



ORTHO NEWSCAST



Volume 6 | Issue 39 | 2025

Dear Doctor,

Greetings from Micro Labs. We are happy to bring you “Ortho Newscast” which contains latest and interesting news in the field of Orthopaedics.

This issue contains

- **Outcomes of 2.7 mm Semitubular Hook Plate for Internal Fixation of Unstable Metaphyseal Ulnar Fractures**
- **Comparison between oblique lateral interbody fusion (OLIF) with posterior fixation and posterior lumbar interbody fusion (PLIF) with fixation for lumbosacral curve-driven degenerative lumbar scoliosis**
- **Outcome and complications of open reduction, internal fixation (ORIF) and total hip arthroplasty (THA) in acetabular fractures**
- **Isolated Dislocation of the Fibular Sesamoid in the Great Toe: A Rare and Underrecognized Condition**

Should you require any specific article or medical information, please feel free to contact us at [**medicalservices@microlabs.in**](mailto:medicalservices@microlabs.in)

Looking forward to your valuable feedback

Best Regards,

Medical Team, Micro Labs Limited



Outcomes of 2.7 mm Semitubular Hook Plate for Internal Fixation of Unstable Metaphyseal Ulnar Fractures

INTRODUCTION

A metaphyseal distal ulnar fracture refers to a fracture that occurred within 5 cm of the ulnar head's dome.¹ Distal ulnar fractures are relatively rare and typically affect the ulnar styloid.² Distal radius fractures associated with metaphyseal ulnar fractures occur in 5%–6% of cases, particularly in elderly patients with osteoporotic bone fractures. Isolated fractures can result from direct trauma to the ulnar side of the wrist. The distal ulna serves as a fixed point around which the hand and radius rotate during various daily activities. The ulnar head is crucial for stabilizing the distal radioulnar joint (DRUJ) and the triangular fibrocartilage complex (TFCC) of the wrist. Inadequate treatment of distal ulnar fractures can lead to limited forearm rotation, ongoing pain, DRUJ instability, and arthritis. Several fixation methods have been proposed, including tension band wiring, mini condylar blade plates, locking plates, and headless compression screws. Recently, the anatomical distal ulnar hook plate has gained popularity. However, no fixation method has proven superior, and issues such as cost, and availability still highlight the need for a more cost-effective, stable, and accessible fixation solution.³ So, this study evaluated the results of using a 2.7 mm semitubular hook plate for the internal fixation of unstable metaphyseal ulnar fractures.



DISTAL ULNAR FRACTURES

For the internal fixation of unstable distal ulnar fractures that are isolated or linked to distal radius fractures, the 2.7 mm semitubular hook plate is an effective option with a satisfactory union time, functional outcome, and range of motion with minimal complications.

METHODS

This prospective case series involved 30 consecutive patients with recent unstable distal ulnar fractures. Each patient underwent open reduction and internal fixation using a 2.7 mm semitubular hook plate. Follow-up assessments included monitoring the time to union, range of motion, pain levels measured with the Visual Analog Scale (VAS), and radiological and functional outcomes using the Quick Disabilities of the Arm, Shoulder, and Hand (DASH) score and Mayo wrist score after 12 months.

RESULTS



The average age of the patients was 45.3 ± 10 years, with 18 males (60%) and 12 females (40%). Additionally, 16 patients (53.33%) had associated distal radius fractures. Three fractures were classified as type A2.1 (10%), nine as type A2.2 (30%), eight as type A2.3 (26.67%), and ten as type A3 (33.33%) based on the AO categorization of distal ulnar fractures. All fractures healed with an average union time of 9 ± 1.4 weeks. The average supination was $81.4 \pm 3.5^\circ$, pronation was $81.3 \pm 4.5^\circ$, flexion was $71.7 \pm 3.6^\circ$, and extension was $81.7 \pm 3.4^\circ$. The mean VAS score was 1.1 ± 1 points, the mean DASH score was 9.3 ± 5.6 points, and the mean Mayo wrist score was 88.5 ± 7.2 points. Of the patients, 10 had good results (33.33%), 3 had adequate results (10%), and 17 had exceptional results (56.67%). The mean radial height increased from 10.13 ± 2.8 mm preoperatively to 12.2 ± 0.96 mm postoperatively, which was statistically significant. The mean radial inclination improved from $17.6 \pm 7.18^\circ$ before surgery to $23.1 \pm 1.95^\circ$ after surgery, and the ulna variance changed from $+0.8 \pm 1.86$ mm preoperatively to $+0.36 \pm 0.96$ mm postoperatively (Table 1).

Table 1: Radiographic evaluation preoperatively and at 12 months postoperatively

	Preoperative			12 months postoperative			p-value
	Mean	SD	Range	Mean	SD	Range	
Radial height	10.13 mm	2.8	3–14	12.2 mm	0.96	10–14	0.04*
Radial inclination	17.6°	7.18	3–25	23.1°	± 1.95	20–27	0.87
Ulnar variance	+0.8 mm	± 1.86	–4–+2.3	+0.36 mm	± 0.96	–2–+1.7	0.3

DISCUSSION

Anatomically locked distal ulnar plates have been used more frequently in recent years. Lee et al. studied the outcomes of distal ulnar locking compression plates (LCP) in 25 patients with an average age of 62.3 years. All patients achieved bony union with a mean time of 12.5 weeks, demonstrating a good range of motion. The average modified Mayo wrist score was 87 points, and the average Quick DASH score was 14 points.⁴ In a retrospective study, 17 patients with a mean age of 58.9 years were included, all of whom had an associated distal radius fracture. The distal ulna was treated with a distal ulnar LCP. The average follow-up duration was 15 months, and all fractures achieved bony union with a mean healing time of 11.7 weeks, showing very good range of motion and radiographic outcomes. The average DASH score was 11 points, and based on the modified Sarmiento's wrist score, 6 patients had excellent results, while 11 patients had good results.⁵

CONCLUSION

The 2.7 mm semitubular hook plate proves to be an effective option for the internal fixation of unstable distal ulnar fractures, whether isolated or in combination with distal radius fractures. It offers favorable union times, functional outcomes, and range of motion with minimal complications. This plate serves as a viable alternative to anatomical LCP, providing comparable results with greater availability and lower cost.



1. Kim JK, Kim JO, Koh YD. Management of Distal Ulnar Fracture Combined with Distal Radius Fracture. J Hand Surg Asian Pac Vol. 2016 Jun;21(2):155-60.
2. Moloney M, Farnebo S, Adolfsson L. Incidence of distal ulna fractures in a Swedish county: 74/100,000 person-years, most of them treated non-operatively. Acta Orthop. 2020 Feb;91(1):104-108.
3. Abulsoud MI et al. Internal Fixation for Unstable Distal Ulnar Fractures by 2.7 mm Semitubular Hook Plate. Advances in Orthopedics. 2024;2024(1):5663025.
4. Lee SK, Kim KJ, Park JS, Choy WS. Distal ulna hook plate fixation for unstable distal ulna fracture associated with distal radius fracture. Orthopedics. 2012 Sep;35(9):e1358-64.
5. Han SH, Hong IT, Kim WH. LCP distal ulna plate fixation of irreducible or unstable distal ulna fractures associated with distal radius fracture. Eur J Orthop Surg Traumatol. 2014 Dec;24(8):1407-13.

Comparison between oblique lateral interbody fusion (OLIF) with posterior fixation and posterior lumbar interbody fusion (PLIF) with fixation for lumbosacral curve-driven degenerative lumbar scoliosis

INTRODUCTION

Degenerative lumbar scoliosis (DLS) is a spinal deformity that develops due to lumbar degeneration after skeletal maturity, typically occurring around age 50 and worsening with age. For patients with neurological symptoms or significant functional limitations, corrective surgery is often preferred over conservative treatment. However, the high incidence of postoperative coronal imbalance, ranging from 20.7% to 35.6%, may not always align with patient expectations.¹ The absence of

Compared to standard posterior surgery, two-stage OLIF surgery with posterior fixation is a more effective surgical strategy for type 2 DLS because it reduces surgical fusion segments, causes less stress and bleeding, and successfully prevents postoperative coronal plane decompensation.

appropriate classification and surgical approaches for spinal degenerative coronal imbalance contributes to the issue. The newly developed distance-guided coronal classification method is more effective for surgical planning. DLS has now been categorized into type 1 (thoracolumbar curve-driven DLS) and type 2 (lumbosacral curve-driven DLS).² It has been reported that patients with type 2 DLS who undergo conventional posterior surgery may develop postoperative coronal imbalance due to excessive correction of the thoracolumbar (TL) curve and inadequate correction of the lumbosacral (LS) curve. Oblique lateral interbody fusion (OLIF) can restore disc height and reshape the lumbar coronal curve by inserting a large cage, offering correction and effectiveness comparable to posterior lumbar interbody fusion (PLIF). However, for type 2 DLS patients, who are more likely to experience postoperative coronal imbalance due to insufficient correction of the lumbosacral curve, the comparison between



OLIF and PLIF regarding curve angle correction, postoperative balance, and overall curve correction effectiveness remain unclear.¹ As a result, this study was conducted to compare two surgical approaches for treating type 2 DLS.

METHODS

This retrospective study involved 146 patients with type 2 DLS who underwent either OLIF or PLIF. The inclusion criteria were as follows: (1) age over 50 years, (2) diagnosed with type 2 DLS, (3) Cobb angle greater than 10 degrees, (4) patients with recurrent low back pain and worsening leg symptoms, (5) completion of at least one year of follow-up after surgery, and (6) confirmation of type 2 DLS. The patients were divided into two groups based on the surgical technique used: OLIF and PLIF groups. Spinal and pelvic parameters were measured using X-ray imaging both preoperatively and postoperatively. Clinical outcomes were evaluated using the Oswestry Disability Index (ODI) and the VAS. Data on operation time, intraoperative blood loss, number of surgical fixation segments, drainage tube placement duration, and drainage volume were also recorded.

RESULTS

One week after surgery, there were no significant differences in VAS scores between the two groups ($P>0.05$), but the ODI index was higher in the PLIF group compared to the OLIF group. At the one-year follow-up, there were still no significant differences in VAS scores or ODI indices between the groups ($P>0.05$), suggesting that both surgical methods resulted in favorable

outcomes. In summary, OLIF surgery offers reduced surgical trauma while achieving similar results to PLIF surgery. Figure 1 shows the anteroposterior and lateral radiographs of the entire spine of the OLIF group, taken before surgery and at the one-year follow-up. At the final follow-up, the OLIF group had significantly

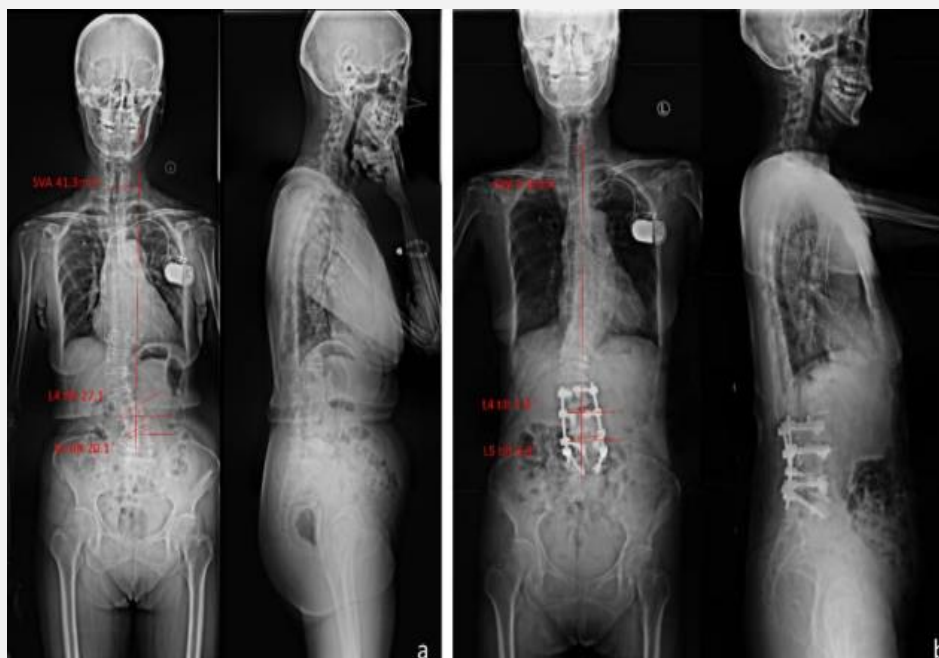


Figure 1. A Type 2 DLS was diagnosed in a 78-year-old female patient who had substantial disability and low back discomfort (a). C7PL shifting was somewhat impacted by the TL/L curve, despite its larger amplitude. An OLIF was carried out. After a year of follow-up, CBD decreased from 41.3 mm before surgery to 5.8 mm (b).



smaller Coronal balance distance (CBD), LS curve Cobb angle, L4 coronal tilt (L4 tilt), L5 coronal tilt (L5 tilt), Apical Vertebrae Translation (AVT), and LIV coronal tilt (LIV tilt) compared to the PLIF group. No significant differences were found in other coronal imaging parameters. The OLIF group showed greater improvements in CBD, L4 tilt, L5 tilt, AVT, and LIV tilt ($P<0.05$). Notably, at the one-year follow-up, OLIF surgery was associated with a significantly lower rate of postoperative coronal imbalance compared to PLIF surgery ($P<0.05$). A sagittal imbalance was present in most type 2 global coronal malalignment (GCM) patients, but postoperative sagittal imaging parameters showed significant improvement in both groups ($P<0.05$). The PLIF group had a more notable improvement in Sagittal vertical axis (SVA) compared to the OLIF group ($P<0.05$).

DISCUSSION

Despite internal fixation with screws and rods, OLIF surgery may have a higher risk of cage subsidence compared to PLIF. This could be due to the larger cage used in OLIF to correct scoliosis, which may not align properly with the patient's endplates. Previous research has indicated that the size of the implanted cage can affect spinal stiffness in traditional PLIF procedures.³

CONCLUSION

The clinical effectiveness of OLIF combined with posterior fixation is similar to that of PLIF for patients with type 2 DLS. Moreover, OLIF surgery substantially reduces surgical trauma and lowers the risk of postoperative coronal imbalance.

REFERENCE

1. Fan Z et al. Two-stage surgery with oblique lateral interbody fusion and posterior fixation in degenerative scoliosis with lumbosacral curve-driven degenerative lumbar scoliosis: a feasible option to prevent postoperative coronal decompensation. *J Orthop Surg Res.* 2024 Dec 26;19(1):880.
2. Lu S et al. Global Coronal Malalignment in Degenerative Lumbar Scoliosis and Priority-Matching Correction Technique to Prevent Postoperative Coronal Decompensation. *Global Spine J.* 2024 Nov;14(8):2327-2339.
3. Lu T et al. Comparing the osteogenesis outcomes of different lumbar interbody fusions (A/O/X/T/PLIF) by evaluating their mechano-driven fusion processes. *Comput Biol Med.* 2024 Mar;171:108215.

Outcome and complications of open reduction, internal fixation (ORIF) and total hip arthroplasty (THA) in acetabular fractures

INTRODUCTION



Acetabular fractures in the elderly are becoming more common. These fractures are frequently accompanied by significant joint impaction and comminution, which are known to predict poor outcomes. Achieving anatomic reduction and stable fixation is crucial for a positive postoperative result, but this is particularly challenging in osteoporotic bone.

In patients with irreconstructable displaced acetabular fractures, ORIF and acute THA can be performed with satisfactory functional outcomes; however, there is a significant chance of infection and revision.

Age is considered a significant risk factor for requiring conversion to total hip arthroplasty (THA) after open reduction and internal fixation (ORIF) of displaced acetabular fractures. Studies have reported that up to 30% of patients may require conversion to THA following surgical treatment of an acetabular fracture, with most conversions occurring within 2 years.¹ A technique that combines ORIF with acute THA has been referred to as the "A-frame" concept. This approach stabilizes both columns, with the acetabular shell functioning as a horizontal column, enabling patients to bear weight immediately as tolerated.² Improved clinical outcomes and fewer revisions have been reported with acute THA compared to delayed THA. However, the procedure carries a notable risk of serious complications, such as infection and dislocations, highlighting the importance of careful patient selection to achieve favorable results.¹ This study presents the short- to medium-term outcomes and complications of patients who underwent this combined procedure.

METHODS

In this observational study, a total of 48 cases treated with ORIF and acute THA between 2000 and 2019 were identified from a local pelvic fracture registry, and follow-up data was collected. The typical follow-up intervals were 3 months, 1, 2, 5, 10, 15, and 20 years. Mechanisms of injury, fracture classification, surgery type, and surgical exposures were all included in the baseline set of data. Complications were noted at follow-up, and radiographic and clinical evaluations were conducted, including WOMAC, Merle D'Aubigne and Postel scores, pelvic radiographs, and the Harris Hip Score. The primary outcome measured was the Harris Hip Score (HHS) at one year. Secondary outcomes included implant survival, complications requiring surgical intervention, and mortality at three months. Descriptive statistics were applied, and Kaplan-Meier survival curves were generated.

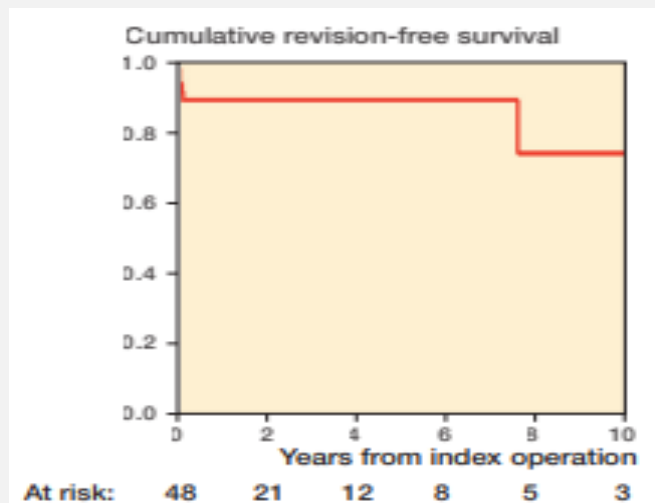
RESULTS

The study included 37 men and 11 women, with a mean age of 68 years (ranging from 37 to 87). Six patients died within three months of surgery, leaving 42 cases for follow-up. The average follow-up period was 2.8 years. The most frequent injury mechanism was a fall from standing height ($n = 36$). Medical comorbidities were prevalent among the patients. The mean HHS at one-year post-surgery was 83. Of the missing data, one patient passed away 18 months after surgery, and five others were lost to follow-up and did not respond to attempts to contact them. Four patients reported poor outcomes with HHS scores under 70; among these, one had a previous proximal femoral fracture, one sustained a nerve injury at the time of the trauma,



and one had multiple fractures from polytrauma. Additionally, three patients with low HHS scores had nerve injuries at the time of the original injury. Other factors affecting outcomes included pre-existing conditions such as ipsilateral arthritis in the knee or ankle and neurological comorbidities that influenced gait and pain. At the latest follow-up, 19 patients were walking unaided, 7 used crutches, and 3 were dependent on wheelchairs, all of whom had been treated for postoperative infections. Of the 48 initial cases, 38 had an intact THA at the last follow-up. Eight patients experienced one or more postoperative complications that required surgical intervention. The revision-free survival rate for the THA was 89% at 5 years and 74% at 10 years (Figure 1). Seven reoperations occurred: 6 for postoperative infections and one for a closed reduction of implant dislocation. At the latest follow-up, 38 patients had their original implants intact, and 28 patients were able to walk without assistance.

Figure 1. Total years of THA survival



DISCUSSION

This study aimed to report the short- to medium-term outcomes of acetabular fractures in 48 osteoporotic cases treated with a combined procedure of ORIF and THA, while also identifying factors important for patient selection. The results showed favorable clinical outcomes, with a mean HHS of 83 one year after surgery for patients classified as ASA class 1–3. In a separate cohort of 64 patients who received acute THA as the sole treatment for their acetabular fracture, more than 50% achieved an HHS of 80 or higher at the latest follow-up.³ A study involving 22 patients reported favorable outcomes with a coned hemipelvic acetabular component, which also facilitated early weightbearing.⁴

CONCLUSION

ORIF combined with acute THA can yield good functional outcomes in patients with unreconstructable displaced acetabular fractures, although there is a significant risk of infection and the need for revision surgery. Careful patient selection is essential to minimize complications and perioperative mortality, meaning that ASA grade 4 patients should be considered for alternative treatments. In the future, acute ORIF and THA should be considered as a high-risk procedure with a considerable chance of perioperative complications.

REFERENCE



1. Kirkeboe RL, Madsen JE, Nordsletten L, Clarke-Jenssen J. Acute treatment of elderly patients with acetabular fractures by open reduction, internal fixation, and total hip arthroplasty: a 1-10-year follow-up of 48 patients. *Acta Orthop*. 2024 Nov 20;95:661-666.
2. Rickman M et al. The management of complex acetabular fractures in the elderly with fracture fixation and primary total hip replacement. *Eur J Trauma Emerg Surg*. 2012 Oct;38(5):511-6.
3. Sermon A, Broos P, Vanderschot P. Total hip replacement for acetabular fractures. Results in 121 patients operated between 1983 and 2003. *Injury*. 2008 Aug;39(8):914-21.
4. McMahon SE, Diamond OJ, Cusick LA. Coned hemipelvis reconstruction for osteoporotic acetabular fractures in frail elderly patients. *Bone Joint J*. 2020 Feb;102-B(2):155-161.

Isolated Dislocation of the Fibular Sesamoid in the Great Toe: A Rare and Underrecognized Condition

INTRODUCTION

The sesamoid bones, named after Galen around CE 180 due to their resemblance to sesame seeds, were believed in ancient times to be the dwelling place of the soul after death. The Ancient Hebrews considered these bones to be indestructible.¹ However, the sesamoid apparatus is not immune to injury and can be affected by various conditions and post-traumatic issues, including sesamoiditis, osteochondritis, avascular necrosis, arthritis, osteomyelitis, fractures, stress fractures, and sesamoid dislocations, with or without damage to the surrounding capsuloligamentous structures.² Dislocation of the hallux sesamoid, especially the fibular one in isolation, is an extremely rare condition, with only a few cases reported in the medical literature. It is frequently overlooked or not given sufficient attention when evaluating injuries of the first MTP joint.¹ This article highlights often overlooked conditions and offers guidance on its management by presenting a case study along with a review of existing literature.

When isolated acute traumatic dislocation of the fibular sesamoid comes to young, energetic individuals who have high physical demands or who are exhibiting severe symptoms, surgical care appears to have a better clinical outcome than conservative management in most cases.

CASE PRESENTATION

A 16-year-old male adolescent presented to the emergency department with acute pain in his hallux after a forceful plantar flexion and axial load on the forefoot, resulting in an inability to bear weight. Physical examination showed moderate swelling, mild bruising on the plantar surface of the first MTP joint, and tenderness over the sesamoid complex,



Figure 1. Preoperative AP and oblique X-ray showing proximal migration and rotation of the fibular sesamoid.



along with limited active and passive dorsiflexion. X-rays, including anteroposterior and oblique views revealed no fractures or misalignment of the hallux but showed proximal retraction and rotation of the fibular sesamoid bone, indicating an acute traumatic dislocation of the fibular sesamoid (Figure 1). MRI revealed a tear in the lateral sesamoid phalangeal ligament and partial rupture of the plantar capsule of the first metatarsophalangeal joint, with the fibular sesamoid buttonholed through the tear. During surgery, the plantar joint capsule's inner surface was exposed, showing a partial rupture of the lateral midportion, and the fibular



Figure 2. Postoperative AP and oblique x-ray depicting anatomic reduction of fibular sesamoid.

sesamoid buttonholed through it. Normal dorsiflexion of the hallux was restored during the procedure. The wound was closed with layered sutures, and a padded dressing was applied. Postoperatively, no motor, sensory, or vascular deficits were observed, and after six days, the patient was advised to begin weight-bearing with a forefoot off-loading shoe for six weeks. Early rehabilitation involved passive flexion of the interphalangeal and MTP joints of the great toe. The patient was monitored with follow-up visits at 2, 4, and 6 weeks, where serial X-rays confirmed proper repositioning of the hallucal sesamoids (Figure 2). At 3 months, the patient regained a normal passive range of motion with 40° of extension and 30° of flexion at the first MTP joint, though an active range of motion was limited to 25° of extension and 10° of flexion. The patient had completely resumed his regular activities, his gait was normal, and there was no lingering pain in the sesamoid apparatus. At subsequent follow-ups at 6, 12, 24, and 36 months, the patient remained symptom-free.

DISCUSSION

In this case, maintaining the normal function of the sesamoid complex required both the open reduction of the fibular sesamoid and the concurrent repair of the plantar capsule of the first MTP joint. Although both dorsal and plantar approaches have been used in similar cases, the authors selected a dorsal approach to aid in reducing the displaced fibular sesamoid while maintaining the integrity of the plantar plate. The repair was performed using absorbable sutures. Cortez et al. used mini suture anchors to reconstruct the intersesamoidal ligament.³



CONCLUSION

Fibular sesamoid isolated acute traumatic dislocation is an extremely uncommon occurrence. These injuries are often overlooked in the acute phase due to misinterpretation of plain radiographs, leading to delayed or missed diagnoses. Pain on the plantar surface of the first MTP joint along with a restricted range of motion should prompt further imaging to investigate the issue. Surgical intervention tends to yield better clinical outcomes than conservative management in most cases, particularly for young, active patients with high physical activity demands or severe symptoms.

REFERENCE

1. Gkoudina A et al. Isolated proximal dislocation of fibular sesamoid of the great toe: A rare and overlooked pathology. *Foot & Ankle Surgery: Techniques, Reports & Cases*. 2024 Dec 5:100454.
2. Lee DK, Mulder GD, Schwartz AK. Hallux, sesamoid, and first metatarsal injuries. *Clin Podiatr Med Surg*. 2011 Jan;28(1):43-56
3. Cortés ZE, Baumhauer JF. Traumatic lateral dislocation of the great toe fibular sesamoid: case report. *Foot Ankle Int*. 2004 Mar;25(3):164-7.



This scientific input is prepared from the Department of Medical Services, an initiative of M/s Micro Labs Limited under the aegis of Micro Knowledge Academy. The information contained herein is for education purpose only. The content is developed by compiling information from various authentic and published literatures. Although great care has been taken to assure the accuracy of the publication, M/s Micro Labs Limited shall not be responsible or in any way liable for any inaccuracy, errors, or omissions resulting from negligence or otherwise howsoever or any consequences arising there from. In spite of best efforts, the information in this publication may become outdated over time. M/s Micro Labs Limited shall not be responsible in any manner whatsoever, for any action taken, opinions expressed, advice rendered or accepted, any direct, incidental, special or consequential loss and damage caused on the basis of any material or information presented in this publication / update