



A new classification for surgical offloading—An extension and expansion

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Abstract

Ulcers in diabetic foot are one of the most common focal pathology that affects more than 15% of the patients in their lifetime. Loss of sensation in foot and biomechanical factors play essential role in its causation. One of the most common modality of management of diabetic foot ulcer is offloading. The offloading can be mechanical or surgical. This article aims at providing a new descriptive classification for surgical offloading for the first time and it is an extension of Amit Jain's SCC classification.

Keywords: diabetic foot, offloading, amit jain, classification

Introduction

It is projected that in the year 2045, there will be around 700 million people in the world living with diabetes mellitus [1]. One of the most challenging problems of diabetes mellitus is the diabetic foot ulcer [2]. In fact, the diabetic foot problems today are one of the leading causes of disability that results in financial burden in healthcare system [3].

It is known that diabetic foot ulcer results in almost 85% of non-traumatic lower limb amputation [4]. The global prevalence of ulcers in diabetic foot is around 6.3% and recurrence of foot ulcer is reported to be very high [2].

Offloading of diabetic foot ulcers is one of the most important treatment modality in management of these ulcers [5]. There are numerous offloading methods that are available for healing the diabetic foot ulcers [6]. The offloading could be external/mechanical (non-surgical) or surgical offloading [7].

Amit Jain's 'SCC classification' is a new classification that was developed first for diabetic foot ulcer and later it was extended and applied to Charcot foot, foot amputations, therapeutic footwear, callus, etc [8, 9]. All these concepts belong to Amit Jain's principle and practice of diabetic foot [10].

Amit Jain's Classification for Surgical Offloading

The primary author proposes a new classification for surgical offloading, which is an expansion and extension of his "SCC" classification in diabetic foot [9].

According to this new classification, surgical offloading can also be divided into 3 general classes (Table 1) namely simple, complex and complicated surgical offloading. It can also be applied to non-diabetics.

The classification is based not just on expertise of performance of the procedure but also understanding the pathology, mechanobiology/biomechanics and application of the procedure/case selection.

This is a simple, easy to remember, practical, descriptive, open classification wherein any new surgical offloading developed in future can be placed in any one of the classes Types.

Table 1: showing Amit Jain's classification for surgical offloading

Types of surgical offloading's	Description	Examples
Type 1 surgical offloading's	Simple	Tenotomies, Tendoachillies lengthening, Gastrocnemius recession, etc
Type 2 surgical offloading's	Complex	Osteotomies, Arthroplasty, Resections, Tendon transfers, etc
Type 3 surgical offloading's	Complicated	Arthrodesis, Joint stabilization procedures, etc

Table 1 showing Amit Jain's classification for surgical offloading

Further, we can have triangle of surgical offloading in pattern similar to triangle of amputation and triangle of offloading (non-surgical) wherein the 3 available options can be placed at the 3 corners of the triangle [10, 11]. This can also serve as a good teaching tool (Figure 1).

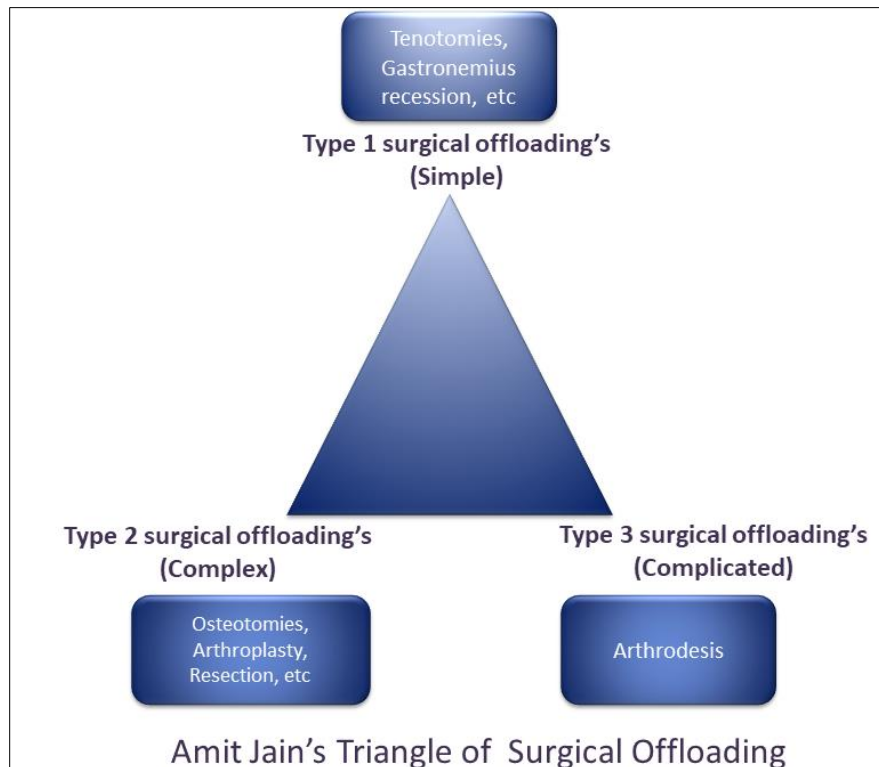


Figure 1: showing the Amit Jain's triangle of surgical offloading

Conclusion

Distinct new concepts are being developed in diabetic foot and many of them have made the understanding of diabetic foot much easier. The Amit Jain's principle and practice is one such new concept. The Amit Jain's classification for surgical offloading is another new classification that divides surgical offloading into 3 classes which is very easy to remember.

References

1. Jodheea-Jutton A, Hindocha S, Luximon AB. Health economics of diabetic foot ulcer and recent trends to accelerate treatment. *The Foot*, 2022, 101909.
2. Dogruel H, Aydemir M, Balci MK. Management of diabetic foot ulcers and the challenging points: An endocrine view. *World J Diabetes*, 2022;13(1):27-36.
3. Francia P, Galdani E, Policardio L *et al.* Mortality risk associated with diabetic foot complications in people with or without history of diabetic foot hospitalizations. *J Clin Med*, 2022;11:2454.
4. Shah P, Inturi R, Anne D *et al.* Wagner's classification as a tool for treating diabetic foot ulcers: Our observations at a suburban teaching hospital. *Cureus*, 2022;14(1):e21501.
5. Chadwik P, Astley E, Dunn G *et al.* Recommendations for improving offloading for the foot in diabetes. *The Diabetic Foot Journal*, 2022;25(1):1-8.
6. Jain AKC, Apoorva HC. Looking at offloading in diabetic foot from a different angle- the triangle. *Medicine Science*, 2021;10(4):1562-5
7. Amr W, Far HMA, Abady OMA, Yassin MA. Comparison between surgical offloading and mechanical offloading in treatment of plantar diabetic foot ulcer. *The Egypt J Hosp Med*, 2022;87:1303-1306.
8. Jain AKC. A new classification for diabetic foot surgery. *Int J Surg & Surgical Res*, 2020;2:6-8.
9. Jain AKC. Extended application of Amit Jain's 'SCC' classification concept for diabetic foot. *Int J Surg Sci*, 2019;3:188-91.
10. Jain AKC. Supermodern diabetic foot surgery. *Medicine Science*, 2021;10(3):1081-4.
11. Jain AKC. Amit Jain's Destructive/Amputation Ladder and its Variants. *Saudi J Med*, 2020;5:214-21.