UPDATING IN MANAGEMENT OF TIBIAL PLAFOND (PILON) FRACTURES

Essay submitted for partial fulfillment of

Master degree of orthopedic surgery

BY

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INTRODUCTION

The term plafond is French for ceiling and refers to the relation of the distal tibial articular surface to the talus .Therefore a plafond fracture refers to any fracture line traversing the weight bearing articular surface of the distal tibia (CarrJB.1999)

The term pilon was first described by the French radiologist Destot in 1911 who likened the shape of the distal tibia to a pestle and compared the explosive impact of the talus against the tibia to that of a hammer striking a nail .Of note,there is some discrepancy in the literature regarding the term pilon.(Destot E. 1911)

Tibial plafond fractures account for fewer than 10% of all lower extremity fracture and are more common in male than female patients .Pilon fracture in particular constitute only approximately 7%to 10%of tibial fractures. However, the frequency of these fractures may be on the rise.(Ferkel. RD.,and Fasulo, 1994)

Pilon fractures are high energy injuries and the primary component of force is vertically directed through the talus into the distal tibia .This vertical compressive force may act singularly on the distal tibia ,or may represent a component of complex forces including shear and or rotation.(Mast JW.1993)

Some sources regard a pilon fracture as any distal tibia fracture with extension into the articular surface whereas others more distinctly describe them as a fracture with comminution of the plafond .Most sources, however classify these fractures as a disruption of the plafond caused predominately by a vertical force .For the purposes of this review,the term pilon will refer to the subset of plafond fractures primarily caused by axial compression.(Marsh JL.Smith ST.1995)

Fractures of the plafond are often the product of a high-energy compression mechanism, which have historically been a challenge to manage. Although the pathophysiology and surgical treatment of plafond fractures may vary, the principles of emergency management are less disputed. In the evaluation and management from the emergency physician`s perspective, it is important to realize the range of mechanisms, consequences, and potential complications of these injuries.(Kim HS .Kim TY 1995)

Intra-articular fractures of the distal tibia are among the most complex injuries of the lower limb. The best results have been achieved with reconstruction of the aricular surface of the tibia, stable fixation , and only a short period of joint immobilization (Ruedi T,Allgower M 1969)

Pilon fractures can have persistent and devastating consequences on patient`s health and will-bieng. Certain social, demographic , and treatment variables seem to contribute to this poor outcomes.(Andrew N.,MD. Meliss L. McCARTHY 2003)

Aim Of The Work

The aim of this work is a serious trial to put a spotlight on the pilon fracture and the great challenge which face the physician in it`s management and how to reach best results and achieving the hard equation by reconstruction of articular surface of the tibia with short period immobilization.

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الطرق الحديثة لعلاج كسور البلافوند
بأسفل عظمة الساق

رسالة

مقدمة توطئة للحصول على درجة الماجستير فى جراحة العظام

من

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الملخص العربى

مصطلح (بلافوند) مصطلح فرنسى وهو يشير الى العلاقة ما بين السطح المفصلى لعظمة الساق وعظمة الثالوث.لذا فان كسر(البلافوند) يعنى اى كسر يمر بالسطح المفصلى السفلى لعظمة الساق.

اول من اطلق لفظ (بيلون) هو عالم الاشعة الفرنسى (ديستوت) عام1911 الذى شبة الجزء السفلي لعظمة الساق بالبرميل مشبها التلاحم ما بين عظمة الثالوث وعظمة الساق بمطرقة تطرق مسمار ولا يزال هناك جدال في معني كلمة بيلون

وتمثل كسور البلافوند اقل من 10% من كسوز الطرف السفلى وهى اكثر شيوعا فى الزجال عن النساء.ويمثل كسر البيلون حوالى 7% الى 10% من كسور عظمة الساق وبالرغم من ذلك فان نسبة تلك الكسور في ازدياد مستمر

وتعتبر كسور (بيلون) كسورا عالية الطاقة والمكون الاساسى لها هى القوة العموديه المتجهة من عظمة الثالوث الي عظمة الساق وهذة القوة اما ان تؤثر منفردة على عظمة الساق او تكون مجموعة من القوي كالانشطارية و الالتفافية.

وهناك بعض العلماء يعتبر كسر(البيلون) بانه اى كسر باسفل عظمة الساق يمتد الي السطح المفصلى بينما اخرون يصفونه بانه كسر متفتت في منطقة البلافوند.ولكن غالبية العلماء يصنفونه بانه تغير فى (البلافوند)يحدث نتيجة عادة لتعرضه لقوة عمودية .لذا فان مصطلح (بيلون) يشير الي كسور منطقة البلافوند نتيجة القوة الانضغاطية الراسية.

وكسور البلافوند تحدث نتيجة الية انضغاطية عالية الطاقة وعادة ما يمثل علاجها تحدى للجراحين.وبالرغم من اختلاف فسيولوجية وطرق العلاج الجراحي لكسور البلافوند فانها لا تستدعي التدخل العاجل ففي تقييم الاصابة وعلاجها من الضرورى معرفة الاليات والاثار التي تنتج من تلك الاصابات.

وتعتبر الكسور المفصلية لعظمة الساق من الكسور المعقدة ويتم الوصول لافضل النتائج باعادة السطح المفصلي لعظمة الساق لوضعة التشريحى والتثبيت المتين وامكانية الحركة في وقت مبكر.

لذا بجب القول بان كسور (بيلون) لها توابعها علي صحة المريض والاختلافات الاجتماعية والجغرافية والعلاجيه عوامل تساهم وتؤدى الى مثل تلك النتائج.

RECENT TRENDS IN MANAGEMENT OF TIBIAL PLAFOND (PILON) FRACTURES

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