DR BOB JANG

Orthopaedic Surgeon

Patient Name _____

Follow-Up Appointment: _____

SCAPHOLUNATE LIGAMENT INJURIES

The scapholunate ligament is commonly injured in the sprained wrist. The ligament holds two carpal bones together (scaphoid and the lunate). It is an important structure which allows painless and functional movement of the wrist.

The common mechanism of injury is a fall onto an outstretched hand. The ligament sprains or ruptures when the wrist is bent backwards or into an unusual position.

In other instances, the scapholunate ligament can undergo degenerative tearing in the elderly.

Patients may present with wrist swelling, pain, bruising, limited range of motion, clicking or crunching and weakness in grip. If not diagnosed at the time of the injury, the symptoms may worsen and progress over time. Some patients only notice the problem many years after the index injury.

DIAGNOSIS

The diagnosis of the scapholunate injury is difficult. A focused history, examination and initial xrays are required. It can occur in 10-30% of scaphoid fractures. It can also occur in distal radius fractures (Chauffeur fracture). With complete tears, the scaphoid and lunate bones can start the spread apart and form a gap which can be seen on xray. The carpal bones may twist out of position in relation to one another (DISI deformity: dorsal intercalated segment instability). An MRI can be used sometimes to help visualize the torn ligaments. In some instances Dr Jang may recommend a wrist arthroscopy (key hole surgery) to assess the ligament before a decision is made to stabilise/fix the ligament with suture anchors or perform a

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ligament reconstruction with anchors/synthetic suture tape/tendon graft from your wrist (ECRB tendon).

NON OPERATIVE VS OPERATIVE TREATMENT

The scapholunate ligament tear doesn't heal on its own. If there's a full thickness tear with a gap on xray (increased scapholunate interval) you may develop progressive wrist arthritis over time (SLAC – scapholunate advanced collapse). Treatment for a SLAC wrist is focused on improving function and pain which may involve fusing carpal bones or your whole wrist joint. If there's an acute partial ligament sprain/tear and your carpal bones are well aligned you may have your wrist treated non operatively in a cast or splint for 6 weeks to allow the soft tissues to scar up and allow the inflammation settle down.

Operatively, acute scapholunate ligament injury treatment is focused on repairing the ligament with mini sutures anchors and stabilizing the carpal bones whilst the ligament heals. Stabilisation may be performed using wires which will be buried in bone. These wires will need to be removed under another anaesthetic 6 to 8 weeks after the primary operation. These are significant injuries that will require intensive hand therapy after a prolonged period of immobilization.

Chronic scapholunate ligament injuries require wrist arthroscopy to assess the cartilage quality and degree of instability. Some cases have significant DISI deformity and advanced cartilage wear (arthritis) and won't be suitable for a reconstruction. A partial or complete wrist fusion or proximal row carpectomy may be indicated in this group of patients. A fusion means biologically linked two or more bones together to permanently prevent them from grinding/moving against one another. Dr Jang will discuss the best option for you and your expectations during your consultation.

SCAPHOLUNATE REPAIR

Once the decision is made to operatively manage your acute scapholunate ligament injury, you will be taken to theatre for a general anaesthetic. Your anaesthetic will discuss the option of a nerve block to temporarily numb your wrist and arm for pain relief post operatively. A wrist arthroscopy is performed first. Once the decision is made to proceed with a ligament repair and stabilization, a 5-7cm incision will be made at the back of your wrist. Your tendons will be protected. The wrist capsule is opened. Wires are used to bend the scaphoid and lunate back into correct alignment. Suture anchors are buried into the carpal bones and the ligament is

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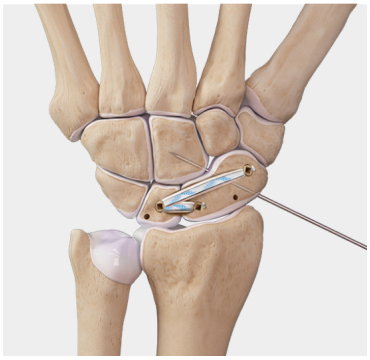
sutured together. To help stabilize the carpal bones to allow the ligament to heal securely, wires may be inserted across your scaphoid/lunate and or the capitate. Ligaments generally take 3 months to adequately scar into bone (Sharpey's fibres integrate into bone 80-85% by 3 months). The wires are removed at 6 to 8 weeks in theatres to allow unimpeded wrist range of motion exercises. You will need to go into a wrist thermoplastic splint for a period of time (generally from week 1 once you're out of plaster) and until 3 months post operatively.

SCAPHOLUNATE RECONSTRUCTION



If your scapholunate ligament tear is chronic, you will have an xray and MRI pre operatively to assess to quality of your cartilage/chondral surfaces, degree of intercarpal instability and DISI deformity. You may be offered a wrist arthroscopy and scapholunate reconstruction if Dr Jang deems your cartilage surfaces viable for a reconstruction. You will be admitted into hospital for day surgery (possibly an overnight admission if required) and receive a general anaesthetic and nerve block. Wrist arthroscopy (key hole) surgery is performed to assess your cartilage surfaces at the wrist and midcarpal spaces to ensure a reconstruction is the most appropriate procedure to give you a pain free wrist with functional movement. A longitudinal incision on the back of your wrist is made, tendons protected and your wrist capsule is opened. The scaphoid and lunate are twisted back into the correct alignment, held in place with wires, and plastic anchors are inserted into the bone held in place with synthetic suture tape (with or without a tendon graft from your wrist). If your deformity was severe, the wires may be left in place under your skin for 6 to 8 weeks to help support the ligament reconstruction until it becomes strong enough to hold on its own. These wires will need to be removed at a later date. You will be placed into a temporary backslab plaster for one to two weeks to allow the wounds to heal and will see a Hand Therapist for a wound review and be placed into a thermoplastic wrist splint. You will have limited wrist movement for the first 2 months and will progressively move your wrist more over time as the ligament reconstruction matures.

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SCAPHOLUNATE LIGAMENT REPAIR/RECONSTRUCTION POST OPERATIVE PROTOCOL

Days 0-14

- Keep your limb elevated
- Keep your plaster dry. You may shower provided you cover your plaster with a plastic bag.
- Make a fist 5 to 6 times an hour whilst you're awake. Pinch your thumb to your index/middle/ring/little finger throughout the day.
- You may use your hand for writing, typing, using your smartphone, getting dressed and brushing your teeth.
- Strictly no lifting
- Please commence Vitamin C 500mg tablets daily for 50 days as this can reduce the incidence of chronic wrist and hand pain after a fracture.
- Simple analgesics such as Paracetamol and Ibuprofen are suitable for pain management.
- You can have a script for an opioid as required in the first 2 weeks post surgery.

Day 10 to 14

- Post operative appointment for wound check and change to wrist splint or fiberglass cast.
- Your wound will have healed by this stage and you can start hand washing and showering. This is the only time you can come out of your splint.
- Referral to Hand Therapist to make a thermoplastic wrist splint, scar management, and densensitisation. No wrist exercises yet.

Weeks 2 to 6

Wrist splint to remain on at all times except when hand washing, showering.
Gentle wrist EXTENSION and FLEXION only. No radial/ulnar deviation until 6 weeks.
Strictly no lifting or pushing at this stage.

Week 6

Appointment to see Dr Jang at the 6 week post surgery mark for a XRay check of your scapholunate stabilisation and position of wires. Aim to book on for removal of wires if required in theatres after this visit.

Weeks 6 to 12

Come out of wrist splint for exercises.
Continue working on range of motion.
No lifting. No manual work.
NO contact sports at this stage.

Week 12+

Progressive strengthening under hand therapy guidance. Progressive weight bearing/lifting/loading. Gentle loading permitted at 3-4 months post operatively. Aim full weight bearing, loading and sports by 5 to 6 months post operatively.

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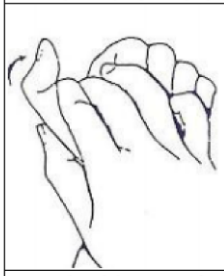
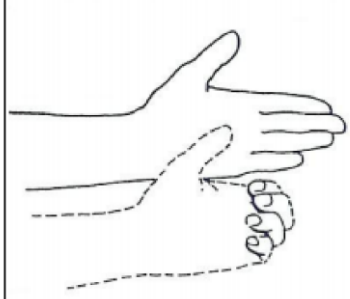
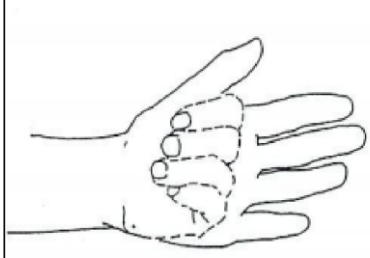
AROM Thumb IP Flexion - Blocking	AROM PIP Flexion Blocking	AROM DIP Flex -Blocking
		
Brace thumb leaving tip free. Bend as far as possible, then straighten.	Pinch bottom knuckle of finger of to prevent bending. Actively bend middle knuckle until stretch is felt.	Pinch middle knuckle of finger of one hand to prevent bending. Bend end knuckle until stretch is felt.
10 repetitions 1x/day	10 repetitions each finger 1x/day	10 repetitions each finger 1x/day

Flexor Tendon Glide - Active Hook Fist	Flexor Tendon Glide - Active Straight Fist	Finger Opposition
		
With fingers and knuckles straight, bend middle and tip joints. Keep large knuckles straight.	Start with fingers straight. Bend knuckles and middle joints. Keep fingertips straight to touch the base of your palm.	Actively touch thumb to each fingertip. Start with index finger and proceed toward little finger. Move slowly at first, then more rapidly as motion and coordination improve. Be sure to touch each fingertip.
10 repetitions 1x/day	10 repetitions 1x/day	10 repetitions 1x/day

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