International Journal of Environmental Sciences
ISSN: 2229-7359
Vol. 11 No. 19s, 2025
https://theaspd.com/index.php

Case Paper Of Management Of Skier's Thumb With Stener Lesion Using Suture Anchor

Dr vishal Patil[1] , Dr Omkar Shinde[2], Dr Omkar Shinde*[3], Dr Harkirat Singh[4]
[1]MS, Professor Orthopedics , Dr D Y Patil Medical College ,Hospital and Research Centre, Dr. D Y Patil Vidyapeeth, Pune, Maharashtra, India.
[2]MBBS, Orthopedics Resident, Dr D Y Patil Medical College, Hospital and Research Centre, Dr. D Y Patil Vidyapeeth, Pune, Maharashtra, India
[3*]MBBS, Orthopedics Resident , Dr D Y Patil Medical College ,Hospital and Research Centre, Dr. D Y Patil Vidyapeeth, Pune, Maharashtra, India.
[4]MBBS, Orthopedics Resident, Dr D Y Patil Medical College, Hospital and Research Centre, Dr. D Y Patil Vidyapeeth, Pune, Maharashtra, India
***Corresponding author:**
Dr Omkar Shinde

Abstract:
Introduction: *Skier's thumb, also known as gamekeeper's thumb, is an injury of the ulnar collateral ligament (UCL) of the metacarpophalangeal (MCP) joint of the thumb. It commonly results from a forced hyperabduction and hyperextension injury. A complete UCL rupture with a Stener lesion often necessitates surgical repair to restore stability and function.*
Case Report:
A 27-year-old male engineer sustained a left thumb injury while playing cricket. He experienced immediate pain, swelling, and instability following a hyperabduction and hyperextension mechanism. Clinical examination revealed tenderness, ecchymosis, and increased laxity on valgus stress testing, confirming UCL rupture. Radiographic evaluation ruled out fractures, and surgical repair was performed using a suture anchor technique. Intraoperatively, a Stener lesion was identified and addressed. Postoperative management included immobilization in a thumb spica cast followed by a structured rehabilitation program. The patient achieved full functional recovery, with a Kapandji score of 10/10 at four weeks postoperatively
Conclusion:*Early diagnosis and surgical repair of complete UCL ruptures with Stener lesions are crucial for restoring thumb stability and function. The suture anchor repair technique provides excellent outcomes, enabling early rehabilitation and return to activity. Structured postoperative rehabilitation is essential for optimal recovery, minimizing complications, and ensuring a high rate of successful functional restoration.*

INTRODUCTION:

Skiers thumb also known as game keepers thumb, refers to an injury of ulnar collateral ligament (UCL)of metacarpophalngeal (MCP) joint of thumb. It commonly results from forced hyperabduction and hyperextension injury of thumb. Complete rupture of the UCL, particularly stener lesion, often requires surgical repair to restore stability and function. This case describes the successful surgical repair of complete UCL rupture with stener lesion in young, active patient.

Case report:

27/male engineer by occupation presented with pain and weakness in left thumb following trauma by cricket ball. He fell forward while gripping ball causing thumb to be forcefully abducted and hyperextented. he experienced immediate pain, swelling and instability. Over next few hours, he noted progressive bruising and inability to grasp object firmly. Patient had no prior history of trauma, thumb instability, or significant medical comorbidities

On clinical examination patient was alert, co-operative with stable vital signs with no associated injuries were noted. On local examination of thumb swelling and ecchymosis over ulnar side of first MCP noted with no palpable bony crepitus. Patient experienced pain on active and passive ROM. Weakness in thumb apposition and pinch grip were present. on Valgus stress test with 30 degrees flexion at MCP, increased laxity, no firm end point noted which indicates UCL rupture. On neurovascular examination, sensation intact over radial and ulnar aspects of the thumb. Capillary refill time <2 seconds.

Valgus stress view on x-ray of thumb reveal laxity with no fractures of the first metacarpal or proximal phalanx as shown in figure A . No avulsion fragments at UCL insertion with preserved MCP joint alignment.
Informed consent was obtained, including discussion of risks, benefits and Preoperative blood work and anesthesia assessment were completed. The patient was advised to avoid NSAIDs preoperatively to prevent delayed healing. Patient posted for surgical repair after fitness from anesthesia.

FIGURE A showing valgus stress view of bilateral thumb suggesting injury to left ulnar collateral ligament.
Procedure:
Patient taken in supine position with left upper limb on side arm board under regional brachial plexus block with mild sedation.
Clinical examination revealed instability and this was confirmed under anesthesia. They are unstable in full extension and 30-40 degrees of flexion. Marking of incision done as shown in figure B.
longitudinal incision was made on ulna mid axial side of 1st MCP joint followed by blunt dissection through the fat was performed. During the deep dissection superficial cutaneous nerves were retracted exposing complete rupture with proximal retraction of ulnar collateral ligament with intact volar plate. Tear was identified and exposed. Ulnar collateral ligament had subluxed on superficial surface of adductor aponeurosis and with interposed adductor aponeurosis the healing of ulnar collateral ligament might get delayed therefore longitudinal incision was taken on adductor aponeurosis from proximal to distal to exposed the foot print at the base of proximal phalanx.
then thumb was supinated to reveal insertional footprint which was in lower half of proximal phalanx where the ligament runs obliquely. Ligament was then mobilised and debrided the footprint by 15 no blade which helps to induce some fibrosis and bleeding leading to repair. Hole was made with 1.0 k wire at the foot print (base of proximal phalanx)
Anchor was inserted through that k wire hole as shown in figure C and stability of anchor was checked then proximal part of ulnar collateral ligament was taken with 2-0 fibre wire.
Two simple sutures passed through the ligament and ligament was then reduced by pulling distally and volarly down to its footprint on proximal phalanx with skin hook then it was sutured back down to the bone. Final Stability was checked in full extension and flexion. Incised adductor aponeurosis was repaired with running locked suture with 4-0 PDS and knots were buried
Stability was checked again after skin closure in full extension and flexion. Thumb spica cast was given along radial border for 4 weeks. In post operative period pain medication, antibioitic prophylaxis for 24 hours with hand elevation to minimize swelling was given. Patient followed up at 4, 8, 12 weeks with removal of cast and initiation of controlled ROM exercises at 4 week , Gradual introduction of strengthening exercises(grip and pinch) at 8 week , Proprioception and functional training at 12 week
Flexion and extension started on pod 10 with radial sided support

Patient achieved kapandji score of 10/10 at 4 weeks post operatively
Patient could check for their own stability with lateral pinch grip which confirms significant stability has been restored.

FIGURE B showing incision marking on ulnar aspect of thumb.

FIGURE C showing insertion of anchor at proximal part of proximal phalanx.

Surgical techniques and considerations:

1. Suture Anchor Repair (Preferred Technique)[7]

Suture anchors fix the ligament to the proximal phalanx, restoring native tension.
Allows early rehabilitation due to strong fixation.

2. Bone Tunnel Technique

The ligament is reattached through drill holes in the proximal phalanx.
Provides secure fixation but requires longer immobilization.

3. Tendon Graft Reconstruction (For Chronic Cases)[8]

Used in chronic UCL deficiency with ligament attrition.
Palmaris longus or plantaris tendon graft is used to reconstruct the ligament.
Post operative rehabilitation plan includes:
0–4 Weeks: Thumb spica cast in mild flexion. No movement allowed. 4–
6 Weeks: Controlled ROM exercises initiated.
6–8 Weeks: Progressive grip and pinch strengthening exercises. 8–
12 Weeks: Functional rehabilitation (proprioception training).
12+ Weeks: Return to sports and heavy work with protective taping.
Early mobilization reduces joint stiffness, while avoiding valgus stress prevents repair failure.

Prognosis and functional outcomes:
With timely surgical repair and structured rehabilitation, most patients achieve:

- 90–100% restoration of grip and pinch strength.
- Stable MCP joint without residual instability.
- Return to sports by 12–16 weeks.

Long-term studies show >90% of patients regain full hand function, with a low rate of recurrent instability. Well executed repair and gradual rehabilitation minimize complications[9].

CONCLUSION:

This case highlights the importance of early diagnosis and surgical repair in Skier's thumb with a Stener lesion. The suture anchor repair technique provides excellent outcomes, allowing the patient to return to skiing without residual instability. With potential complications such as joint stiffness, recurrent instability, post traumatic arthritis, radial nerve injury(rare).
A structured rehabilitation program is vital in preventing stiffness and optimizing recovery. With proper management, long-term complications are minimal, and most patients achieve near-normal hand function.

REFERENCES:

1. Heyman P, Gelberman RH. Thumb Ulnar Collateral Ligament Injuries: Diagnosis and Treatment. J Hand Surg Am. 2020;45(3):234-240.
2. Smith RJ. Surgical Management of Ulnar Collateral Ligament Injuries. Clin Orthop Relat Res. 1981;163:50-56.
3. Fitzgerald BT, Hofmeister EP. Radiographic Evaluation of Skier's Thumb. Am J Sports Med. 2005;33(7):1037-1043.
4. Campbell R, Daunt N. Dynamic Sonographic Evaluation of UCL Injuries. J Ultrasound Med. 2013;32(10):1837-1842.
5. Rosenstadt BE, Tomaino MM, Miller RJ. MRI Diagnosis of Stener Lesion. J Bone Joint Surg Am. 1998;80(10):1320-1325.
6. McKeon KE, Wright TW. Skier's Thumb: A Review. J Am Acad Orthop Surg. 2011;19(5):266-275.
7. Bowers DL, Hurst LN. UCL Repair Techniques: A Comparative Study. J Hand Surg Eur Vol. 2015;40(7):695-701.
8. Green DP. Operative Hand Surgery. 7th ed. Philadelphia: Elsevier; 2018.
9. Manske PR. Rehabilitation of Thumb UCL Injuries. Hand Clin. 2009;25(4):453-460.