Paediatric sport related concussion pilot study

A study was undertaken to determine the degree to which paediatric neurosurgeons agreed on the optimum management of sport related concussion in children. A paradigm for management of concussion in children has not been defined, and the management of such patients largely relies on expert advice from neurosurgeons. This pilot study aimed to establish current consensus neurosurgical practice for management of children with sport related concussion.

Methods

For the purposes of this study, we defined sport related concussion as a head injury occurring during sport (or play) participation in children 5–15 years of age with an admission Glasgow coma score of 15 and a normal neurological examination. A standardised questionnaire was sent to 20 neurosurgeons throughout Australia identified as having specific expertise in paediatric neurosurgery. There were three parts to the questionnaire. The first related to the routine management of uncomplicated sport related concussion in children. The second involved the role of follow up neuroimaging, neuropsychology, protective equipment recommendations, and return to school advice. The third examined the degree of importance placed on a number of clinical prognostic indicators by the neurosurgeons.

Results

Thirteen paediatric neurosurgeons responded to the study (65% response rate). Only three respondents said that they would routinely use skull radiographs and two would routinely use computed tomography scans in uncomplicated sport related concussion. The respondents varied in their methods of dealing with concussed patients, with some recommending hospital admission, some discharging the patient home with the parents, and others recommending a period of observation in the emergency department.

There was a complete lack of consensus among the respondents about the need for follow up, and, if it was thought to be necessary, the length varied from one to six weeks. None of the respondents stated that they would routinely perform neuroimaging or neuropsychological testing at follow up. The results were similar for return to school and return to sport time frames, with ranges of one to six weeks.

Six of the 13 respondents would routinely advise the use of a helmet, and three of the 13 would recommend the use of a mouth guard after such injuries. The following symptoms and signs were examined: headache, vomiting, scalp haematoma, scalp laceration, loss of consciousness, pallor, dry tongue, tiredness or sleepiness, irritability or restlessness, refusal to eat, abusive or aggressive behaviour, withdrawal behaviour, amnesia, and parental concern.

There was no consensus on which of these symptoms or signs are of prognostic importance.

Discussion

In children aged 15 years and under, traumatic brain injury is a common cause of presentation to emergency departments and general practitioners. In the United States, it has been estimated that more than 1 million children sustain a traumatic brain injury annually (of which 85% are mild injuries), and that such injuries account for more than 250 000 paediatric hospital admissions as well as more than 10% of all visits to emergency services.1 Neuroradiologists are often asked to provide expert opinion on the management of such patients.

Following the First International Conference on Concussion in Sport in Vienna 2001, guidelines were drafted on the management of concussion in sport.2 The scientific data upon which these recommendations were based relate specifically to adults and not to children. The American Academy of Paediatrics published guidelines on the management of mild closed head injury in children in 1999; however, these guidelines were more concerned with predicting which children would subsequently develop intracranial complications than the issues of return to sport and neuropsychological recovery.3 The American Academy of Paediatrics guidelines state that there is no indication for routine use of skull radiograph in paediatric concussion and “no data are available that demonstrate that children who undergo CT scanning early after minor closed head injury with loss of consciousness have different outcomes compared with children who receive observation alone after injury.”4

It is not surprising given the paucity of literature on this subject that considerable differences exist, even among experts, as to the management of sport related concussion in children. This has a number of important implications over and above the acute management of the injury, given the potential for concussive injuries to have detrimental effects on the child’s development and scholastic performance. After this pilot study, we plan to undertake a larger study of the neurological and neuropsychological management of children with sport related concussion.

P McCrory
University of Melbourne, Victoria, Australia;
pmccrory@bigpond.net.au

G Davis
Cabrini Medical Centre, Victoria, Australia
doi: 10.1136/bjsm.2004.015958

Competing interests: none declared

References


A simple method for removal of fish hooks in the emergency department

Fishing is a sport enjoyed by millions of people throughout the world. A common fishing injury is the embedment of the fish hook in the skin. All emergency department doctors have experimented with removing fish hooks. It is a challenging procedure because of the hook’s barb, although the external injury is usually minimal.

The parts of the hook are the eye, shank, bend, point, and barb. The function of the barb is to keep the point embedded in the fish's mouth, and therefore it is constructed to make its removal difficult. Hooks come in many different shapes and sizes. Some basic strategies for fish hook removal have been described.1 Techniques tried include a simple retrograde technique, a string pull technique, a needle cover technique, an advance and cut technique, and an incision technique. The choice depends on the type of hook embedded and the location of the injury site.2 3 We report a method that is simple to assemble, easy to use, and readily available in the emergency department. It involves the use of a surgical instrument with needle holders only (Aesculap; we used BM012R needle holders). The entry site is first prepared and anaesthetised by injection of 1% lidocaine. The tip of the hook is advanced through the anaesthetised skin. The point and barb of the hook are exposed. The needle holder is used to grasp the point and barb. The barb is cut off using the needle holder which directly depends on the barb’s small diameter (fig 1). The barbless hook is gently withdrawn through the entry site (fig 2).

This method is almost always successful even for removal of large fish hooks because of the barbless hook. It can be practiced by anyone, anywhere, and at any injury site except the eye.1 Antibiotics should be considered to prevent infection.4 Tetanus status should be assessed and toxoid administered if needed. However, the doctor must weigh this against the potential harm of the foreign body in its current location.5

Figure 1 The barb is cut off the fish hook using the needle holder directly.
In the preface, the author writes “Indeed, the avoidance of too much detail and too many theories is a prime objective”. I feel that this aim prevents the book from becoming a required text for either students or practitioners of epidemiological research, as the author has touched on such a large range of topics that seem to be placed in the “too hard basket”. These include two sample t tests (unequal variances), correlation, and the entire topic of non-parametric techniques. However, these omissions pale in comparison when I realised that the reader is referred to other texts for discussions on sample size and power (the cornerstone to any sound epidemiological design) and also for regression. Regression, arguably the single biggest contribution that the field of statistics has made to epidemiological analysis, is given one line of recognition! I have kept in mind that this is intended to be a “basic” text and a “practical” guide, but my belief is that these topics should always be included in such texts.

As in (almost) all textbooks, especially first editions, there are a small number of errors. For example, on page 40 it states that: “… the sample mean is 82.696, there is a 95% probability that the population mean lies between 80.509 and 84.883.”. In fact, the probability that the population mean lies between these two limits is 0 (zero) or 1 (one). To my mind, this is the only error worth noting, and I am impressed that the author has touched on such a large range of topics, albeit briefly, and been accurate in all the information provided.

In conclusion, I leave you with a summary that is possibly difficult to understand. I find it difficult to define an audience to whom I would recommend this text while, at the same time, I look forward to seeing a more thorough treatment of the topic by this author.

KEY SUBJECTS TO BE COVERED INCLUDE: DIAGNOSTIC RADIOLOGY; ULTRASOUND; NUCLEAR MEDICINE; INTERVENTIONAL RADIOLOGY; VETERINARY RADIOLOGY; EMERGING TECHNOLOGIES; IMAGE ANALYSIS; COMPUTER APPLICATIONS; PACS; RADIOLOGY; RADIOPHYSICS; MANAGEMENT & AUDIT; COMPUTED TOMOGRAPHY; MAGNETIC RESONANCE; EQUIPMENT DEVELOPMENT.

EXPECTED ATTENDANCE (CONFERENCE AND EXHIBITION): 4000

FURTHER DETAILS: UKRC 2005 ORGANISERS, PO BOX 2895, LONDON W1A 5RS, UK; WEBSITE: www.ukrc.org.uk; FAX: +44 (0)20 7307 1414; CONFERENCE TEL: +44 (0)20 7307 1410; EMAIL: conference@ukrc.org.uk; EXHIBITION TEL: +44 (0)20 7307 1420; EMAIL: exhibition@ukrc.org.uk

OSTEOSYNTHSE INTERNATIONAL 2005
15–17 September 2005, Curiohaus, Hamburg Congress Chairman: Johannes M. Rueger, M.D., Professor and Chair

TOPICS:
* Innovations in intramedullary osteosynthesis
* New frontiers in osteoporosis and fracture treatment
* Current trauma research
* Special topic: Recent development in pelvic and acetabular fractures

ABSTRACT SUBMISSION DEADLINE: 31 MARCH 2005

FURTHER DETAILS: INTERCONGRESS GMBH, MARTIN BERNDT, DÜSSELDORF STR. 101, 40545 DÜSSELDORF-GERMANY. TEL: +49 211 585897-80; FAX: +49 211 585897-99; EMAIL: martin.berndt@intercongress.de; WEBSITE: WWW.OSTEOSYNTHSE2005.DE

4TH EUROPEAN SPORTS MEDICINE CONGRESS
13–15 October 2005, Lemesos, Cyprus

FURTHER DETAILS: EMAIL: pyrgos.com@cytanet.com.cy

BASEM CONFERENCE 2005
10–12 November 2005, Edinburgh, Scotland

FURTHER DETAILS: EMAIL: basemoffice@compuserve.com

BASEM CONFERENCE 2006
5–7 October 2006, Oxford, UK

FURTHER DETAILS: EMAIL: basemoffice@compuserve.com
Paediatric sport related concussion pilot study

P McCrory and G Davis

doi: 10.1136/bjsm.2004.015958

Updated information and services can be found at:
http://bjsm.bmj.com/content/39/2/116.1

These include:

References
This article cites 2 articles, 1 of which you can access for free at:
http://bjsm.bmj.com/content/39/2/116.1#BIBL

Email alerting service
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Notes

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/