Lateral Ankle Ligament Brostrum Repair

Surgeons: Mr KP Meda, MR H Prem, Mr J McKenzie

Surgical technique:

- Primary Anatomical (non-augmented) repair. Carried out by reattaching torn ligaments in order to regain lateral ankle stability. A Brostrom repair is the common technique used in an anatomical repair

Expected outcome:

- Improved function / mobility
- Improved pain relief, with decreased analgesic requirements
- Improved ankle-hindfoot complex stability
- Decreased requirement for orthotics
- Return to full sporting activity
- Full recovery may take up to twelve months

Physiotherapy: milestone driven to encourage clinical reasoning

Please consult Operative notes for any variations in rehabilitation

Initial rehabilitation phase:
0-6 weeks

Goals:

- To be safely and independently mobile with appropriate walking aid, adhering to weight bearing status
- To be independent with home exercise programme as appropriate
- To understand self management / monitoring, e.g. skin sensation, colour, swelling, temperature, etc

Restrictions:

Ensure that weight bearing restrictions are adhered to.

Primary Anatomical Repair:

Treatment:

- **Pain-relief**: Ensure adequate analgesia
- **Elevation:** ensure elevating leg with foot higher than waist for 14 days.
- **Exercises**: teach circulatory exercises/ gentle toe mobilisations.
- **Education**: teach how to monitor sensation, colour, circulation, temperature, swelling, and advise what to do if concerned
- **Mobility**: NWB in POP for 2/52 on D/C. Ensure patient independent with transfers and mobility, including stairs if necessary.

On discharge from ward:

- Independent and safe mobilising, including stairs if appropriate
- Independent with transfers
- Independent and safe with home exercise programme / monitoring
- Refer for outpatient Physiotherapy to start in 2 weeks time.

Milestones to progress to at 2 weeks:

- Clinic review: check healing/ wound inspection.
- Change POP to Aircast boot at 2 weeks.

Physiotherapy:

- Physiotherapy to commence at 2 weeks, progress from NWB to FWB (depending on clinic review).
- Adequate analgesia
- Allow 10 degrees dorsiflexion and 20 plantarflexion for 6 weeks.
- Avoid inversion/eversion for 6/52.
- No balance exercises until grade 4 muscle strength into eversion.

Recovery rehabilitation phase:
6 weeks to 12 weeks

Goals:

- To be independently mobile out of Air Stirrup
- To achieve full range of movement
- Muscle strength: eversion grade 4 or 5 on Oxford scale
- Optimise normal movement

Restrictions:

- No balance exercises until eversion grade 4 or 5 on Oxford scale achieved
- Do not over stretch transfer.
- No impact exercise; i.e. jogging, aerobics

Treatment:

- **Pain relief**
- **Advice / Education**
- **Posture advice / education**
- **Mobility:** ensure safely and independently without walking aid
- **Gait Re-education**
- **Wean out of Aircast boot** and into normal footwear

Exercises:

- Active assisted range of movement (AAROM)
- Active range of movement (AROM)
- Resisted inversion and eversion exercises with progression
- Encourage isolation of evertors without overuse of other muscles. Biofeedback likely to be useful
- Strengthening exercises of other muscle groups as appropriate
- Core stability work
- Exercises to teach patient to find and maintain sub-talar neutral.
- Balance / proprioception work once appropriate
- Stretches of tight structures as appropriate (e.g. Achilles Tendon)
- Review lower limb biomechanics. Address issues as appropriate
- Swelling Management

Manual Therapy:

- Soft tissue techniques as appropriate
- Joint mobilisations as appropriate particularly sub-talar joint.
- **Monitor** sensation, swelling, colour, temperature, etc
- **Orthotics** if required via surgical team
- **Hydrotherapy** if appropriate
- **Pacing advice** as appropriate

Milestones to progress to next phase:

- Muscle strength: eversion grade 4 or 5 on Oxford scale
- Full range of movement
- Mobilising out of aircast boot
- Neutral foot position when weight bearing / mobilising

Failure to meet milestones:

- Refer back to team / Discuss with team
- Continue with outpatient physiotherapy if still progressing

Intermediate rehabilitation phase:
12 weeks to 6 months

Goals:

- Independently mobile unaided
- Optimise normal movement

Treatment

Further progression of the above treatment:

- **Pain relief**
- **Advice / Education**
- **Posture advice / education**
- **Mobility:** Progression of mobility and function
- **Gait Re-education**

Exercises:

- Range of movement
- Progress strengthening of evertors.
- Core stability work
- Balance / proprioception work i.e.; use of wobble boards, trampet, gym ball. Dyna-cushion.
- Stretches of tight structures as appropriate (e.g. Achilles Tendon), not of transfer.
- Review lower limb biomechanics. Address issues as appropriate.
- Sports specific rehabilitation

Manual Therapy:

- Soft tissue techniques as appropriate
- Joint mobilisations as appropriate ensuring awareness of those which may be fused and therefore not appropriate to mobilise
- **Monitor** sensation, swelling, colour, temperature, etc
- **Orthotics** if required via surgical team
- **Hydrotherapy** if appropriate
- **Pacing advice** as appropriate

Milestones to progress to next phase:

- Independently mobile unaided
- Muscle strength: eversion grade 5 on Oxford scale
- Returned to low-impact activity/sports

Failure to meet milestones:

- Refer back to team / Discuss with team
- Continue with outpatient physiotherapy if still progressing

FINAL REHABILITATION PHASE:
6 months to 1 year

Goals:

- Return to high impact sports if set as patient goal
- Normal evertor activity
- Single leg stand 10 seconds, eyes open and closed
- To be able to do multiple heel raise
- Establish long term maintenance programme

Treatment:

- **Mobility / function:** Progression of mobility and function, increasing dynamic control with specific training to functional goals
- **Gait Re-education**

Exercises:

- Sports specific/functional exercises.
- Address any issue's raised from patient after return to activity
- Pacing advice

Milestones for discharge

- Independently mobile unaided
- Good proprioceptive control on single leg stand on operated limb.
- Return to normal functional level
- Return to sports if set as patient goal
- Grade 5 Eversion strength

Failure to progress

If a patient is failing to progress, then consider the following:

POSSIBLE PROBLEM	ACTION
Swelling	Ensure elevating leg regularly Use ice as appropriate if normal skin sensation and no contraindications Decrease amount of time on feet Pacing Use walking aids Circulatory exercises If decreases overnight, monitor closely If does not decrease overnight, refer back to surgical team or to GP
Pain	Decrease activity Ensure adequate analgesia Elevate regularly Decrease weight bearing and use walking aids as appropriate Pacing Modify exercise programme as appropriate If persists, refer back to surgical team or to GP
Breakdown of Wound e.g. inflammation, bleeding, infection	Refer to surgical team or to GP
Recurrent Instability	Refer back to surgical team Ensure exercises not too advanced for patient Address core stability Liaise with podiatrist/orthotics re, footwear
Numbness/altered sensation	Review immediate post-operative status if possible Ensure swelling under control If new onset or increasing refer back to surgical team or GP If static, monitor closely, but inform surgical team and refer back if deteriorates or if concerned

Summary of evidence for physiotherapy guidelines

A comprehensive literature search was carried out to identify research relating to rehabilitation for ankle instability and surgery for recurrent ankle instability and subsequent rehabilitation. After reviewing the articles and information, the physiotherapy guidelines were produced on the best available evidence.

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