بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

MONA MAGHRABY

Systematic Review and Meta – Analysis of Outcomes of Conservative Treatment of Fracture of Base of Fifth Metatarsal of the Foot versus Operative Treatment

Submitted for Partial Fulfillment of
Master Degree in ***Orthopedic Surgery***

By

Hasan Mostafa Amer Saad
M.B.B.Ch
Faculty of Medicine, Ain Shams University

Under Supervision of

Professor Dr. Atef El-Beltagy
Professor of Orthopaedic Surgery
Faculty of Medicine – Ain Shams University

Ass. Prof. Dr. Amr Farouk
Assistant Professor of Orthopaedic Surgery
Faculty of Medicine – Ain Shams University

Faculty of Medicine
Ain Shams University
2021

سورة البقرة الآية: ٣٢

Acknowledgments

First and foremost, I feel always indebted to ***Allah*** *the Most Beneficent and Merciful.*

I wish to express my deepest thanks, gratitude and appreciation to ***Professor Dr. Atef El-Beltagy****, Professor of Orthopaedic Surgery, Faculty of Medicicne, Ain Shams University, for his meticulous supervision, kind guidance, valuable instructions and generous help.*

Special thanks are due to ***Ass. Prof. Dr. Amr Farouk****, Assissant Professor of Orthopaedic Surgery, Faculty of Medicicne, Ain Shams University, for his sincere efforts, fruitful encouragement.*

I would like to express my hearty thanks to all my family for their support till this work was completed.

Hasan Mostafa Amer Saad

List of Contents

List of Tables

List of Figures

List of Figures cont...

List of Abbreviations

Abb.	Full term
AOFAS	*American Orthopedic Foot and Ankle Score*
AP	*Anteroposterior view*
BG	*Bone graft*
BMD	*Bone Mineral Density*
BMI	*Body mass index*
CI-F	*Conservative indication and functional treatment*
CI-O	*Conservative indication and orthopedic treatment*
CP	*Calcaneal pitch*
CT	*Computed tomography*
FC	*Foot casting*
FFI	*Foot function index*
IP	*Interphalangeal*
ITT	*Intention-to-treat*
LOS	*Length of stay*
MAA	*Metatarsus adductus angle*
MRI	*Magnetic Resonance Imaging*
MTP	*Metatarsophalangeal*
MTV	*Fifth metatarsal bone*
NSAIDs	*Nonsteroidal anti-inflammatory drugs*
p	*P-VALUE*
PB	*Peroneus brevis tendon*

List of Abbreviations cont...

Abb.	Full term
PCS	*Physical component summary*
PF	*Lateral band of plantar fascia*
PT	*Peroneus tertius tendon*
RTB3	*Return to competitive play*
SD	*Standard deviation*
SF-12	*12-item short-form of the SF-36 Health Survey*
SF-36	*Short form 36*
SI-F	*Surgical indication and functional treatment*
SI-O	*Surgical indication and orthopedic treatment*
SI-S	*Surgical indication and surgical treatment*
SLC	*Short leg casting*
TC	*Talocalcaneal angle*
T-MT1	*Talo–first metatarsal angle*
VAS	*Visual analog score*
VAS-FA	*Visual analog scale foot and ankle*
Vs	*Versus*

INTRODUCTION

Metatarsal fractures are frequent injuries in both adults and children and represent a relatively common source of chronic foot pain. There are several distinct patterns of injuries to the metatarsal which can be considered according to the anatomical site and mechanism of injury ***(Stefan Rammelt et al., 2004).***

Fractures of the base of the fifth metatarsal bone are commonly seen both in recreational and competitive athletes. This type of fracture is generally Referred to as a "Jones Fracture," named afer Sir Robert Jones, who first described this fracture pattern in 1902 ***(Hans Polzer et al., 2012).***

Lawrence and Botte in year 1993 divided fractures in base of the fifth metatarsal bone into tuberosity avulsion, real Jones fracture and fracture of the proximal diaphysis of the fifth metatarsal bone. Stress fracture of the diaphysis of the metatarsal bone is defined as a stress fracture in the zone of the proximal part of the fifth metatarsal bone distally from the zone of Jones fracture ***(Dane K. Wukich et al., 2009).***

Fractures of the base of the fifth metatarsal are common injuries secondary to ankle and foot trauma that can be easily overlooked if attention is not paid to that area when interpreting the radiographs or if the appropriate films have not been obtained ***(Chad L. Seidenstricker et al., 2017).***

Fractures of the proximal fifth metatarsal have been classified into 3 anatomic subgroups: tuberosity avulsion fractures in zone 1,fractures at the metaphyseal/ diaphyseal junction (Jones fracture) in zone 2, and proximal diaphyseal stress fractures in zone 3 ***(Zenios et al., 2005).***

The fifth metatarsal base fracture is very common which have a greater incidence in males in their third decade and females in their seventh decade, with a greater prevalence in women with low bone mineral density. Fracture of the proximal fifth metatarsal is a common injury, and its treatment is largely determined by the anatomic location of the fracture ***(Derek T Bernstein et al., 2015).***

Several methods of non-operative treatments have been studied, including elasticated bandaging and wearing a hard-soled shoe, through to immobilization in a cast, focused rigidity casting or a walking boot, simple padding and symptomatic care ***(Fansa et al., 2012).***

Treatment options, and clinical outcomes. Most fractures are treated with no operative measures, only a small proportion of these fractures require operative stabilization ***(Zwitserand and Breederveld, 2010).***

Aim of the Work

A systematic review & meta-analysis of literature to state the Outcomes of conservative treatment of fracture of base of fifth metatarsal versus operative treatment.