Severe Hallux Varus; an Uncommon Deformity—A Case Report and Review of Literature.

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ABSTRACT

Hallux varus is relatively uncommon and few cases have been reported in the orthopedic literature. In this article, we report the case of a 63 years old, female patient with severe hallux varus deformity, associated with deformity of other toes. Here we describe the case report of hallux varus managed by surgical intervention at our tertiary care hospital in Mumbai, India.

Keywords: hallux varus; first metatarsophalangeal joint.

INTRODUCTION

Hallux varus is a deformity of the great toe that is characterized by adduction of the hallux and medial subluxation of the first MTP joint. The hallux varus is a triplanar deformity, involving supination of the first metatarsophalangeal joint, hyperextension of the first metatarsophalangeal joint, and hyperflexion of the hallux interphalangeal joint [Figure 1]. The hallux is deviated or subluxed medially with a non-purchasing digit in varus rotation with a possible negative angle between the first and second metatarsals.\footnote{1,2}

Hallux varus if present in transverse plain is referred to as hallux adductus. In literature incidence are very less as compared to hallux varus. Here we present the case of severe degenerative hallux varus associated with 2\textsuperscript{nd}, 3\textsuperscript{rd}, 4\textsuperscript{th} toe deformity, treated surgically with Correction and arthrodesis of the 1\textsuperscript{st} metatarsophalangeal joint with excisional arthroplasty of 2\textsuperscript{nd}, 3\textsuperscript{rd} and 4\textsuperscript{th} interphalangeal joint using k-wire.

CASE REPORT

A 63-year-old female, presented in the Outpatient department with pain in the left foot, difficulty in walking and wearing shoes.

On physical examination, there was a severe hallux varus deformity of left foot with 80 degree medial deviation of the great toe. There was adduction at metatarsophalangeal joint and flexion at proximal interphalangeal joint of 2\textsuperscript{nd}, 3\textsuperscript{rd} and 4\textsuperscript{th} toes [Figure 1]. There was compensatory supination of the hind foot. The medial ingrown toenail was present. There was long hallux with increased 1\textsuperscript{st} web space. Interphalangeal joint bursitis was present.

Figure 1: Deformities on toes.
She was a known case of Rheumatoid Arthritis and she was under treatment. On x-ray there was a dislocation of the 1st metatarsophalangeal joint with subluxation of 2nd, 3rd, 4th toes & flexion at interphalangeal joint [Figure 2]. There was evidence of demineralization of bone with reduction of joint space notes. The hallux abductus angle was negative and intermetatarsal angle was reduced.

The patient was more concerned about cosmetic deformity and for which surgery was planned. Correction of deformity and arthrodesis of the 1st metatarsophalangeal joint with excisional arthroplasty of 2nd, 3rd and the 4th interphalangeal joint was done. K-wires were used to stabilize all the four toes and for maintenance of the surgical correction [Figure 3].

Postoperatively result was good without any complication. At 3 week k-wire was removed. At 6 months, the patient was satisfied cosmetically and had painless joints [Figure 4].

**DISCUSSION**

Hallux varus is relatively uncommon and few cases have been reported in comparison to hallux valgus in the orthopedic literature. Hallux varus is a deformity of the great toe that manifests as a medial displacement of the first MTP joint. The hallux varus is a triplanar deformity, involving supination of the first metatarsophalangeal joint, hyperextension of the first metatarsophalangeal joint, and hyperflexion of the hallux interphalangeal joint. The hallux is deviated or subluxed medially with a non-purchasing digit in varus rotation with a possible negative angle between the first and second metatarsals.[1,2] Different non-surgical and surgical techniques have been described to treat Hallux varus.

- Non surgical techniques include
  - Non steroidal anti-inflammatory drugs
  - Toe splints
  - Orthotics & physiotherapy
  - Steroids

- Various surgical intervention are described in literature[3,4] which have been used both alone and in conjunction with others, is as follows:
  - Sesamoidectomy
    - Relocation of the sesamoid(s).
  - soft tissue procedure
    - Skin resection of the first web-space
    - Syndactyly of the great and second toes
    - Total joint release
    - Abductor hallucis transfer[5]
    - Ligapro suture/technique (an elastic polyethylene terephthalate device that is not available in the United States)
  - Split extensor hallucis brevis (EHB) transfer and reverse Akin procedure
  - EHB transfer
  - Lengthening of the medial capsular structures
  - Lengthening of the extensor hallucis longus (EHL)
  - Osteotomy/Arthrodesis/ arthroplasty
CONCLUSION

Many surgical procedure have been mentioned in literature and been used as per priority of surgeon and patients. Surgery is aimed at improving the overall position of the hallux, not necessarily its motion.

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