Olympic athletics medical experience, Seoul – personal views

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The medical team to look after 107 track and field athletes and 23 officials consisted of two doctors and four physiotherapists.

After two years' prior fact-finding, detailed planning for the games started many months in advance. With final team selections only four weeks before travelling, all hopefuls had to complete appropriate immunizations, fitting in with training schedules and competition commitments as best they could. Notification to probables had been circulated one year earlier, plus announcements in athletics magazines.

We were advised that Japanese B encephalitis, a mosquito-borne infection was a particular local risk because of the rural nature of the training camp in Japan, surrounded as it was by paddy fields. The athletes acclimatized there for two weeks in September and October. The vaccine was expensive and not freely available. The initial sole suppliers, the army, transferred the operation to a civilian supplier who doubled the price. Uptake was partial but no illness resulted, though mosquito and other insect bites were a nuisance. Hepatitis B vaccine was donated and we recommended it due to the wide international travel undertaken by our athletes.

A team booklet was produced, which gave advice on relevant topics including immunization, jet-lag, acclimatization, food and drink, a warning about AIDS and a suggestion as to a personal travel kit. It was a deliberate policy not to encourage self-medication

since we thought it reasonable and prudent to exercise as much control as possible on athletes' medications. Anyone with a resting pulse of five to ten counts higher than the norm was advised to see the doctor. Crutches seem to be an almost inevitable necessity on long team trips. They are awkward to carry and the donation by the Bath Institute of Medical Engineering of small but ingenious folding crutches carried in a case was a godsend.

All team members required medical examination before travelling to Seoul,

but selection only took place four weeks before departure and our athletes were then spread worldwide. The logistics of accomplishing these medicals was something of a nightmare with our doctors pursuing athletes at every available opportunity. Happily many of the athletes' GPs appeared willing to complete the forms free of charge. The examinations offered another opportunity to examine the various health foods, vitamins and protein supplements which athletes took.

Physiotherapy treatment at Seoul.

Nihon Aerobics Centre – acclimatization

The facilities at the training camp were superb, with English food provided in a first class restaurant that we shared with the USA track and field team. Acclimatization was helped by Temazepam. Some allergic rhinitis was due to the deodorant wick placed in the chalets. However, boredom was an important factor. The availability of a wide variety of physical activities, including tennis, volleyball, table tennis, cycling, swimming etc. did add to the number of over-use injuries in athletes attempting unfamiliar activities, but overtraining was the major problem.

The usual coughs and colds appeared, but one athlete arrived pyrexial off the plane, with shoulder pain on respiration. His lungs were normal to auscultation and a chest x-ray was also clear. He was isolated, treated with antibiotics on the 'We have only got 14 days until his race and can't afford any delay' basis: 48 hours later he felt better but was tender over the liver. All blood tests, including LFTs were normal. We were now down to 11 days to start time, but walking to breakfast made him short of breath with some abdominal pain. Fortunately the aerobics centre could do a stress ECG, and no abnormality was found. But – how soon, how fast, to allow a return to training with now only nine to ten days to go? The athlete reached the second round of his event. He was subsequently found to have a high Cossachie titre.

An athlete with a stress fracture of the sacroiliac joint produced by increased speed training loads after selection, had to be trained in a wet jacket. A tightrope of 'when to introduce running and how much' was walked by athlete, coach, doctor and physio. The athlete completed the heat but failed to make the final.

Pain appeared over the navicular in another athlete and a bone scan in a Japanese hospital confirmed a stress fracture. The athlete was recommended not to train or take part in the games, but insisted on her right to run in one heat. We did contemplate having her withdrawn but a conference with headquarters orthopaedic surgeons felt this was a little extreme. There were still some problems several months later with this athlete so perhaps that first eight weeks of rest is vital for adequate healing.

A foreign athlete with a clinically obvious stress fracture of the tibia was recommended not to run. A few weeks previously his father had had a coronary and the only thing keeping him going was the thought of seeing his son on television in the Olympics. This

athlete started his race but dropped out after a few laps. Who was right? The ethics of each case are individual and the athlete's own needs must hold some sway.

How should we handle an athlete who is under a research dietetics department and has had one intravenous infusion of vitamins from them and now had two more to go? The IV injections must be given over 35/40 minutes to prevent reactions and we only have a bedroom or a weights room as a surgery. The dietetics department is a reputable university department so bedroom, butterfly IV needle and vitamins are provided. Fortunately the athlete felt the whole procedure too complex and the benefits too nebulous to have the third treatment!

Chronic problems of several months' duration are now expected to be healed in a few days: the chronic rectus femoris strain where all one can do is to maintain stretching, ultrasound and to reintroduce running as a skill, building up to speed a few days before the first heat; the scar tissue that ruptured – healing demanding rest in one position, the sport demanding the opposite. With only a few days before competition, such cases require hard work from the whole physiotherapy team, psychological support from the medical team and co-ordination with the coaches to replan training.

Several athletes arrived with pre-existing conditions, some of which got worse, others improved. It is probably fair comment to say that it is misplaced optimism to hope for Olympic level recovery in a significant injury occurring six weeks or so before the event. However, the determination merely to appear in an Olympic stadium is so fierce that a decision to withdraw three to four weeks before the event with recovery in sight is almost impossible.

Finally, one athlete flew out his own doctor to try an unpublished form of treatment. We in the medical team were expected to take responsibility for the consequences of this treatment, even though on closer questioning, it appeared that no trials were being conducted to establish the validity or not of the treatment. It was agreed that we could not stop athletes having treatment from whom they want, but equally we could not take responsibility for that treatment, especially if no published papers or trials had been written about the treatment. This ethical dilemma solved itself when it became obvious that the side effects of the treatment balanced against training at that stage were incompatible.

The physiotherapy area facilities were very good – with large, well lit room, access to ice, lots of towels and hand washing facilities in the room.

We had on loan two portable treatment couches, two combined treatment units (ultra-sound and interferential), one combined unit, one laser and the BAAB's own ultrasound. All the electrotherapy equipment except the last mentioned was mains or rechargeable battery operated. We also had a step-down transformer which faulted after two days of non-stop action charging up the athletes' compact disc players!

Recommendations for future training camps:

1. More advice needs to be given to coaches and athletes on warm-up and cool-down procedures and the use of showers and jacuzzi to relieve stiffness.
2. Massage – we carried out an enormous number of non-specific massages. We believe in the proper use of massage and fully appreciate its psychological benefit. We really wonder if two, in some cases three, massages a day are necessarily beneficial to the athlete or whether they are the best use of a physiotherapist. Are they the best way of helping the athlete? The whole area of massage needs to be studied to ensure that we are providing the best possible physiotherapy support in a training camp.

Seoul

Management had planned our arrival in Seoul after the opening ceremony to reduce pre-competition stress. The medical team divided into two – one doctor and two physiotherapists in the village, one doctor and two physiotherapists at the warm-up track.

The facility provided at the Olympic village was the lower floor of a flat, comprising one large room with three treatment couches, a small room which doubled as doctor's surgery and sick bay. Loads of towels were available, ice was readily available as we had a fridge in the main room. Our battery operated equipment proved invaluable as there were marked surges in the current supply. We tended to charge the machines over night and only use them on battery power when treating.

The track team went down with the first athletes usually catching the 6.30 am bus. Changeover of the two teams took place at about 1 pm and the track team returned after warm-down anything between 6.30 to 11.30 pm to help with evening work in the village. Familiarization with transport, ice and drink supply and the stadium facilities took place as soon as we reached Seoul.

Facilities for medical and physiotherapy care at the Olympic stadium were abysmal. No accommodation for accompanying medical teams had been provided, and all treatment was carried

out in the open air, competing for the limited amount of shade available under awnings with other teams. At the track it took us two days to establish our base under a canvas awning. We found our portable couches invaluable and we could not have operated at the track without them. Ice was in supply, and we were totally self-sufficient with our battery powered equipment. The usual problem at our base was that we quickly became the meeting point – repository for all the athletes' gear, distribution point for packed lunches, as well as haven in a storm and last, but not least, the physio treatment area! Despite assurances on the day before competition from the stadium medical officer, track clearance of injured athletes was virtually non-existent. The majority of stadia were never planned with medicine in mind, and the first major endurance event – the women's marathon – appeared to have no Korean medical care at the finish. One foreign decathlete's hand was sewn up by our doctors whilst his medical team were going the long way around the stadium to try and reach him. One of our medical officers carried a collapsed foreign marathoner in his arms 40 metres up and down stairs to reach the medical room. Subsequent complaints led to only marginal improvement as the fortnight went on.

Doping

The first major shock was to return after the decathlon at 10.30 pm to find we had a positive dope test on our hands. It was an athlete who had already been tested negatively some seven to eight times over the past year, the last time only six weeks previously. We were informed that another athlete, not track and field, was also tested positively. One case was serious, the other, not. But the IOC refused to inform us of the nature of the drugs until after the second test. Thus the athlete was dragged from bed, told of

the charge but not its nature (Ben Johnson's dismissal had already occurred). As no-one knew the exact charge, the athlete was left out of the relay team and we had no idea for what we were searching. The Walk started early the next day, so the track team were off on the 6 am bus, and the village doctor had to be at the repeat dope test for 6 am as well. After a day's interviews we still could not find a source for the pseudoephedrine at 8.4 parts per million that had been discovered.

Then we recalled a paper suggesting that some ginseng products in America had been found to contain traces of pseudoephedrine. We knew our athlete took ginseng, we knew the label on the packet indicated no known banned drugs, but we could find no other source of pseudoephedrine. Thus we allowed a previous negative test to be retested and this too contained even smaller traces of pseudoephedrine. In the early evening we met with a barrister, and at approximately 11.30 p.m. we were ushered into the International Olympic Medical Commission where we sat as part of a large rectangle with immediate French, German and English translation facilities available to present our case. It became obvious that several testing labs were aware of possible unlabelled contaminants in ginseng preparation (pure ginseng is not prescribed) and so our defence was accepted.

Certainly a hundred man hours in one day must have been spent on testing and trying this case, for a dose of pseudoephedrine that would not even be reported positive on in the UK, i.e. below 10 parts per million and a dose that could hardly be capable of improving performance. Furthermore, there was no doubt in our minds that the press knew of this test almost as soon as our headquarters and certainly way before the BAAB medical team were informed, a most trying breach of protocol.

Physiotherapy treatment at Seoul.

Osteitis pubis

The minor problems kept appearing, but one of the most difficult was to arrive for the changeover of medical teams at about mid-day to be greeted by 'Doc' X cannot warm-up for the Olympic final without getting abdominal pain. Oh, and by the way, you've got just eight minutes to final call-up'. The athlete was too experienced to be destroyed by nerves, had no bowel symptoms, and apparently had had mild ache for two weeks since hard training in another holding camp in Japan. The supra-pubic site of pain suggested traumatic osteitis pubis symphysis which was confirmed by pain on squeezing a fist between the knees and resisted long and flexed adductor contraction. The only way to get him into the final would be a local injection into the pubic symphysis. What harm?

After a rapid discussion with the athlete, we decided to inject the local anaesthetic. The team manager booked him through the first call and his final fitness test was completed in the call up system, minutes before he went on track.

The problem was not over because X wanted to run in another event in two days time – four hard races back to back – but at least we had two days' rest. Would the hydrocortisone work?

- Heat 1: Warm up; No trouble until final sprint work. The system is geared up – local injection. He qualifies.
- Heat 2: Has the steroid worked? No. Once again final warm up causes pain. We staved off this session with local, then perhaps the steroid will have had time to work.
- Semi-finals: Once again we have the same problem but this time in a long talk with X he is told that enough is enough and that he could retire now with a clear conscience. What else has he to prove and to whom? X points out that he has trained for years to climb this particular Everest. What hazards can be envisaged?

Traumatic osteitis pubis means he will be out of athletics for some 7 to 12 months anyway. Most soccer players after this particular condition have to learn to play with some degree of aching. If it is going to respond to joint tendon repair it will be cured by operation without injections hazarding the situation. And finally there are those few but persistent groin strains which remain undiagnosed and have never ever been injected. X was sent

off to talk with his coach and his manager, both of whom pointed out to us that he had received several poison pen letters before the games and would be subjected to very severe criticism in Great Britain if he withdrew and that he definitely should be helped to compete. This attitude was very surprising from his coach who had always put his athletes' health before results, so therefore carried more weight. As a team, athlete, manager, coach and doctors we decided to let him try for the ultimate in sport. There could be no substitute individual, there could well be no other chance for Olympic gold in the future. So a further injection of 1 per cent Xylocaine 1 ml for the semi-finals and the finals was administered that enabled him to get an Olympic medal.

On the semi-finals day, he had showed three non-infected looking bites on his hip and large inguinal glands had appeared. Arrangements were made for him to be assessed at home by an orthopaedic surgeon who lived nearby. X duly returned home arrived sore and unwell – with an ESR of 60. This settled with bed rest. The only other positive finding was a raised anti-staphylococcal titre. That the injections had infected him was considered likely but the surgeon had noted that he had no pain or tenderness locally associated with the pubic symphysis, which suggested that the insect bites and glands must be considered significant. X was able to resume training some four to five weeks after the games.

The other medical problems became run of the mill, but two further events were of interest. One injured decathlete threw a personal best in the javelin and then calculated the reality of running with this injury versus the running times required to get a medal. All calculations were correct apart from the unknown – a personal best in the 1500 m from an unexpected source! The second was picking up our experienced marathoner, dehydrated and failing to sweat. This race should not have been run in the heat of the day just to benefit American TV. The drinks at the feeding stations had stood in the sun so long that they were hot. To cap it all, eight marathoners were selected for dope testing! At least the two and a half hours wait gave time to drain the sub-ungual haematoma, treat the blisters and rehydrate the athletes, who at the end had had enough and wanted to return to the village, but there was no organized transport at that time! So we joined the crowds outside to queue for a taxi and glanced over our shoulders to see the fireworks of the closing ceremony.

Thus the closing ceremony had been missed as well as the opening ceremony and only a few athletic events

Table 1. Track and field athletics, Seoul Olympics, 1988

Medical consultations

Athletes

Male: 109 consultations with 38 (64%) of 59 athletes
 Female: 112 consultations with 35 (73%) of 48 athletes
 Officials: 19 consultations with 11 (48%) of 23 officials

Total

240 consultations with 84 individuals

of which, 221 consultations with 73 (68%) of 107 athletes

Physiotherapy treatments

Individuals treated: Athletes: Male: 52 Female: 43
 Officials: Male: 4 Female: 2 Total: 101

Treatments given: Athletes: Male: 458 Female: 419
 Officials: Male: 4 Female: 2 Total: 883

Treatment modalities:

Electrical: interferential 215
 ultrasound 188
 laser 86
 Total: 489

Ice 42

Exercises 96

Strappings 71

Manual: PNF etc. 101
 Mobilizations 78
 Total: 179

Massage: specific 231
 nonspecific* 388
 Total: 619

First aid, chiropody etc 14

Total, all treatments: 1510

101 patients received 1510 treatments, average 14.95 each.

1510 treatments in 883 attendances, average 1.71 modalities each.

*nonspecific massage = massage given where there is no underlying injury or medical problem

had been witnessed by the medical team and no other events. The support and comradeship of the medical team is thus essential over a long gruelling four weeks. Occasional help from HQ medical staff helped us over some impossible times and gave us one or two days off in a month – but that's sports medicine!

What are the lessons that we have learnt?

1. Meticulous preparation for medical self-sufficiency always pays off.
2. The advice booklet served its purpose. There was a low incidence of travel and acclimatization problems.
3. Record-keeping of a high order is not only professionally satisfactory, but could lead to a valuable reference source as long as computerized facilities to store and analyse these results are maintained.
4. Athletes have unlimited ingenuity in finding ways to injure themselves. Eternal vigilance as to the dangers of the environment is needed.
5. Olympic athletes have a tendency to

increase their training over those last few weeks and run into over-training problems. Indeed, some were so keen to test themselves at high levels in training and pre-Olympic competition that they failed even to make the final test and reach the start line.

6. As long as the present drug rules exist, it is apparent that preparations hitherto seen as safe are not as safe as we thought. The benefits and possible dangers of dietary additives must be explored and discussed with athletes and coaches.
7. The care of athletes is immensely improved when there is the opportunity for regular meetings and discussions between team officials, coaches and medical teams.
8. We could argue the ratio of physiotherapist to athlete for ever and still not provide enough. We feel in such a continuous event that a manageable number is one physiotherapist to twenty athletes. We would have struggled in Seoul had we not had HQ physio staff assistance on several crucial occasions.

Thus, I would like to suggest that there is now a place for using bouncing and ballistic stretching alongside the well recommended yoga and PNF stretching. Its place and its reason for use must be carefully ascertained. The ultimate goal of stretching should be to achieve functional range—not potential range.

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Erratum

Dr Malcolm Read writes to point out our printing error in Vol. 23:2 (June 1989), page 78. The correct text should read 'Pure Ginseng is not proscribed' (not 'pre-scribed'). We apologise for this error. Ed.

Book Reviews

Determination of the Moments of Inertia of the Human Body and its Limbs

W. Braune and O. Fischer
 Springer-Verlag, Berlin, 1989, DM 85,
 84 pp, ISBN 3 540 18813 4

'Determination of the Moments of Inertia of the Human Body and its Limbs' has been translated from the German by P. Maquet and R. Furlong. It describes the procedures and presents the original results of the classic experiments by W. Braune and O. Fischer in 1892. The work was carried out to determine the forces exerted on and by parts of the body during walking which were prepared and subsequently published in the much acclaimed work 'The Human Gait'. This slim volume is comfortable to read in translation and is beautifully prepared and presented. It is a specialist's book and will be of

interest to serious students and practitioners of biomechanics, ergonomics, medicine and related disciplines.

W. Bell PhD

Year Book of Podiatric Medicine and Surgery 1988

Richard M. Jay
 Year Book Medical (Chicago, London),
 Hardback, 330 pp, £31.50,
 ISBN 0-8151-4859-3, ISSN 0742-194X

Richard Jay and his contributing editors have searched the multitude of US and foreign medical journals to present us with abstracted articles and research papers in seventeen chapters of exceptional quality. Chapters cover paediatrics to arthritis, taking in biomechanics, sports medicine, traumatology and system disorders

affecting the foot, en route. Articles are well illustrated with clear X-rays and photographs. At the end of each article the editor comments on the significance and quality of the work, offering succinct criticism.

With the wealth and diversity of material contained within the book, it is perhaps best used as a reference stepping stone for those wishing to further their own study or research. As a whole the book would prove invaluable to a modern-day chiropodist/podiatrist as well as the orthopaedic or podiatric orientated physician. To a sports medicine practitioner only certain chapters would be directly relevant.

This volume is probably best suited to the shelves of a medical reference library, but certainly would not gather dust.

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