APOA Foot & Ankle Council Presents..

Case of the Month

1st June 2023

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Presented by:

Dr. Henry Ricardo Handoyo, MD.
Faculty of Medicine Widya Mandala Catholic University/Surabaya Orthopedi and Traumatology Hospital, Surabaya-East Java, Indonesia

Title:

PIP joint fusion and flexor digitorum brevis tenotomy procedure for claw toes in spinal cord injury following lumbar spine decompression

Learning Points:

- Deformities of the lesser toes are a frequently-encountered condition associated with significant morbidity. In order to choose the most appropriate treatment strategy a thorough understanding of the anatomy and pathology of lesser toe deformities is required.[2]
- In a claw toe, that commonly seen in neuromuscular disorders, the first causative deformity is thought to be hyperextension at the MTPJ, but the exact mechanism is unclear. When the MTPJ becomes chronically hyperextended, the intrinsics shorten and the axis of pull shifts dorsal to the centre of rotation of the MTPJ.[2,3] The intrinsics can therefore no longer produce a flexion moment at the MTPJ and the extensors act unopposed. The flexors are pulled taut and flex the IPJs.
- The goal of surgical treatment is to improve symptoms by restoring alignment and function, and avoiding recurrence. In order to achieve this, it is essential for the treating surgeon to understand the normal anatomy and pathology of the various deformities.[4]

Upcoming Case of the Fortnight on 1st July 2023

Presented by:

Dr. Chan Chi Chiu, Dennis
Associate Consultant, Department of Orthopaedics and Traumatology, Queen Elizabeth Hospital, Hong Kong SAR

Title:

A case of Total Ankle Replacement in an End Stage Ankle Arthritis with Significant Talar Bone Loss

Want to present a case? Write to...

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Faculty of Medicine Widya Mandala Catholic University/Surabaya Orthopedi and Traumatology Hospital, Surabaya-East Java, Indonesia

CASE

Clinical presentation

A 67 year-old male patient came to our hospital with chronic pain and deformity on 2nd, 3rd, 4th and 5th toes that are exacerbated by ambulation and shoewear. As the deformity progresses, the severity of symptoms gradually increases. Patient had history of lumbar spine surgery in 2018 and 2022, cervical spine surgery in 2019.

Clinical evaluation

Upon physical examination, it showed that there are callosities, and irritated skin dorsally over the PIPJ. No MTPJ instability recorded. Straight leg raise test positive and Babinski test negative. Patient had type 2 (reducible MTPJ but a fixed PIPJ) Dhukaram et al classification.

Radiological and EMG evaluation

The initial radiological assessment shows hyperflexion of PIP and DIP joint of 2nd, 3rd and 4th and 5th toes.
EMG-NCV impression is chronic radiculopathy of right S1 root with axonal degeneration sign.

MRI right ankle and pedis impression are posterior tibial and Achilles tendinosis with no tear.

MRI lumbosacral shows post posterior stabilisation at L3,L4,L5,S1 level, acceptable positioned, no evidence of broken instruments/dislodgement. L3-L4 right and left foraminal bulging disc, facet hypertrophy with mild bilateral foramina stenosis. L5-S1 mild left asymmetric bulging disc, mild facet hypertrophy, with compression of thecal sac, mild right and moderate left foramina stenosis.

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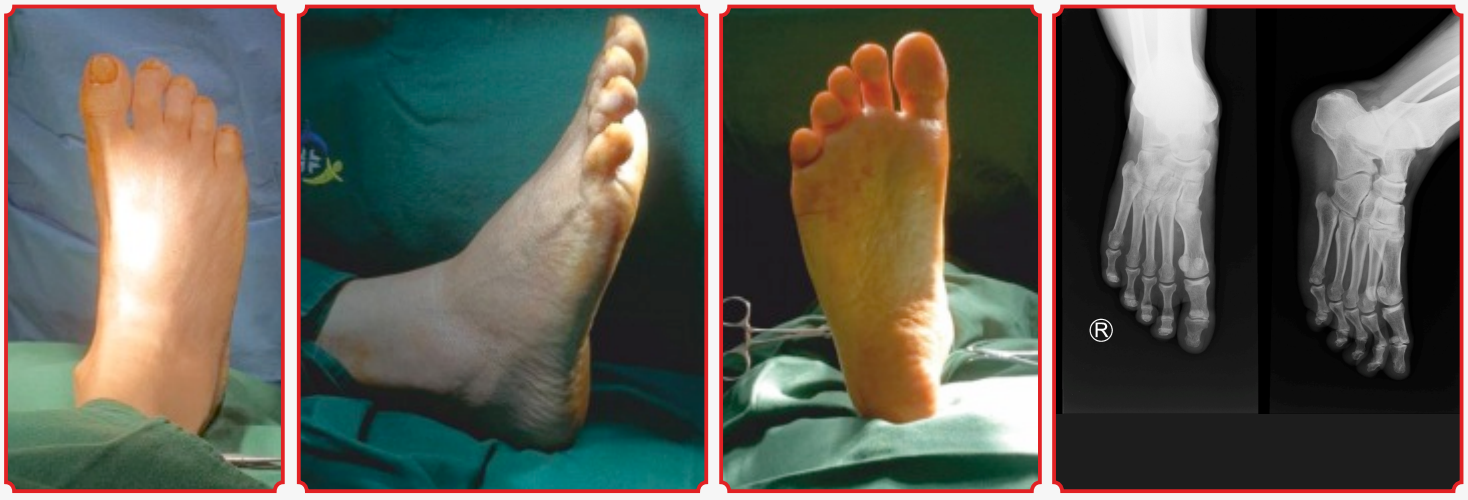
Treatments

Conservative management such as wearing shoes with a wider toe box, toe pads, the proper utilization of orthotics and physiotherapy fails and pain persists with worsening deformity.

Surgical treatment must address the deformities at the PIPJ, DIPJ (if present), and MTPJ. If MTPJ instability exists, this should be addressed first.

We did tenotomy performed at the PIPJ which effectively releases FDB. In this patient we found fixed PIPJ flexion, flexible DIPJ flexion deformity without MTPJ deformity, so we perform FDB tenotomy and PIPJ fusion. The fusion of the PIPJ is an effective procedure for most deformities related to the digits. It is particularly useful and preferred when there are significant deforming forces, as well as when all or multiple digits are involved since it maintains the structural stability to the toes. The fusion converts the toe to a rigid lever arm.



(Fig. 1)

Preoperative clinical and x-ray with hyperflexion of PIP and DIP joint

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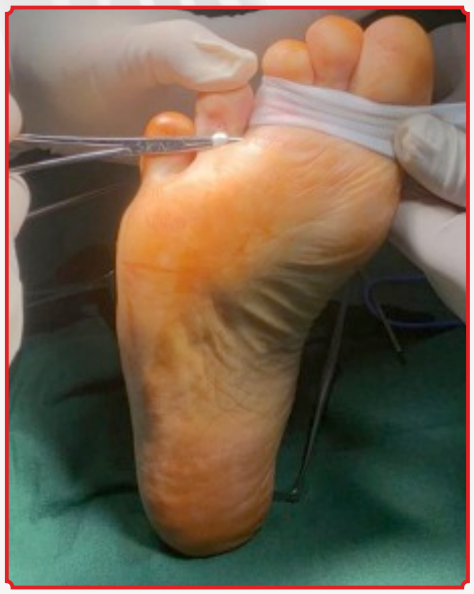
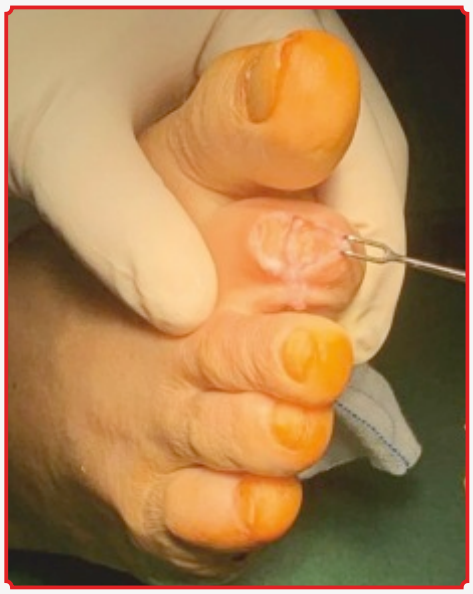


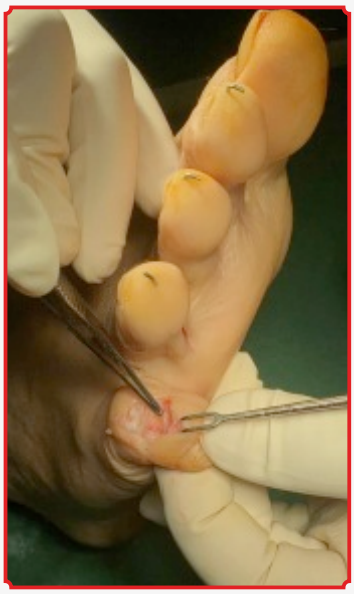
(Fig. 2)

Intraoperative FDB tenotomy



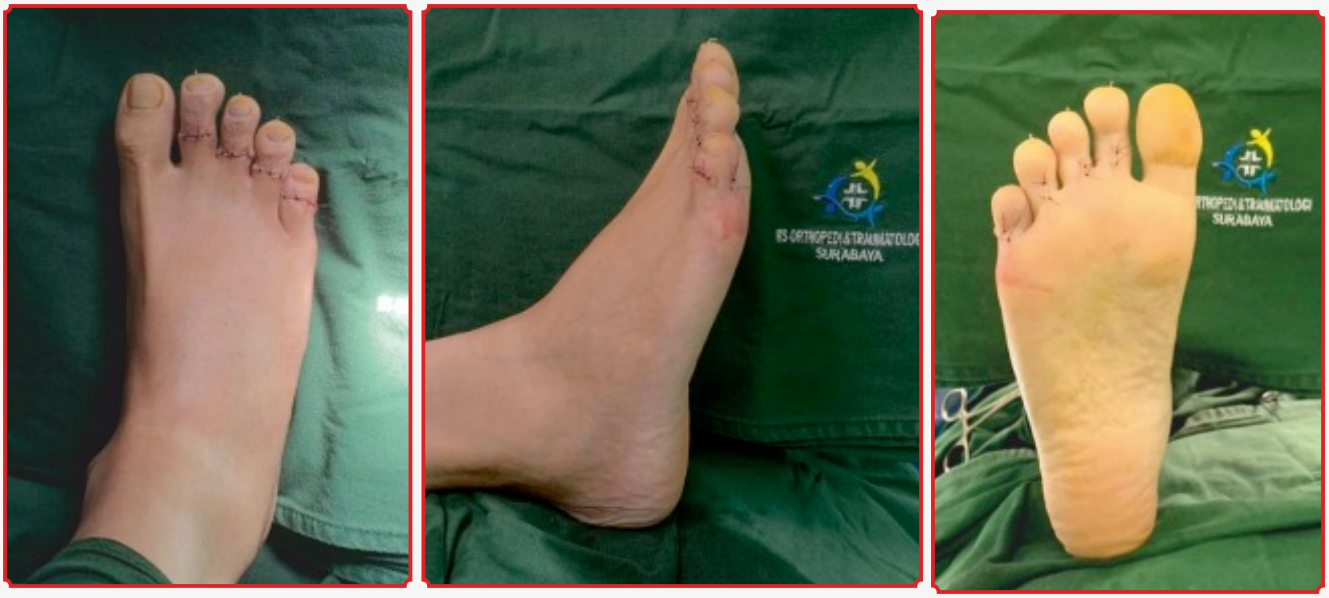
(Fig. 3)

PIP joint preparation of 2nd toe for fusion



(Fig. 4)

PIP joint preparation of 5th toe and K-wire fixation of 2nd, 3rd and 4th toes after PIP joint preparation



(Fig. 5)

Postoperative clinical picture

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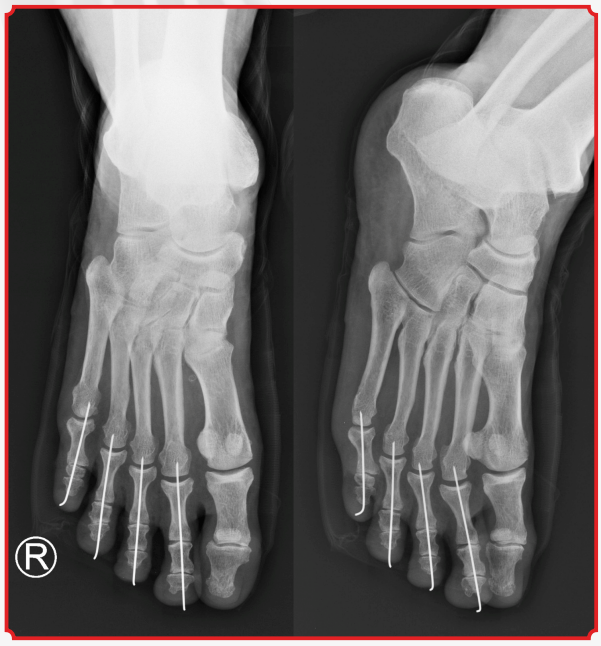

(Fig. 6)

Postoperative x-ray

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4. *Goransson M, Constant D. Hammertoe. [Updated 2022 May 30]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan-.*