SYSTEMATIC REVIEW

Tibial eminentia avulsion fracture in children – a systematic review of the current literature

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INTRODUCTION

Tibial eminentia avulsion fracture is the paediatric equivalent to a midsubstance anterior cruciate ligament injury. It is most common between the ages of 8 and 19 years of age. The incidence is three per 100,000 per year. We explored the clinical evaluation and classification of the fracture, indications for and methods of surgery and the possible sequelae.

METHODS

We performed a systematic search in the PubMed database and retrieved 127 articles. A total of 16 articles met the defined inclusion criteria and were reviewed. Only studies on adolescents were included.

RESULTS

No prospective studies were found. The Meyers & McKeever and Zaricznyj classifications were commonly used, also when evaluating fractures for surgery. X-ray in three views is often sufficient to establish a diagnosis, but computed topographies can be necessary to further evaluate the type of fracture. There is disagreement as to whether a type II-fracture needs surgery. The method of fixation varies greatly between different kinds of suture techniques and screw fixations, but arthroscopic surgery is preferred in the most recent literature. Whether to cross the physis when fixating the fracture is also a matter of disagreement, but there is a lack of literature on the subject. All authors describe low rates of subjective sequelae.

CONCLUSION

Arthroscopic surgery is less invasive and allows for earlier mobilisation than other techniques. Pull-out suture seems to be a recommendable technique. There is a lack of literature on transphyseal fixation and a need for prospective studies evaluating the many different surgical techniques described and the indications for surgery.

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ORIGINAL ARTICLE

Daily number of fractures is associated with road temperature in an urban area

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INTRODUCTION

Different factors related to winter are known to influence the fracture incidence, but little is known about the effect of road surface temperature. This study examines the association between road surface temperature and the daily number of fractures in an urban area during two winters.

MATERIAL AND METHODS

Retrospective data collection was conducted on all patients treated at Bispebjerg Hospital, Denmark, for a humeral, ankle, distal radius or hip fracture during the periods October to April 2009/2010 and 2010/2011. Patients were grouped according to age into the following categories: < 15, 15-30, 30-45, 45-60 and > 60 years. Data on road surface temperature (Tp.) were obtained from The Danish Road Directorate and grouped into the following categories: Days with Tp. > 0 °C, Tp. < 0 °C, Tp. > –5 °C, Tp. < –5 °C and ice alert (IA).

RESULTS

A total of 4,892 patients (4,938 fractures) were treated during the study periods. The daily number of distal radius, humeral and ankle fractures increased significantly with decreasing road surface temperature and the presence of IA. For hip fractures no significant association was found. Decreasing temperature was associated with a significant decrease in the daily number of fractures for patients < 15 years, whereas patients > 30 years experienced a significant increase.

CONCLUSION

Decreasing road temperature results in increased numbers of all fractures except hip fractures. Low temperatures is a risk factor for patients > 30 years and a protective factor for patients < 15 years.

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