Letter to the Editors,

Dear Editors,

THORACIC BACK PAIN IN ROWERS AND BUTTERFLY SWIMMERS — Costo Vertebral Subluxation

Thoracic back pain accounts for 19% of the injuries that I have seen in international rowers, male and female. I have also come across similar presenting symptoms while coaching swimmers who specialise in butterfly. The injury usually occurs when the rower is recovering the arms between strokes and catches rough water, a buoy or other object unexpectedly. The athlete complains of pain close to the thoracic spine at or about the level of the 6th and 7th ribs but the pain may radiate laterally or even right around to the anterior chest wall. Deep inspiration, coughing or sneezing is often painful.

Pain may be increased by side flexion of the thoracic spine, rotation away from or into the painful side and sometimes flexion of the thoracic spine. Palpation of the thoracic spine may reveal the level of the trouble and palpation over the angle of the ribs will produce discomfort either at the site of palpation or lateral to it.

Treatment by manipulation is usually successful. The athlete lies prone with the arms elevated above the head and the head turned away from the painful side. The manipulators hands are crossed with one pisiform placed over the tender rib and the other pisiform on the corresponding rib on the other side. A force is then applied through the pisiforms to the ribs in a downwards, forwards and lateral direction. An audible and palpable click is usually an indication that the technique has been successful. The pain is either abolished immediately or settles rapidly in the following 48 hours. Ultrasound in the following 48 hours may further reduce the pain. If manipulation is too painful, mobilisations will help but normally take more time to achieve a similar result.

Therapeutic and preventative exercises in the form of ballistic rotational stretches away from the painful side and ballistic rotation away from the painful side while side flexed away from the painful side, may help reduce the frequency and severity of further episodes. (Ballistic stretching is not normally recommended for soft tissue structures but this type of stretching is required in order to click a joint back into position). Elevation of the arms above the head at the same time as hyperextending the spine may also help.

Stress fractures in rowers have been described and some

rowers have reported that they have had a cracked rib but without X-ray confirmation. I have seen only one stress fracture without any history of trauma in a rib of an international rower. He had localised pain and tenderness over a palpable swelling of the 6th rib at the mid axillary line with a positive X-ray. However, he also had the syndrome described above which responded to treatment with no increase in the symptoms from the stress fracture. He was able to continue rowing without interruption. I suggest that any rowers or butterfly swimmers who complain of pain over their anterior, lateral or posterior chest wall should have their costovertebral joints examined and an X-ray performed before a stress fracture is diagnosed.

I believe that the condition is caused by malalignment of the costovertebral joints where the rib tubercles articulate with the transverse processes of the vertebrae. The articular surfaces of the tubercles of the uppermost ribs are oval and convex whereas the other ribs have flat articular surfaces. The uppermost ribs therefore rotate round their long axis while the lower ribs can move up, back and medially with little rotation. In quiet inspiration movement is produced by the external intercostal muscles and in deep inspiration the serratus anterior and pectoralis minor muscles come into action. The serratus anterior arises from the upper 8 or 9 ribs and is attached to the medial costal border of the scapula. The lower fibres being the strongest, it draws the scapula forward in pushing and punching movements but also prevents backwards rotation of the scapula when weight is carried by the arms in front of the body. The scapula is elevated and fixed by the trapezius, levator scapulae and rhomboids. I suggest that when a rower or swimmer is recovering the arms between strokes, with the scapulae pushed forward and a sudden unexpected force is applied through the arms, which have been elevated in front of the body, the serratus anterior will transmit this force to the ribs and those ribs with the flatter costo-transverse joints and the stronger fibres of the serratus anterior will readily sublux resulting in the syndrome described.

Yours faithfully,

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Dear Editors,

EYE INJURIES IN SQUASH

The December issue of the BJSM published yet another article outlining the serious nature of eye injuries sustained in racquet sports. We have the facts but where do we go from here? Having played international squash for 12 years and being fully conversant with the preventive role of medicine I feel I can appreciate both the doctors' and the players' concerns.

Unfortunately there is no form of eye protection which does not hinder a player's performance. (A medical colleague of mine who lost an eye playing squash has tried most of them.) There are two basic types, those which use a protective lens similar to most occupational safety glasses and those which increase the anatomical margins of the

orbit but do not have lenses. The latter aim to deflect the majority of blows from balls and racquets and do not have the problems associated with perspiration when lenses are used. By their very nature these also have the effect of reducing slightly the field of vision.

As a player I have considered the risks involved to my eyesight and do not feel the risks outweigh the advantages that would be gained by my opponents. Most squash players, who are very competitive by nature, feel the same way. I would however accept the use of eye protection if both parties were to wear them since this would undoubtedly reduce the overall incidence of eye injuries. I therefore feel that the final decision must lie with the governing body who, following expert advice, must decide whether the frequency and degree of injuries necessitate

the enforcement of eye protection. This method is used in North America although the game there is slightly different with a higher risk of eye injury.

Obviously such an enforcement programme would be controversial (as with the recent seat belt legislation) and in practical terms it is unlikely that any further action will ensue until a legal case from such an injury forces the issue.

The serious nature of these injuries make it essential that Governing Bodies publicise the risks involved in their particular sport and encourage the development of more effective forms of protection. The individuals can then make their own decisions. It may be wise for the Governing Body to circularise members of their own Association and all

professional players (who are the trend setters) regarding the idea of enforced use of eye protection. This will certainly help the education process as it is sure to provoke strong feelings and would also give some insight into the support for such an idea. Without the players' support it would be a difficult rule to enforce.

Incidentally, in the same issue a similar problem is presented with regard to mouth protection for hockey players! Should it be the player or the Governing Body who decides on protection?

Yours faithfully

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Medical Officer to the Hockey Association

Dear Editors,

CLOSED INTRAMEDULLARY NAILING OF TIBIAL FRACTURES IN SPORTSMEN

Fractures of the tibial shaft are not uncommon among sportsmen. The treatment is controversial between conservative and operative. We have employed closed intramedullary nailing as the method of choice that offers anatomic reduction with rapid mobilisation, enhancing return to sport.

We would like to report two typical cases.

A 22-year-old professional football player sustained a fracture of his left leg as a result of being kicked. X-rays showed a mid-shaft fracture of tibia and fibula. He was operated upon the same day and the fracture stabilised and fixed with a Kuntcher-Hertzog intramedullary nail by the closed technique. Two days post-operatively, physiotherapy was initiated, consisting of passive, then active knee and ankle exercises. Full weight-bearing was resumed within one week. Three months post-operatively clinical and radiological union was evident. The patient returned to light training within 6 months and resumed full activity with negligible functional deficit within 13 months.

A 27-year-old basketball player sustained a fracture of his left tibia and fibula as a result of a fall of team mates onto his leg. A "butterfly" mid-shaft tibial fracture was seen on X-ray. At operation the fracture was reduced, stabilised and fixed by a Kuntcher-Hertzog intramedullary nail, employing the closed technique. Physiotherapy was initiated on the third day post-operatively, aimed at preventing muscle wasting and loss of joint movement. He resumed full weight-bearing within 10 days. Fifteen weeks post-operatively, clinical and radiological signs of union were evident. He returned to light training five months post-operatively and resumed unlimited sports activities at the beginning of the next season twelve months later.

The treatment of tibial shaft fractures poses a therapeutic challenge to the orthopaedic surgeon. Operative risks, such as wound infection, delayed union, or non-union, may "raise the price" one may pay for anatomic reduction, early mobilisation and preservation of functional capacity obtained by surgical treatment. On the other hand, the immobilisation associated with conservative treatment, has

its own risks and disadvantages, such as: muscle wasting, loss of joint movement, shortening of the leg, malunion, or "compartment syndrome" of the leg. These risks still exist, even with "cast-bracing" which is currently the most popular conservative method of treating tibial fractures.

When these complications are considered, the advantages of surgical treatment are quite attractive. Of all the surgical options, closed intramedullary nailing seems most appropriate for sportsmen.

The major advantages of this method are:

1. It offers a limited, short surgical procedure, resulting in minimal soft tissue damage and low infection rate.
2. This modality offers anatomic reduction, associated with minimal shortening of the leg, which may be encountered with conservative treatment.
3. The rigid fixation of the fractures by an intramedullary nail permits early weight-bearing.
4. This technique preserves the blood supply to the fracture site and retains the reamed bone fragments to produce a bone graft at the fracture site. This enhances fracture healing and reduces the rate of delayed or non-union that occurs with other surgical methods to a minimum.

Therefore, closed intramedullary nailing of tibial shaft fractures should be considered as the treatment of choice for high performance sportsmen, since it preserves their precious functional capacity.

Yours faithfully,

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