

APOA Foot & Ankle Council Presents..

Case of the Month

October 2025

Presented by:

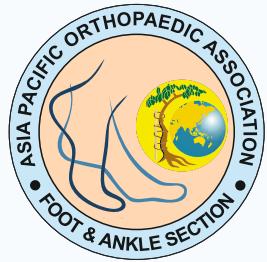


Dr. Astuti Pitarini, MD

St. Carolus Bone and Joint Centre – Jakarta
Gatam Institute – Eka Hospital BSD
Indonesia

Learning Points

- ◎ Supramalleolar osteotomy (SMO) is a reliable joint-preserving surgery in young adults with varus ankle OA, especially in post-traumatic cases.
- ◎ Fibular osteotomy remains controversial: some authors advocate for routine fibular osteotomy, while recent biomechanical studies suggest comparable pressure reduction with or without fibular osteotomy. Decision-making should be individualized.
- ◎ Concomitant ankle arthroscopy addresses loose bodies and impingement and allows adjunct orthobiologic therapies.



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Title:

Step by Step of Planning an SMO: A Reliable and Effective Realignment Surgery as a Preservation of Ankle Joint

Upcoming Case of the Month
November 2025

Presented by:

Dr. Ho Man Kit

Department of Orthopaedics and
Traumatology
Princess Margaret Hospital, Hong
Kong



Title:

Correction of a Severe Valgus Ankle Malunion: A Case Report on Surgical Strategy and Outcomes

Want to present a case? Write to...



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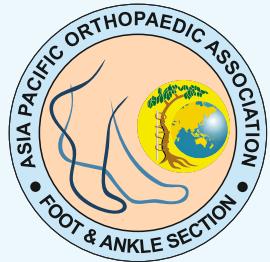
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Step by Step of Planning an SMO: A Reliable and Effective Realignment Surgery as a Preservation of Ankle Joint

Dr. Astuti Pitarini, MD

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Case Summary

A 22-year-old male presented following a road traffic accident resulting in a talar fracture-dislocation. He initially underwent open reduction and internal fixation (ORIF). However, he was referred to our center with increasing ankle pain after implant removal.

Background

Ankle osteoarthritis (OA), particularly when accompanied by varus or valgus deformity, can be effectively addressed with **supramalleolar osteotomy (SMO)**. Compared to the knee, ankle cartilage demonstrates superior resistance to degeneration. Therefore, correcting deformity early can significantly delay joint deterioration.

SMO realigns the mechanical axis of the hindfoot and lower leg, redistributes pressure across the joint surface, and normalizes the vector of the triceps surae. This reduces shear stress, improves talar congruency within the tibiofibular mortise, and slows progression of ankle OA. In appropriately selected cases, SMO may delay or even avoid the need for total ankle replacement or arthrodesis.

Imaging and Planning



*(Fig. 1)
Initial injury: talar fracture-dislocation*

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(Fig. 2)

Immediate ORIF with satisfactory reduction



(Fig. 3)

One-and-a-half years post implant removal: persistent pain, with residual K-wire in the talus.



(Fig. 4)

Hindfoot view showed a visible varus deformity. The right calcaneal axis was turned medially. It was subtle but clinically significant.

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Surgical Techniques



(Fig. 5)

SMO planned about 3 cm above the ankle. Fibular osteotomy was planned to facilitate joint congruence – helps with translation of tibiotalar contact pressure. A 1.8 mm K-wire is introduced frontally at the osteotomy site parallel to the tibial joint surface, as a guide. According to Paley's formula, the angular correction (α) in degrees from an opening wedge osteotomy can be estimated using:

$$\alpha = \text{arctangent} (H / W)$$

Where:

H = height of the wedge (in mm)

W = width of the tibia at the osteotomy site (in mm)

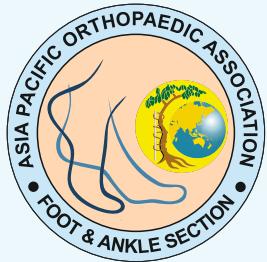


(Fig. 6)

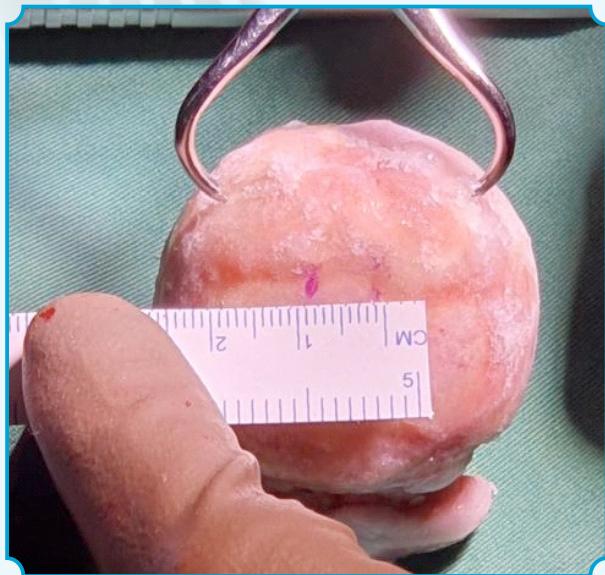
Supine positioning with ipsilateral buttock support to neutralize limb rotation. Medial ankle incision centered around the osteotomy site. Distraction instrument or Hintermann-like instrument is used to open the wedge.

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(Fig. 7)

Femoral head allograft fashioned to 10 mm wedge; in real case allowing more millimetres can prepare for potential subsidence. Literature recommendation is not more than 10 mm to avoid nerve stretch injury. According to Paley's formula, 10 mm medial opening wedge osteotomy can typically correct about 9.5° to 11.3° of varus deformity, depending on tibial width at the osteotomy site.



(Fig 8)

Concomitant ankle arthroscopy performed to debride cartilage debris and treat impingement. Intra-articular hyaluronic acid injected post-op, with second dose at 6-month follow-up



(Fig. 9)

Immediate post-op weight-bearing radiograph. Postoperative protocol: 2 weeks posterior splint, 4 weeks CAM walker (partial weight bearing), followed by 6-week progressive loading

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Complications and Recovery



(Fig 10)

Mild wound dehiscence managed conservatively. Internal hardware was later removed after confirmed union.

Functional recovery and pain relief were achieved, with radiologic correction maintained

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