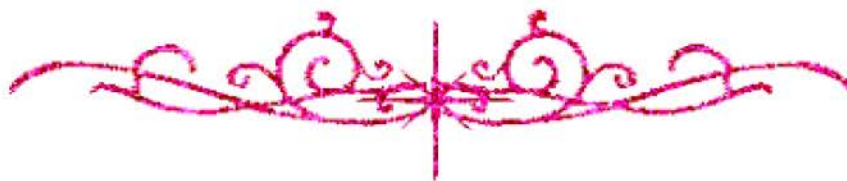


بسم الله الرحمن الرحيم





شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

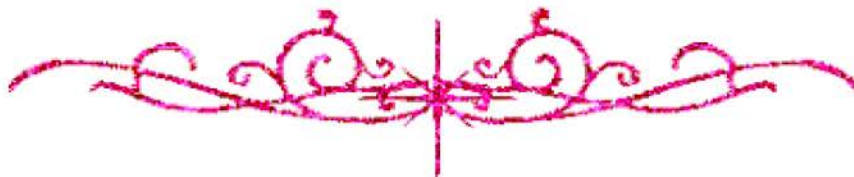
قسم

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



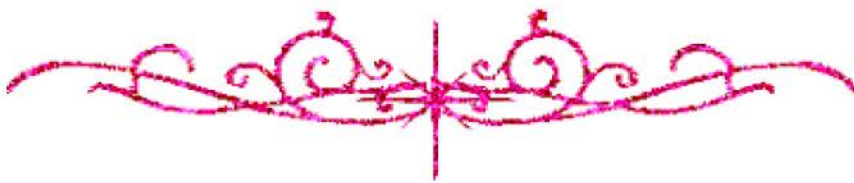
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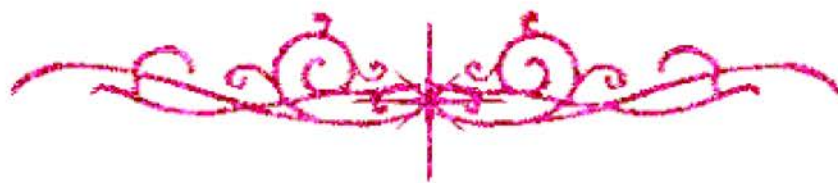


بعض الوثائق الأصلية تالفة





بالرسالة صفحات
لم ترد بالأصل



Outcomes of Proximal Femoral Nailing (PFN) in unstable trochanteric fractures; A Meta-Analysis

Thesis

Submitted for partial fulfillment Of Master Degree in Orthopedic Surgery

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2021

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List of Abbreviations

- **IFFs:** Inter-trochanteric femoral fractures.
- **DHS:** Dynamic Hip Screw.
- **GM:** Gamma Nail.
- **SHS:** Sliding Hip Screw.
- **PFN:** Proximal Femoral Nail.
- **PCCP:** percutaneous compression plate.
- **RCTs:** Randomized Control Trials.
- **SSI:** Surgical Site Infection.
- **HHS:** Harris Hip Score.
- **VTE:** Venous Thromboembolism.

Abstract

The current literature showed inconsistent results regarding the efficacy of PFN, as compared to other fixation modalities or hemiarthroplasty. This updated meta-analysis showed that PFN was as effective as the DHS regarding operative characteristics, postoperative complications, and mortality. On the other hand, PFN was superior to Gamma nail in terms of postoperative complications. Concerning PFN versus hemiarthroplasty, the pooled estimates favored PFN in surgery duration, intraoperative blood loss, hospitalization days, HSS, and mortality.

Despite that ITFs can be effectively managed by internal fixation with conventional techniques, the peculiar characteristics of a subtype of the affected patients, such as osteoporosis and severely unstable fractures, led to the development of the extra and intramedullary fixation techniques. Although many orthopedic centers favor DHS, it is limited by its high cost and significant blood loss. Recently, PFN has gained momentum in the setting of unstable ITF owing to its biomechanical advantages; it effectively supports the posteromedial wall and resists excessive collapse. However, some concerns were raised regarding the implant failure rate following PFN owing to exerted imbalance on implant around hip joint. The results after the study showed that operative characteristics, postoperative complications, and mortality were comparable between PFN and DHS.

As previously mentioned, ITF tends to affect elderly patients, who require rapid rehabilitation and mobilization to reduce the risks associated with prolonged recumbency. Thus, previous authors proposed hemiarthroplasty for unstable ITF to allow rapid and early. However, the use of hemiarthroplasty has the disadvantages of being invasive procedures with long operative time and significant blood loss. In the present study, we found that PFN was superior to hemiarthroplasty in terms of the duration of surgery, intra- operative blood loss, hospitalization days, HHS, and mortality. Such findings can be attributed to the hemiarthroplasty's invasive nature, with associated blood loss and need for blood transfusion. Besides, the minimally-invasive nature of PFN can result in minimal physiological disturbances on the patients and better functional outcomes.

Keywords: Outcomes of Proximal Femoral Nailing (PFN) in unstable trochanteric fractures; A Meta-Analysis

Acknowledgement

First and foremost I am extremely grateful to my supervisors, **Prof. Dr. Mohamed Maziad** and **Prof. Dr. Mohamed Fawzy** for their invaluable advice, continuous support, and patience during My MSc study. Their immense knowledge and plentiful experience have encouraged me in all the time of my academic research and daily life.

I would also like to thank **Prof Dr. Maged Samy** and **Prof Dr. Gad Ragheb** for their technical support on my study.

Finally, I would like to express my gratitude to my family. Without their tremendous understanding and encouragement in the past few years, it would be impossible for me to complete my study.

INTRODUCTION

Intertrochanteric femoral fractures (IFFs) or hip fractures, are an extracapsular fractures occurring between the femur neck fundus and smaller trochanter (**Lu et al., 2018**).

The incidence of trochanteric fractures is rapidly rising among geriatrics and is expected to be more than 4.5 million by 2050 (**Kumar et al., 2019**) and are often associated with high morbidity and mortality (**Dhanwal et al., 2013**)

Elderly have high incidence of comorbidities including diabetes, hypertension, pulmonary, renal and cardiac problems) adding to the insult of the injury as well as making them highly susceptible to infections and postoperative complications like hypostatic pneumonia, decubitus ulcer and cardiorespiratory failure. Over 700,000 deaths are estimated annually, all over the world due to hip fractures and the one-year mortality after surgery is reported to range between 15% to 30% (**Kumar et al., 2018**).

IFFs is classified into stable and unstable patterns, depending upon the fracture morphology and involvement of the postero-medial calcar (**Voleti et al., 2015**).

The unstable IFFs is common among elderly patients with osteoporosis as a result of the minor external forces, and the resulting long-time clinotherapy may lead to complications as deep vein thrombosis, hypostatic pneumonia, and bedsores. The incidence and mortality of these complications (including coxa vara) induced by conservative treatment are as high as 50% and 35%, respectively (***Lu et al., 2018***).

The main management strategy for IFFs is operative; through stable fixation with a device that help rapid surgery and allows early mobilization including weight bearing as most of these older patients are unable to restrict weight bearing during ambulation. (***Parker et al., 2012***)

Internal fixation is the commonest surgical treatment for ITFs, and intramedullally (nails) and extramedullally (screws or plates) fixations are two commonly used approaches. The established benefits of internal fixation treatments are immediate pain relief, rapid mobilization, accelerated rehabilitation and maintenance of independent living (***Yu et al., 2015***).