed soft tissue procedures e.g. Bankart repair. The Latarjet procedure provides stability in three key ways; First, the coracoid bone block increases the anterior posterior diameter of the inferior portion of the glenoid fossa, making it more difficult for the humeral head to subluxate or dislocate; Second, the conjoined tendon (coracobrachialis and short head of biceps) acts as a sling reinforcing the inferior capsular ligamentous complex and the inferior portion of the subscapularis; Finally, repair of the inferior capsular ligamentous complex to the stump of the coraco-acromial ligament reconstructs the capsulolabral anatomy.

Sling	**What can I do from day 1?**	**Restrictions?**	**Commence strengthening?**
2-3 weeks	Active assisted/supported mobilisation within safe zone*	Forced external rotation	Dependent on dynamic control ROM and pain level-usually 6 weeks

* *Safe zone will be stipulated by the Surgeon in the operation notes. Generally limit mobilisation to anterior to the scapula plane below 120° elevation and 50% of ER (compared with other side) respecting pain and movement pattern.*

Pre-operatively

- Teach active assisted mobilisation programme
- Advice re postural awareness / movement pattern correction
- Patient education regarding procedure and expectations – patients often have minimal pain early after this procedure. It is essential to educate them regarding necessary restrictions despite the lack of symptomology.

Factors that may affect progression rate;

- Pre-operative status
- Age
- Laxity

- Revision surgery vs. primary
- Kinetic chain (previous injury)

Treatment Note: *Note that in mini-open and open Latarjet procedures subscapularis is split to expose the joint (and then repaired). This can result in muscle stiffness and proprioceptive inhibition of subscapularis. In the early stages gentle soft tissue massage and inhibitory techniques can be useful to minimise the impact of this. Similarly, once strengthening commences it is important to specifically monitor and incorporate subscapularis strengthening (functionally relevant).*

Acute phase (0-4 weeks[1])

[1] Timescales are an outline only- essentially patient's dynamic control and passive range of movement determine progression rate after the 6-week mark.

Sling

This is worn for 2-3 weeks depending on pain and passive range of movement. The sling is purely for pain relief and to protect the repair and avoid the arm being knocked into risk positions. The sling is removed to allow axillary hygiene and when the patient is doing their exercises. It should be worn at night.

Revision cases may also be required to wear the sling for up to 3 weeks. In patients who have higher pain levels and, or lack neutral rotation at 2 weeks post surgery it is important to remove the sling at this stage.

Goals;

- Protect the integrity of the bone transfer
- Optimise tissue healing
- Diminish pain and inflammation
- Prevent negative effects of immobilisation
- Promote improved proprioceptive acuity
- Promote optimal recruitment dynamic stabilisers
- Prevent compensatory movement patterns that may compromise recovery

Rehabilitation;

It is important to establish the safe zone (i.e. that which doesn't compromise the surgical repair) for mobilisation before commencing the active assisted exercise programme. Generally following Latarjet this is anterior to the scapula plane and below 120° elevation (NB this is dependent on pain and end feel)

Treatment Note*:*
NB. The following are considerations for exercise inclusion however in reality these can be incorporated in 2-4 key exercises. Clinical reasoning of the patient's key issues will inform which factors are priorities. It is important not to prescribe too many exercises as this has been shown to impact adherence.

Avoid:

X Combined abduction/external rotation
X Forced end range mobilisation especially external rotation

- Elbow, wrist and hand exercises
- Closed kinetic chain /proprioception exercises (low load and ensuring scapula congruent on chest wall)
- Active assisted mobilisation within safe zone
- Cuff facilitation exercises within safe zone
- Scapula mobilisation/facilitation exercises
- Kinetic chain exercises (with arm in sling) including thoracic rotation
- Cryotherapy if necessary

Criteria for progression;

- Range of movement- note patient requires > 60% rotational range of movement before introducing active through range cuff facilitation work above 90º (i.e. against resistance).
- Absence of significant muscle patterning
- Compliance with exercises

Intermediate stage (4-10 weeks)

Avoid:

X Forced stretching into combined abduction/external rotation
X Forced end range external rotation

Goals:

- Protect integrity bone transfer
- Restoration functional range of movement
- Cuff recruitment and scapula control through range (ensure optimal subscapularis function)
- Enhance proprioceptive acuity
- Prevent compensatory movement patterns that may compromise recovery

Rehabilitation;

- Mobilisation capsular restriction if required (respecting procedure)
- Rhythmic stabilisations cuff/scapula
- Progress cuff and scapula recruitment through range
- Incorporate specific subscapularis re-education if required
- Progress kinetic chain integration
- Increase functional emphasis movement pattern correction
- Closed kinetic chain work
- Preparatory & reactive stabilisation exercises

At this stage it is essential that any exercise prescription ensures that the patient is able to maintain good cuff and scapula control i.e. there should be no evidence of scapula winging.

Criteria for progression;

- Pain-free functional range of movement
- Good sequential activation through kinetic chain
- No muscle patterning under load

Late stage (8-16 weeks*)

Aims:

- Restore full active range of movement
- Enhance neuromuscular control
- Optimise preparatory and reactive stabilisation
- Restore optimal cuff and scapula control through range and under load
- Optimise function specific power, strength and endurance
- Transference movement pattern correction and cuff/scapula control to functional task

Rehabilitation:

- Proprioceptive neuromuscular facilitation exercises through range and incorporated with kinetic chain
- Function specific plyo-metrics
- Closed kinetic chain exercises
- Function specific strengthening and endurance exercises ensuring glenohumeral joint and scapula control are maintained
- Preparatory and reactive stabilisation drills in risk positions
- Function specific kinetic chain strength and endurance

Expected Outcomes

These reported outcomes are derived from a review of recent literature of Latarjet procedure. The quality of literature is insufficient to draw an unequivocal conclusion as to what the expected course of outcome following the Latarjet procedure is, however the findings do suggest some typical patterns in recovery. All scores represent the mean from the data reported in the literature reviewed at an average of 1 year.

OUTCOME	Primary Elective procedures		
ROM	Flexion	Abduction	External Rotation
Total	Full ^{o}	Full ^{o}	Loss of up to 11.5^{o} (Vs unaffected side)
Risk of recurrent anterior shoulder instability	0-11.6% (3.4-5% require revision surgery)		
Pain Scores	? relevant outcome measure for Latarjet		
Patient Satisfaction	Good – Excellent in 90%		
Return to Sport	3-6 months depending on strength recovery		