بسم الله الرحمن الرحيم

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تم رفع هذه الرسالة بواسطة / مني مغربي أحمد

بقسم التوثيق الإلكتروني بمركز الشبكات وتكنولوجيا المعلومات دون أدنى مسئولية عن محتوى هذه الرسالة.

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Mono-focal Distraction Osteogenesis in Management of Traumatic Bone Loss (Systematic Review of Literature)

Submitted for Partial Fulfillment of master Degree in Orthopedic Surgery

By

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Shady Ahmed Nafady

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List of Abbreviations

ASAMI : Association for the Study and Application of the Methods of Ilizarov.

CI : Confidence interval

DO : Distraction osteogenesis.

DVT : Deep venous thrombosis.

DRL : Distraction Regenerate Length.

DF : Degree of freedom.

EFT : External fixation time.

EFI : External fixation index.

IM : Induced membrane

ICC : Intra-class correlation coefficient.

NV : Neurovascular.

N/E : Not estimable.

OR : Odds ratio.

PTI : Pin tract infection.

PRISMA : Preferred Reporting Items for Systematic Reviews and Meta-Analyses

RABG : Radiologically apparent bone gap.

ROI : Range of incidence.

SE : Standard error.

VTE : Venous thrombo-embolism.

V : Variance.

W : Normalizing weight.

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Introduction

Segmental bone defect can result from trauma, critical bone defects cannot be managed by usual surgical techniques, and a myriad of reliable reconstruction strategies exist, however reconstruction remains an elective procedure that requires a significant investment of time, assets, and effort by the patient and surgeon.[1]

Open type fracture where bone loss is most common is Gustilo IIIB and IIIC type fracture this type of injury is relatively rare 11.4% of all open fractures.[2]

A critical segmental defect is a bone void that will not fill with conventional surgical techniques and require additional reconstruction or else it may cause functional limitation and progressive disability i.e. shortening of lower limb.[3]

While it is possible to have traumatic open fractures associated with remarkable bone loss in virtually any bone in the body, the most common injured bone is the Tibia due to limitation in soft tissue coverage especially at the Tibial shin.[4]

The main target outcome is functional result as if faced with segmental bone loss in the upper extremity; limb shortening is a viable option as function is not dependent on

limb length symmetry while lower limb is not so forgiving in limb length discrepancy.

Although most bony defects can be reconstructed with modern surgical techniques, the surgeon and patient must have a thorough discussion of the expected outcome. [5]

Significant functional limitations and pain are often the result of injury to skin, muscle, blood vessels, and nerves. In the setting of trauma to the soft tissues, treatment outcomes are far less predictable than those associated with the management of bony injuries. [6]

Among the various techniques traditionally used to fill in bone gaps:

1. Bone grafting
    a) Autografts
    b) Allografts
    c) Demineralized bone matrix (DBM)
    d) Synthetics
    e) Bone morphogenetic protein (BMP)
    f) Stem cells
2. Induced membrane (Masquelet technique)