

Sports injury management

The management of sports injury has advanced in tandem with the growth of medical science, particularly over the last three decades, writes **Dr Eanna Falvey**

Exercise is promoted to offset many of the adverse effects of modern western lifestyles as well as being a prerequisite for normal physical development in children. Obesity with a commensurate increase in cardiovascular disease (CVD) is the sequelae of a society where excessive caloric intake and physical inactivity result in a spiral towards ill-health.

Exercise is, however, associated with its own potential complications. Sports and recreation-related injury (SRI) has a significant impact on health service resources. If improperly managed, SRI hampers further activity of the injured patient thereby resulting in the sedentary lifestyle that it was hoped to avoid. There can also be a significant impact on other areas, both in the home and at work.

The management of sports injury has advanced in tandem with the growth of medical science, particularly over the last three decades. Improved diagnostic tools, minimally invasive procedures, surgical techniques and subsequent rehabilitation programmes have advanced such that serious injury no longer means an end to physical activity.

Evidence-based practice is informed by extensive research which has traditionally occurred in Australia and the US as well as mainland Europe.

It has become increasingly obvious that addressing all aspects of injury in management is vital to a successful outcome. The treating physician must first secure an accurate diagnosis. Ready access to radiological services means this may be confirmed by the most appropriate investigations. Delay at this stage in the treatment pathway risks an acute problem becoming a chronic one.

A close collaboration between the sports physician and musculoskeletal radiologist is essential so that the most relevant and pertinent information is clear to both specialists.

The highly pressured and under-resourced public sector makes availability and access to radiology difficult for what are regarded as non-critical cases. Where sports injuries are the priority, the time and resources are available to perform the most appropriate radiological investigations and guided interventions. This also avoids unneces-

sary (and costly) investigation; the use of radiology to confirm a working diagnosis has a far higher yield than blanket investigation often employed in less specific settings. The surgical management of sports injury suffers a similar fate in the public sector with long waiting lists for diagnostic procedures such as arthroscopy. Given the burden of waiting lists for joint replacement surgery this is understandable. When these operations are dealt with in the private sector (often as day cases) the potential for early restoration of function and activity offsets to some extent the financial implications of the costs of a private service.

Less than 10 per cent of sports-related injuries require surgery and the soft tissue component of injury has traditionally been considered less serious than fracture. Ligamentous or poorly rehabilitated muscle injury, however, has significant repercussions in terms of time lost from activity and work.

Musculoskeletal training has been identified (in studies in the NHS and more recently in Ireland's National Orthopaedic Hospital) as being one of the areas most poorly taught in undergraduate medicine. Sports physicians working closely with dedicated sports physiotherapists are ideally positioned to deal with patients suffering from a soft tissue sports injury.

Accurate and rapid diagnosis is the key to a successful outcome. When this has been secured, treatment may be implemented and monitored between both specialities.

Arthroscopic cruciate ligament repair

Minimally invasive surgery has become the norm for repair of structures such as the meniscus and anterior cruciate ligament (ACL) in the knee. ACL reconstruction has become one of the most frequently performed procedures in sports surgery and generally has good outcome expectations. Arthroscopy (key-hole surgery) allows a much quicker rehabilitation time as trauma to the joint is greatly reduced. Grafts are taken either from the patellar tendon, hamstring tendon, or more recently artificial grafts have been employed. The latter has been promoted as trauma from graft harvesting is avoided, this is a new technique and has yet to

expand into widespread use and there is limited clinical evidence for its efficacy. It is generally accepted, however, that proficiency in arthroscopic ACL reconstruction requires the operator to perform the operation regularly. A surgeon dedicated to reconstructive knee surgery will thus be more likely to generate consistent results than a generalist.

Recurrent ankle instability

Recurrent ankle instability follows improper rehabilitation of ankle injury in approximately 70 per cent of cases. Appropriate acute management is not difficult, however, rehabilitation is often overlooked. Retraining the joint's positional sense (proprioception) and strengthening muscles responsible for improving joint stability (the peroneal muscles) greatly reduce persistence of symptoms. Sports physicians and sports physiotherapists can work in tandem in this setting to prevent persistence of biomechanical deficits. In a small number of cases despite optimised care, symptoms persist; damage to ligaments may be

investigated and managed with minimally invasive arthroscopic techniques.

Osteochondral injury

The management of osteochondral injuries are a challenge to the sports physician and orthopaedic surgeon. These injuries damage joint articular cartilage and underlying bone, at the weight-bearing surfaces. They can prove extremely debilitating and career threatening for the recreational and elite athlete respectively. Current modalities of treatment are centred on obtaining the healing of a defect with fibrocartilage, generally achieved either by microfracture or shaving of the damaged area. Future directions revolve around the regeneration of native and biomechanically superior hyaline cartilage, directly replacing damaged tissue.

Hip pathology in the young

Degenerative disease of the hip results in total hip joint replacement which is not uncommon in the older population. The latest generation of implants including non-cemented and

alternative hip bearings mean function is restored earlier and at a high level. In suitable cases joint surface replacement may forestall the need for full joint replacement. Improved diagnostic techniques means that early degenerative disease of the hip may now be diagnosed in the younger athlete, potentially preventing progression of degenerative change later in life. Injury to the glenoid labrum in the hip is now more increasingly diagnosed as the cause of chronic groin pain in athletes, and this may be amenable to arthroscopic repair preventing further damage to the area. The long-term outcome of intervention in terms of degenerative disease is as yet unclear.

Recurrent hamstring injury

Recurrent hamstring injury is particularly common in kicking sports and those sports requiring explosive acceleration such as sprinting. A review of scientific literature in this area shows that more than a third of hamstring injuries (34 per cent) will re-occur. This is thought to result from improper rehabilitation of the hamstring muscle.

Strength deficits in the injured muscle means it is unable to counter the force of the stronger quadriceps muscle against which it must contract while running. On clinical examination, while these deficits may be subtle, isokinetic testing clearly delineates any weakness. Rehabilitation and back to sport guidelines may be guided by improvements in this testing, ensuring a safe return to activity.

Rehabilitation post surgery

Accelerated rehabilitation pre and post joint replacement surgery has been demonstrated to improve outcome. Patients mobilise earlier and return to pre-operative levels of activity faster.

A close working relationship between surgeons and physiotherapists working in the same institution facilitates progress.

References available upon request

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