



Focus on pediatric skeletal trauma

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This focus on topic of the European Journal of Trauma and Emergency Surgery explores current interesting pediatric trauma issues and open controversial discussions. In particular, epidemiology of pediatric fractures, thorough indication for the surgery of femur and elbow fractures and the issue of metal removal will be discussed.

The first articles article reflect on the treatment of femoral fractures of children. The treatment seems simple and straight forward, except in the age group 2 to 4 years old. What do you consider a leading decisive factor, age or weight, or more factors. In many articles, age and weight are used as guidelines but a definite all conclusive guideline is not possible. Will you consider age, the weight of a chubby child can be within limit but the form of the legs will not be applicable to vertical overhead traction. Most related publications are on the results and morbidity, length and rotation, over- or undergrowth of the femur, as this is and will be a time consuming method of treatment with inherent difficulties. This publication by Dietzel et al. [1] will help in understanding the difficulties of the overhead traction method. The hospital length of stay seems to be one of the major family related problems, some clinics in the world transport the child in traction in the hospital bed home after about 1 week when callus starts.

Just this last argument is the reason for Cinteau et al. [2] to do a study on operative treatment with ESIN nails for children younger than 3 years of age. They conclude that the method is safe to use with good results and early return to home. In daily practice, many surgeons have had the experience that of traction failures due to the child, the form of its legs and family related problems, and have operated

the patient with good results. This article will help in the decision making process and discussion with parents about methods and choices. The third article on pediatric femoral fractures by Cruchten et al. [3] looked at the choices fracture surgeons make for the age group 2 to 10 years old in a systematic review of literature. The clear tendency to treat femoral fractures with elastic nails supports the article of Cinteau et al. [2] and shows the shift toward shorter length of stay in clinic, mostly influenced by socio-economic factors.

The olecranon fracture in children is a rare entity, so the article of Kalbitz et al. [4]. gives us a great insight into the classification, morbidity and results of the treatment of 46 patients, the largest series of patients to date. It gives us a guideline for surgical and non-surgical intervention in an excellent in depth discussion.

The article of Voth et al. [5]. gives us an insight in admittance via the emergency room of an university hospital over a 10 year period, with a clear increase in major injuries particularly extremity injuries, which is seen in many emergency rooms and children hospital all over the world. Their look into subgroups is interesting and can help clinic economics. Change in the society toward sports sadly results in more injuries, the sports federations should be alarmed and take preventive measures, the same should be discussed with local governments on playground safety.

The article by Chaibi et al. [6] is a great addition to the article by Voth and looks at a specific section of the pediatric injuries, the “Epidemiology of lower extremity fractures”, a important part of all pediatric injuries and many due to sports. In Switzerland, not amazing, their peak incidence is in the winter. Most were treated in a closed manner in cast, only 18% needed an orthopedic consultation, which emphasizes the need for training of non-operative treatment of fractures, an important but seemingly less interesting procedure.

There are further issues to discuss, such as timing and metal removal. Wendling-Keim et al. [7] studied the outcome and complication rate of early and delayed osteosynthesis. Overall, they found out, that earlier operation has lower complication rates and better outcome. However, this needs to be further evaluated for the different fractures, age

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and indications. The removal of metal has been an ongoing discussion in adults for many years, in the last 15 years the discussion has shifted away from removal due to a number of good evidence based studies. Clear now seems to be that removal of nails and plates on the diaphysis of long bones does not need to be performed any more, some discussion remains about plates and screws near to the joint and its effect on the joint mobility. As a results of this discussion, the discussion of removal of hardware in children has commenced. What will be the long-term effect be of leaving ESIN nails in the long bone, will this hinder growth or a future operation? The discussion has been difficult in children as a second operation and clinic stay is needed, and parents sometimes are emotionally influenced. Also, the morbidity of the removal procedure is of influence. The article by Lieber et al. [8]. will help in this discussion of patients and parents, and has some tips and tricks for the first operation when the ESIN nails are implanted.

Based on the present volume, we sincerely hope that the importance of understanding the difficulties in the treatment and management of several pediatric trauma injuries in trauma rises and the articles will help you in your choices and discussions with parents.

Declarations

Conflict of interest The authors declare that they have no conflict of interest.

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