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Editorials

Warm up

I see that the recent House of Lords Science and Technology Select Committee has released its report on complimentary and alternative medicine (CAM).¹ For almost two years this committee considered the submissions put to it, examined the evidence, and took expert advice. The report ultimately had something for everyone. Not surprisingly they found that CAM requires more detailed study, that CAM practitioners need to be regulated, their training scrutinised, and that CAM should be integrated into mainstream health care.

In sports medicine, we increasingly are embracing CAM techniques. Perhaps due to the long history in many countries of musculoskeletal medicine, a tradition of manual medicine has developed and is used by many sports medics. In addition, dry needling techniques for pain or muscle spasm bear curious similarities to acupuncture. Our close involvement with physiotherapists, soft tissue therapists, osteopaths, chiropractors, podiatrists, and the like means that we have a constant exposure to some of manual therapy disciplines. While not embracing all of the CAM disciplines, such as Bach flower therapy, nevertheless I suspect sports medicine is actually well placed in assist in developing the understanding of the overlap between CAM and mainstream medicine.

Part of our use of these therapies in the past has been driven by need. To enable an athlete with an acute injury to perform well at a competition we often resort to needling, muscle energy, and other remedies. Athletes are not interested in acquiring a detailed understanding of the pros and cons of therapy but rather want to do "whatever it takes" to get on the field.

Having had this practical experience, it is the challenge of sports medicine to take the next step. To perform scientifically credible studies to prove or disprove the effectiveness of what we do. Sports medicine occupies a unique position within this area, straddling the divide between mainstream and alternative medicine. We can bring the scientific rigour needed for studies to proceed and answer these important questions. Sports medicine clinicians should consider applying for the research funding suggested by the House of Lord's Committee and expand the evidence base of our discipline.

¹ House of Lords Select Committee on Science and Technology. *Complimentary and alternative medicine*. 6th Report 1999-2000. London: Stationery Office, 2000. (HL 123.)



No pain, no gain. The dilemma of a team physician

In my hometown, a professional footballer has recently sued a club doctor and his football club, alleging that the complications of a local anaesthetic injection given during a football match resulted in a permanent and career-ending injury. As a now-retired football club doctor (over 15 seasons), this news sends shivers up and down my spine. How many similar injections did I administer over my career? Too many to count I suspect. Regardless of the merits of the allegations made in this case, the issue is a very real and concerning one for sports physicians worldwide.

Although clinicians outside the realm of sports medicine are often critical of the treatment administered during professional sports events, few know or experience the reality. It seems that any doctors watching a televised professional sports event have a licence to comment publicly on what they may or may not have seen. I can still remember the vehement letter to the editor of a daily newspaper over the management of a supposedly concussed player who was allowed to continue playing that day having been carried off on a stretcher. When it was pointed out to the neurosurgical author concerned that the player was not concussed at all, he was only grudgingly more

obliging. It is a pity that Hippocrates did not add to his list the aphorism, "*don't criticise what you don't understand*".

The use of local anaesthetic injections to reduce pain enabling a professional player to continue during a match has been done for many years. Typically it is done to reduce the pain from a soft tissue injury that restricts the player. No sports physicians would condone the use of such agents to mask or aggravate a serious injury or where a long term injury may result. It is not the case that the end justifies the means. The game must always come a distant second to the players long term welfare, and the doctor must always remain an advocate for the player's medical interests.

Although the guiding principle that we all follow in such situations it to preserve health and avoid long term complications, nevertheless there are many soft tissue injuries where local anaesthetic injections may be utilised as part of a return to play strategy. The difficulty however is not in the action, it is in the justification. What is done in the heat of battle may have to be explained in the cold harsh light of a courtroom. In a game situation, informed consent and explanation to the player has no real meaning. When there is big-match pressure, financial rewards, coaching

demands, and a player's desire to return to the game outweighing common sense, such actions may be seen by lawyers as being coercive. To ask a player to sign a consent form is simply not practical. Some media commentators have even suggested players sign a general consent or medical release form at the start of the season. Such concepts are not ethical.

The other problem that many club doctors face is that when dealing with a team of players with injuries during the match, the documentation may not necessarily be up to the high standards of the medical care given. As the medicolegal pundits say, good notes = good defence, bad notes = bad defence, and no notes = no defence. From practical experience, I know that I might be faced with 20 injuries during a match—how can I keep contemporaneous notes on all such situations? With the case outlined above, the fear of being in a courtroom with nothing more than your own recollection of what happened is a recipe for disaster.

As well as providing individual athlete care, as team physicians we are often involved in the evaluation of new treatment methods. Such situations can arise directly when an athlete wants to use a particular dietary supplement or indirectly when a coach asks you about a particular therapy. The latter situation often arises when another team is reported in the media as using say hyperbaric oxygen, for example, and coaches seem to have a “keep up with the Jones's” mentality. How can we be balanced in our approach when we know there is no evidence to support such a therapy? Once again mainstream medicine has little understanding of this role that sports medicine plays.

Orthodox medicine is often less about “team” performance than about individual care.

Team physicians need to be credible within their teams. Their professionalism must be respected. This in part develops by taking a considered and thoughtful approach to such issues. A genuine attempt should be made to evaluate such therapies when requested. We must also be forthright when required and voice our concerns to the correct people when an issue of medical safety arises. I have often found those coaches when confronted by the negative scientific evidence on a particular therapy of interest often respect that stand point. Coaches are often motivated by the need to have considered all the options rather than hanging on a particular approach. Medicos however often see the same situation as threatening to their role in a team structure if alternative therapies are raised. Often there are no correct answers to be given on safety or efficacy when unproved therapies are suggested.

We need to embrace the issues and not be unnecessarily critical. In addition to following our treatment evidence base, we also need to remind ourselves that all doctors make mistakes. It often surprises me as a team physician in professional sport that more mistakes are not made given the pressure cooker atmosphere and need for split second decisions. In addition, even proven therapies, such as non-steroidal anti-inflammatory drug use in arthritis, carry significant morbidity and mortality. All these aspects of care must be factored in to the medical approach utilised by a physician. Despite this we must always be ready to face the challenges head on and ensure that our athlete medical care remains optimal.



Ethics, molecular biology, and sports medicine

As has been widely reported, the internet has the potential to bring us closer to the cutting edge of sports medicine. This week in the journal *Annals of Neurology* a group of researchers from Leiden in the Netherlands published a fascinating study that has significant implications for the study of sport related brain injury, and in particular, the so called second impact syndrome (SIS).¹

The paper is only available in an online format at present, but in due course the print version will arrive after the usual delays with postage and shipping. We find the same thing with our online full text journal. A forthcoming issue can be posted on the web site ahead of print publication. Rapid response correspondence to articles can already be underway even before the print version arrives. It is conceivable that this editorial will be online at the *British Journal of Sports Medicine* web site before I receive a print copy of the other journal! Welcome to the future of publishing.

The Dutch paper reports the association between delayed cerebral oedema after minor head trauma and an abnormality with the CACNA1A calcium channel subunit gene. It is known that in people predisposed to familial hemiplegic migraine, attacks of migraine may be triggered by trivial head trauma and such attacks may be accompanied by coma caused by cerebral oedema. Calcium channel subunit mutations of the CACNA1A gene on chromosome 19 were associated with this phenomenon. A single amino acid substitution at codon 218 (S218L) resulted in this mutation.

This finding may have a number of important implications for sports medicine. First, the spectre of SIS has

always plagued the concussion literature. If proved, the Dutch study suggests that there may be a small group of patients with a specific genetic abnormality that may put them at risk of this vanishingly rare phenomenon. Proponents of SIS have argued that recurrent concussion is the main risk factor, but detailed analysis of published cases has failed to find a compelling argument for this position.² It has been known for decades that even a single episode of brain injury can provoke lethal cerebral swelling, a phenomenon more common in children than adults. The Dutch paper may provide the missing link to explain why we do not see more of SIS given the high incidence of concussion injury.

Secondly, the role of molecular biology in teasing out some of the difficult problems in sports medicine is starting to be felt. In other branches of medicine, new genes and genetic haplotypes are associated with ever increasing numbers of diseases. In the field of sporting head injury, Barry Jordan, a sports neurologist from New York, has shown that the Apolipoprotein E4 (ApoE4) allele is a risk factor for chronic traumatic encephalopathy in boxers.^{3,4} Other groups have shown that ApoE4 is also associated with poorer outcome from head injury.⁵

This leads to a tangled web of ethical issues for sports physicians. Do we now screen our athletes for these known genetic markers of adverse (and usually lethal) outcomes from brain injury? As well as the risk to the athlete, there may also be important management information for the clinician. For example, if an athlete who is ApoE4 positive suffers a concussion, should we be more conservative in his or her

return to play protocol? Should such an athlete be more vigorously monitored over their career from the standpoint of neuropsychological testing? With the findings from the Dutch study, should an athlete with an S218L calcium subunit abnormality play contact sport at any age?

Will informed consent to participate in sport be contingent on such abnormalities being tested for? I wonder how the lawyers will deal with this new information. I suspect professional boxing may well be the testing ground for some of these medicolegal issues. The risk in boxing is clear and the ApoE4 data are robust enough to make it a valid concern at the present time.

These matters may well be the ethical dilemmas that cutting edge technology delivers us at the moment; however, the future is closer than we realise. Although

sports medicine is often seen as a “Cinderella” specialty within medicine, the application of the blow torch of science should make mainstream medicine realise that the advances made in research laboratories apply equally well to athletes.

- 1 Kors E, Terwindt G, Vermeulen F, *et al*. Delayed cerebral edema and fatal coma after minor head trauma: role of the CACNA1A calcium channel subunit gene and relationship with familial hemiplegic migraine. *Ann Neurol* 2001; published online 2 April.
- 2 McCrory PR, Berkovic SF. Second impact syndrome. *Neurology* 1998;50:677–83.
- 3 Jordan B, Relkin N, Ravdin L. Apolipoprotein E epsilon 4 associated with chronic traumatic brain injury in boxing. *JAMA* 1997;278:136–40.
- 4 Jordan B. Genetic susceptibility to brain injury in sports: a role for genetic testing in athletes? *Physician and Sportsmedicine* 1998;26:25–6.
- 5 Teasdale G, Nicol J, Murray G. Association of Apolipoprotein E polymorphism with outcome after head injury. *Lancet* 1997;350:1069–71.



The passing of “The Don”

“and when the one great scorer comes to write against your name, He writes not that you won or lost, but how you played the game”—GRANTLAND RICE

It seems appropriate to paraphrase the words of an American sports broadcaster to describe the passing of Sir Donald George Bradman. He was an extraordinary man in a time of extraordinary cricketers. Even today, more than half a century after his retirement, the mere mention of his name fills my breast with national fervour. Every boy in Australia playing backyard cricket imagines himself as “The Don” making a ton in an Ashes match. Those who are swayed by statistics have no alternative but to worship at the Bradman shrine purely because of the record: 52 tests, 6994 runs at an astonishing average of 99.94, with 29 test centuries to his name. He bestrode the game of cricket as a colossus. Mere statistics, however, do not do justice to his influence on the game. The infamous bodyline technique in the 1930s was designed to counter his run scoring prowess. It was partly successful—he only made one century in that series; however, the furore caused by this approach almost caused Australia to secede from the Commonwealth!

In a rare interview in 1994, The Don was asked whether he had any regrets about his career or unfulfilled cricketing ambitions. He answered in his characteristic manner: “None. I did not set out with any preconceived goals or ambitions and I achieved far more than I could ever have wished . . . hopefully the game of cricket was enriched by

my interpretation of its purpose and character . . . my greatest satisfaction is that I believe at the same time I was able to enhance the sportsmanship for which cricket has been famous since time immemorial”. How prophetic were those words and how must he have felt to see the reputation of the game of cricket tarnished by the recent match fixing scandals.

Tony Greig tells a fascinating personal experience of The Don that shows The Don’s characteristic humility. When Greig arrived in Adelaide in 1972 for the Rest of the World tour match, a chap who introduced himself as “Don” met the team at the airport. He loaded the player’s bags on to the bus, drove the team to the hotel, and helped them to their rooms. It wasn’t until the following day when Greig saw the reporters chasing their “driver” for an interview that the penny dropped and he realised just who the driver actually was. I wonder whether he tipped him?

At the memorial service, conducted in Adelaide’s St Peter’s Cathedral, the millions of Australians transfixed to their television sets saw the Bradman family convey the story of a man who handled fame modestly, craved the quieter life, always put family before self, and who preferred to be remembered as an ordinary man not as a hero.

Vale Don Bradman. The game is the lesser for your passing.

P MCCRORY

Editor