Original Research Paper

Volume - 15 | Issue - 08 | August - 2025 | PRINT ISSN No. 2249 - 555X | DOI : 10.36106/ijar

General Surgery

CASE SERIES OF SURGICAL OFFLOADING PROCEDURES FOR DIABETIC FOOT ULCERS IN GOVERNMENT VIRUDHUNAGAR MEDICAL COLLEGE HOSPITAL

Dr. R. Sivasubramanian MS	Assistant Professor Of General Surgery Government Virudhunagar Medical College.
Dr. T. Vijitha Deve MS	Assistant Professor Of General Surgery Government Virudhunagar Medical College.
Dr. K. S. Gokulnath Premchand MS	Associate Professor Of General Surgery Government Virudhunagar Medical College.
Dr. R. Rani MS*	Associate Professor Of General Surgery Government Virudhunagar Medical College. *Corresponding Author

ABSTRACT **Introduction:** Diabetes prevalence is increasing in developing and developed countries around the world. Among the complications of diabetes, the treatment of diabetic foot remains a major challenge for the healthcare system. Since the occurrence of foot ulcers are curable now a days through offloading procedures, this will improve the quality of life of Diabetic foot ulcer patients. This study was designed to cure the forefoot ulcer through various offloading procedures. **Objectives:** To reduce pressure on the foot especially in areas with existing trophic ulcers or bony prominences, to promote healing and prevent recurrence. **Methods:** By proper foot examination and surgical offloading procedures such as flexor tenotomy, keller gap arthroplasty, Modified Jones tendon transfer and floating osteotomy. **Conclusions:** Surgical offloading procedures helps to reduce pressure on the foot, restore mobility, correct deformities and improving quality of life.

KEYWORDS : Type 2 Diabetes Mellitus, Diabetic foot, offloading in diabetic foot

INTRODUCTION

Diabetic foot ulcers are frequently related to elevated pressure under a bony prominence. Conservative treatment includes offloading shoes and plaster casts. While casting in plaster is usually effective in achieving healing of foot ulcers, recurrence rates are high.Surgical offloading that includes correction of foot deformities has good short and long term results. The surgical offloading alleviates the pressure under the bony prominence, thus enabling prompt ulcer healing, negating the patient's dependence on expensive shoes and orthotics, with a lower chance of recurrence.

Examination Of Diabetic Foot:

Inspection starts as the patient walks into a well-lit room, preferably after removing his footwear and shocks. The patients neurological status and any bio mechanical abnormalities involving this gait, can be easily elucidated even before the examination begins.

In the inspection any blackish discolouration or redness noted. Any skin dryness and any cracks present are noted. Hidden area of the foot between the toes noted.

Any toe deformity claw toe or hammer toe deformity noted. Signs of prominent metatarasl heads noted. Joint mobility, especially in the First Metatarsophalangeal joint, the First Tarsometatarsal joint and Ankle joint. Pedal pulses felt to assess the vascularity of the foot. By using semmes-Weinstein 5.07 monofilament, the protective sensations and peripheral nerve functions are tested. Vibration perception testing can be done using a vibratory peripheral threshold biothesiometer.

Then radiographic assessment done by weight bearing radiograph of the foot on ankle in standard anteroposterior and lateral views.

After acquiring adequate glycemic control and anaesthetic fitness we have done offloading procedures.

Offloading Procedures:

1)TIP OF TOE ULCERS:PERCUTANEOUS FLEXOR TENOTOMY.
2)FIRST INTERPHALANGEAL JOINT ULCER:KELLER GAP ARTHROPLASTY
3)FIRST METATARSAL HEAD ULCER:PERONEUS LONGUS To PERONEUS BREVIS TRANSFER and EHL TENDON TRANSFER
4)PRESSURE ULCERS UNDER METATARSAL HEADS (2-5): FLOATING OSTEOTOMY

CASE STUDY:

Fig 1: First Interphalangeal Joint Ulcer

CASE 1:A 48 years old male admitted with complaints of ulcer in right foot for 1 year (Fig 1).He was known diabetic for 5 years .O/E A single ulcer size 1*1cm present over right first interphalangeal joint. After evaluation patient underwent keller gap arthroplasty (Fig 2),then wound healed well after proper immobilization and offloading shoes.

Fig 2: Keller Gap ARTHROPLASTY done - Healed First INTERPHALANGEAL joint Ulcer

CASE 2: A 60 years old female known diabetic, admitted with complaints of trophic ulcer in right foot for 3 years(Fig 3).O/E A single ulcer size 2*1cm present over right first metatarsal head region.Patient underwent peroneus longus to peroneus brevis tendon transfer and Jones Extensor Hallucis Longus tendon transfer,then wound healed well(Fig 4)after proper immobilization for 3 weeks.

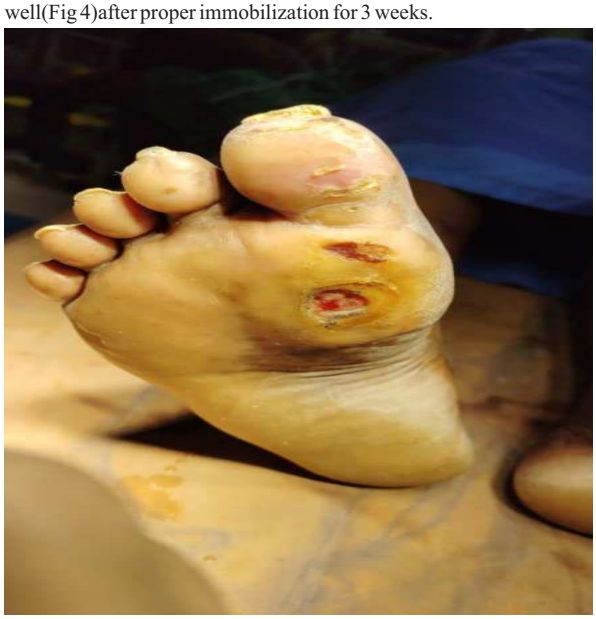

Fig 3: First Meta Tarsal Head Ulcer

Fig 4: Healed First Metatarsal Head Ulcer- PL to PB transfer and EHL Tendon Transfer done

Fig 5: Second Metatarsal Head Ulcer

CASE 3

A 60 years old male admitted with complaints of multiple claw toes with ulcers present in tip of toes. Patient underwent multiple flexor tenotomy.

CASE 4:A 40 years female known diabetic admitted with complaints of ulcer in left foot for 1 year(Fig 5).O/E A single ulcer size 1*1 cm present in left second metatarsal head region. Patient underwent floating osteotomy of second metatarsal head(Fig 6).

Fig 6: Floating osteotomy second metatarsal head

CONCLUSIONS

Surgical offloading procedures helps to reduce pressure on the foot, restore mobility and correct deformities. This is mainly considered for patients with pre ulcerative changes and early ulcers of foot. Correcting the cause of ulcer will not only heal the ulcer but also prevent recurrence , need of amputations thereby improving the quality of life.

REFERENCES:

1. International Diabetes Federation. IDF Diabetes. 7ed. Brussels, Belgium: International Diabetes Federation; 2015. Available from: http://www.diabetesatlas.org. [Last cited on 2016 Apr 14].
2. American Diabetes Association. Consensus Development Conference on Diabetic Foot Wound Care: 7-8 April 1999, Boston, Massachusetts. American Diabetes Association. Diabetes Care 1999;22:1354-60.
3. Boulton AJ, Vileikyte L, Ragnarson-Tennvall G, Apelqvist J. The global burden of diabetic foot disease. Lancet 2005;366:1719-24.
4. Trautner C, Haastert B, Giani G, Berger M. Incidence of lower limb amputations and diabetes. Diabetes Care 1996;19:1006-9.
5. van Schie CH. A review of the biomechanics of the diabetic foot. Int J Low Extrem Wounds 2005;4:160-70.