We welcome letters to the Editor concerning articles which have recently been published. Such letters will be subject to the usual stages of selection and editing; where appropriate the authors of the original article will be offered the opportunity to reply.

Letters should normally be under 300 words in length, double-spaced throughout, signed by all authors and fully referenced. The edited version will be returned for approval before publication.

The role of the Pirani scoring system in the management of club foot by the Ponseti method

Sir,

I read with interest the articles on club feet published in the August 2006 issue and feel that they indicate the variety of opinions regarding their treatment. Both articles have very successfully defended their results scientifically. With regard to the article by Dyer and Davis1 in the August 2006 issue, entitled, ‘The role of the Pirani scoring system in the management of club foot by the Ponseti method’, the difficulty we all face is perhaps due to the absence of an agreed method to ‘classify’ and ‘evaluate’ treatment outcomes in club foot treatment with uniformity. The authors have used the Pirani scoring method to evaluate their cases at the start of, as well as during, the treatment period and found a positive relationship between a high score and the need to perform a subcutaneous tenotomy. They have failed to appreciate the difference between an evaluation and a classification system. It would have been more helpful if they had used one of the evaluation methods such as that of Dimeglio et al.2 They devised two separate methods to classify and evaluate after treatment of club foot. The method for classification is a 20 point scale2 and the method used to evaluate the foot after treatment had a 50 point scale.3 A similar study by Colburn and Williams4 has used the Dimeglio method2 for classification but evaluated the results of treatment using their own end-point. They also used the Ponseti method for the conservative treatment of these feet. They appreciated the need for the use of separate methods for both purposes.

My suggestion is based upon the opinion of Dimeglio et al,2 Cummings et al,5 and Ponseti.6 These have advocated the use of separate yardsticks for each of the purposes, especially Dimeglio et al2 who have compared at length the weight given to each element of deformity while evaluating the results of treatment by different authors. The Pirani score does not address the functional, radiological, global, gait pattern and muscle function of the foot which are very important in a child who is learning to walk.2 It is too simplistic to be of value in this regard, however, its value in predicting the need for a tendo Achillis tenotomy or the number of casts required cannot be denied. By the end of one year, the children begin to walk or stand up with support. At this stage most authors who have published a long follow-up in relatively large scale studies have preferred to make a global evaluation which encompasses functional, as well as morphological, aspects. Radiological measurements are inaccurate in the children at the beginning of treatment but can be quite useful, especially for treated feet, when the cartilage of talus and calcaneum are better visualised.

Shack and Eastwood7 have used the Pirani method to document and serially evaluate the results of treatment in their study. However, they supplemented their outcome measure by adding radiological evaluation and muscle function. The resultant method is untested and raw with unknown validity.

Both the teams of authors have used Ponseti methods for treatment. But the results cannot be compared easily because, like most club foot studies, each author has picked the yardstick of their choice to justify the findings. I think we need to evaluate statistically each of the regularly cited classification and evaluation methods for their validity and develop a universal CAP (Club foot Assessment Protocol).8 doi:10.1302/0301-620X.89B4.19454

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Author’s reply:

Sir,

We would like to thank Mr Hussain for his interest in our paper. He reiterates the concerns of the paediatric orthopaedic world regarding the lack of one good system to describe the deformities of club feet and to evaluate the outcomes of treatment.

Our paper was concerned only with the description of the initial deformity and recognition of how it changes during the casting phase of Ponseti management. Our aim was to determine the merits of the Pirani scoring system in terms of its ability to predict the likely required treatment by the Ponseti method.

A score for predicting salvage and outcome in Gustilo type-III A and type-III B open tibial fractures

Sir,
I read with great interest the paper by Rajasekaran et al 1 in the October 2006 issue entitled “A score for predicting salvage and outcome in Gustilo type-III A and type-III B open tibial fractures”. The proposed ‘Ganga Hospital Score’ (GHS) appears to give a reproducible and reliable scoring system to be used for type-III open fractures of the tibia without arterial injury. I have a few queries for the authors:

1. Regarding the score for covering tissues, degloving of skin despite a small external wound usually denotes a more severe injury and should not be overlooked.2 Is it necessary to give a score of 1 or 4? If there is extensive periosteal stripping in a transverse fracture, without significant functional tissue damage, what score should it receive?

2. With regard to fracture configuration, a common scenario is a small butterfly fragment (≤ 50%) which is either lost or removed at surgery because of absence of soft-tissue attachments. Will this count as a score of 1 or 4? If there is extensive periosteal stripping in a transverse fracture, without significant functional tissue damage, what score should it receive?

3. Current evidence suggests that delay in initial debridement of open fracture does not influence the risk of infection.3 Do the authors perform initial debridement and fracture stabilisation of all open fractures immediately after presentation or wait until the next morning? Being a referral hospital, do they operate on all open fractures within the first 12 hours after trauma? If there are less than 50% butterfly fragments, will this score be 1 or 4? If there is extensive periosteal stripping in a transverse fracture, without significant functional tissue damage, what score should it receive?

4. In the initial validation of the score, if all six observers rated all 25 fractures at the time of surgery, is there not a high degree of bias possible? Using blinded observers with no prior knowledge of the classification might have been more appropriate.

5. In Table II, a Gustilo type-III B fracture has been listed as a GHS group. From the scoring system, it seems unlikely that a Gustilo type-III B fracture can have a score of less than GHS 6. However, the group involved in our study comprised patients who were in the first few months of life, prior to walking, when any functional scoring would be impossible.

6. On the other hand, a Gustilo type-III A fracture can have a score of less than GHS 6. Will this count as a score of 1 or 4? What is the need for combined orthopaedic and plastic surgical treatment in specialist centres.

7. Requirement of antibiotics for wound healing as a criterion to diagnose infection does not appear to reflect current practice.4 How did the authors differentiate between superficial and deep infection?

8. The method of fracture fixation has not been commented on in the article. Did the GHS have any predictive value on the choice of fixation technique?

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Authors’ reply:

Sir,
We thank Mr Kurup for his interest in our paper. He has raised many relevant points of interest:

1. We agree that degloving of the skin has a higher rate of complication of wound healing and the need for plastic surgical procedures. It is important that every injury with degloved skin be assessed very carefully for viability during debridement. The skin margins of every wound must be debrided until there is evidence of brisk bleeding and the loss assessed. As per the protocol, the scoring for the skin and covering tissue is based on the degree of skeletal support and the need for plastic surgical procedures.

2. Small butterfly fragments (less than 50%) will attract a score of 1 provided that contact of the cortex is possible during fracture stabilisation. To attract a score of 4 or 5 there must be circumferential bone loss of either less than or more than 4 cm respectively. Similarly, transverse fractures attract a bone score of 1, irrespective of the periosteal stripping.

3. We agree that current evidence suggests that delay in debridement of open fractures is not always associated with a higher risk of infection and that the dictum of six hours is no longer valid. However, it is our hospital policy that any open injury must undergo debridement as early as possible unless there is a specific contraindication for anaesthesia and surgical procedure. We have a dedicated orthopaedic, plastic and anaesthetic team which works on a fixed protocol 1 of early debridement and cover, irrespective of the time of arrival of the patient.

4. The validity of any score depends not only on the simplicity and the nature of the scoring system, but also on the thorough knowledge the observer has of the scoring system. In our study, six
observers rated 25 fractures at the time of the index surgery after debridement. Our aim was to compare the inter-observer agreement between surgeons who were greatly experienced and those who were less experienced in evaluation of open injuries. It is our opinion that the whole assessment and management of open injuries must be done by surgeons with good knowledge and experience of this type of injury, and hence we did not use blinded observers with no prior knowledge of the classification.

5. Gustilo type-IIIB injuries, by definition, include a wide range of injuries, from the easily manageable to the barely salvageable. The overriding factor in the practical assessment of an injury in Gustilo’s classification is obviously the size of the wound. However, a wound which is obviously type-IIIB due to its size may still attract a low score for skin, bone and muscles on careful evaluation if there is no loss. It is then possible that a type-IIIB injury can still fall under GHS group 1.

6. Although primary closure of open injuries is against traditional teaching, we firmly believe that good results can be obtained by primary closure of suitable injuries, the results of which have been previously presented. The deciding factor for primary closure is not whether it is type-IIIA or B, but whether there is any skin loss, either primarily or during debridement, which would involve tension while closing. We have had good results with the policy to close wounds, primarily if the following criteria are met, irrespective of the size of the wound:
   a) Debridement performed within 12 hours and to the satisfaction of the surgeon, b) No loss of primary skin during the injury, or at debridement (skin score of 1 or 2), c) Skin approximation possible without tension, d) No farmyard or organic contamination.

7. It is true that the apparent rate of infection depends primarily on the definition used, and that there can be a wide variation in intra-observer reliability in some components of the Centre for Disease Control (CDC) criteria. The modified CDC definition requires the observation of 16 wound or patient characteristics in order to classify infection and has two subjective criteria, namely a surgeon’s diagnosis of infection and the culture of micro-organisms from the wound included in criterion 3. The comparison of CDC criteria with other systems has shown that all or part of criterion 3 for Surgical Site Infection (SSI), as set by the CDC, is subjective with poor inter-observer agreement. Some wounds classified as moderately or severely infected by other systems were classified as not infected, or only superficially infected, by CDC criteria. In order to minimise the subjective nature of the CDC criteria, especially in categorising it as ‘un-infected’, it has been suggested that the “requirement for a surgeon’s diagnosis of infection” be satisfied when a decision is made to start antibiotic treatment or to provide surgical treatment. We used the predefined criteria as requirement of antibiotics to avoid the subjectivity and underreporting of superficial infections.

8. The GHS score does not aim to predict or recommend an appropriate fracture fixation device or technique.

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