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Epiphysea Injuries Around the Knee

*A Theses Submitted for Partial Fulfillment of
the M. D. Degree in Orthopaedic Surgery*

By

Ahmed Abdel Aziz Hassan

M.Sc. of Orthopaedic Surgery

Under the Supervision of

PROF. YEHIA NOUR EL DEEN TARRAF

Prof. Of Orthopaedic Surgery

Cairo University

PROF. MOHAMMED A. EL SOBKY

Prof. Of Orthopaedic Surgery

Cairo University

Cairo University

2000

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◉ قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا

إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ الْعَلِيمُ

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في جراحة العظام

عنوان : باللغة الانجليزية : Epiphyseal Injuries Around

the Knee

باللغة العربية : إصابات كبدية للمفصل الركبتي

بملاء على موافقة الجامعة بتاريخ ١٤ / ٢ / ٢٠٠٠ م تم تشكيل لجنة الفحص والمناقشة للرسالة
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- (١) أحمد محمد العزيم / استاذ وطب العظام
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بعد فحص الرسالة بواسطة كل عضو مفردا وكتابة تقارير مفردة لكل منهم لعرضها على اللجنة مجتمعة فبم
تاريخ ١٨ / ٥ / ٢٠٠٠ م وافقت اللجنة على منح الطالب في جلسة علنية في موضوع الرسالة والنتائج التي تحصل
عليها وذلك للأسس الصلبة التي قام عليها البحث .

قرار اللجنة :

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توزيعات أعضاء اللجنة :-

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المتحن الداخلي

المتنصف

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.....
(صام ٢)



Dedication

*To my daughter Mariem,
my wife and my sisters.*

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Ahmed Abdel Aziz, 2000

Abstract

We studied the results following thirty-three distal femoral epiphyseal injuries, fifteen proximal tibial epiphyseal injuries and two tibial spine injuries. They were followed up for 1.81 years (± 2.04 S.D.).

Of the thirty three distal femoral epiphyseal injuries, seventeen cases were treated conservatively and sixteen cases operatively. Angular deformities of 5 degrees or more occurred in seven cases (22.6 %). Lower extremity length discrepancies of 2 cm. or more occurred in five cases (16.1 %).

Of the fifteen proximal tibial epiphyseal injuries, twelve cases were treated conservatively and three cases operatively. Angular deformities of 7 degrees or more occurred in three cases (21.4 %). Lower extremity length discrepancies occurred in three cases (21.4).

Growth problems correlated well with the severity of trauma. Fractures in the juvenile age group (3.5 to 12 years old) were almost invariably caused by severe trauma and had the poorest prognosis; nine (90 %) of the ten cases in the juvenile age group had unsatisfactory results. Fractures in the adolescent age group (12 years old or more) were caused by less extensive trauma. Eight (22.9 %) of the thirty five cases in the adolescent age group had unsatisfactory results.

Key words

*Knee -Injuries -Epiphyseal injuries - Distal femoral
epiphysis -Proximal tibial epiphysis*

Introduction

Fractures of the distal femoral physis account for 7 percent and that of proximal tibial epiphysis account for 3 percent of epiphyseal injuries of the lower extremity (*Mann and Rajmaira, 1990*).

Fractures of the tibial intercondylar eminence have been considered to be the childhood equivalent of ACL ruptures in adults (*Kendall, et al., 1992*).

A prospective study of the results of 50 cases of epiphyseal injuries around the knee will be carried out. According to *Beaty an Kumar 1994*, the patients age, sex, the mechanism of injury and the clinical presentation will be recorded. Distal femoral and proximal tibial physeal injuries will be classified using the *Salter-Harris (1963)* classification, while tibial eminence fractures will be classified according to *Meyers and McKeever (1959)*.

Non displaced fractures are treated with immobilization, displaced Salter-Harris type I and II distal femoral and proximal tibial physeal injuries will be treated by closed manipulation and immobilization. Displaced type III and type IV fractures

will be treated by open anatomical reduction (*Beaty and Kumar, 1994*).

For tibial eminence fractures, *Myeres and McKeever* Type I and most Type II fractures will be treated non operatively. Irreducible Type II and Type III fractures will be treated by open reduction and internal fixation (*Meyers and McKeever, 1970*).

Patients with distal femoral and those with proximal tibial epiphyseal injuries will be followed up for angular deformity, for limb length discrepancy and for loss of range of knee joint motion.

Aim of the work

The aim of this work is to assess the results of treatment of epiphyseal injuries around the knee and to document the possible complications in relation to each type of injury and to the different modes of treatment.