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SHERIF

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

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2001-2002



محضر

اجتماع لجنة الحكم على الرسالة القديمة من
الطبيب / ~~صبري محمد~~
توطئة للحصول على درجة الماجستير الدكتوراة
في ~~البيولوجيا~~

تحت عنوان : باللغة الانجليزية :
STUDY OF FIXATION FOR
VERTICALLY AND ROTATIONALLY UNSTABLE
PELVIS (OPERATIVE & EXPERIMENTAL STUDY)

: باللغة العربية :
~~تأليف د. صبري محمد~~
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بعد فحص الرسالة بواسطة كل عضو منفردا وكتابة تقارير منفردة لكل منهم لانتعادت اللجنة مجتمعة فـ
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بكلية الطب - جامعة القاهرة وذلك لناقشة الطالب في جلسة علنية في موضوع الرسالة والنتائج التي توصل
اليها وكذلك الاسس العلمية التي قام عليها البحث .
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ABSTRACT

During the period between February 2000 and March 2002 our study was conducted to assess functional outcome after internal fixation of vertically and rotationally unstable fractures of the pelvic ring. Thirty patients with a mean age of 31 years underwent open reduction and internal fixation for pelvic ring injuries, which were vertically and rotationally unstable either unilaterally or bilaterally. Fractures were classified according to Young and Tile classification systems (Tile, 1996; Young et al., 1986). All patients were evaluated preoperatively using the standard radiographs: AP, inlet, and outlet views, and CT scan. Postoperatively, patients were followed-up for a mean of 12 months (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 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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