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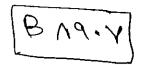
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## STUDY FOR FIXATION OF ROTATIONALLY AND VERTICALLY UNSTABLE PELVIS (EXPERIMENTAL AND OPERATIVE)

Thesis
Submitted for partial fulfillment of
M.D. Degree in

#### **ORTHOPAEDICS**

Presented by

Sherif A. Khaled M.B.B.Ch., M. Sc.

Under supervision of

Prof. Dr. Hazem Abdel Azeem
Professor of Orthopaedics
Cairo University

Prof. Dr. Ismail Zaazou
Professor of Orthopaedics
Cairo University

Dr. Sherif Amr
Assistant Professor of Orthopaedics
Cairo University

Cairo University 2001-2002



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#### **ABSTRACT**

During the period between February 2000 and March 2002 our study was conducted to sssess functional outcome after internal fixation of vertically and rotationally unstable ractures of the pelvic ring. Thirty patients with a mean age of 31 years underwent open eduction and internal fixation for pelvic ring injuries, which were vertically and ationally unstable either unilaterally or bilaterally. Fractures were classified according to the Neuron and Tile classification systems (Tile, 1996; Young et al., 1986). All

reduction and internal fixation for pelvic ring injuries, which were vertically and 'ationally unstable either unilaterally or bilaterally. Fractures were classified according oth Young and Tile classification systems (Tile, 1996; Young et al., 1986). All nationally ever evaluated preoperatively using the standard radiographs: AP, inlet, and outlet views, and CT scan. Postoperatively, patients were followed-up for a mean of 12 nonths (range 6-24 months) and were evaluated using the Majeed score. The study was conducted with the aim of finding the best methods for fixing the different types of unstable pelvic ring injuries, assessing the functional outcome after the various techniques and types of implants used and the union rate of pelvic fractures. The operative treatment consisted of a combination of anterior and posterior fixation in 20 cases, posterior internal fixation alone was used in 5 cases and anterior external fixation was added to posterior fixation in 5 cases. An experimental study was designed and

cases, posterior internal fixation alone was used in 5 cases and anterior external fixation was added to posterior fixation in 5 cases. An experimental study was designed and conducted to test the strength of a newly designed plate for the purpose of rigid anterior segment internal fixation of the pelvic ring, and that can be used in rotationally unstable fractures singly or combined with posterior internal fixation in vertically unstable fractures. The questions posed in our study are: 1) How does the designed plate compare with a single 4.5mm reconstruction plate for anterior symphyseal fixation. 2) How does the anterior, posterior columns of the acetabulum, and the inferior pubic ramus behave in each situation of pelvic compression (APC, LC), and shear. The data were analyzed by recording the strain measured from strain gages against time, and statistical analysis was

done using the SPSS program.

Our results revealed radiologically: none had poor radiological result, 17 patients were excellent, 11 were good, and 2 had fair reductions. The Majeed score (Majeed, 1989) was used to evaluate the functional outcome. The mean score was 82 (range 66-95) among the 29 living patients, 21 patients scored 75 points or higher (72%), and 8 patients scored between 75 and 66 (28%), and one patient died 2 weeks postoperatively.

Keywords: Pelvic fracture-Internal fixation-Anterior fixation-Posterior fixation.

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## TABLE OF CONTENTS

CHAPTERS	Page
*Review of Literature	
*Anatomy	1
*Biomechanics	7
*Mechanism of injury and classification	- 11
*Clinical evaluation	- 23
*Radiographic assessment	- 25
*Associated injuries	30
*Treatment	. 36
*Complications of operative treatment	- 74
*Evaluation and grading of outcome of pelvic fractures	77
*Materials and methods	81
*Results	114
*Case presentation	138
*Discussion	158
*Summary	176
*References	179