PHYSIOTHERAPY IN THE MANAGEMENT OF SPORTS INJURIES

GENNY TEOW

INTRODUCTION

SPORT INJURIES can be divided into 3 main categories:-

1) Extrinsic injuries those involving external violence eg. body contact with an opponent or goal post, being struck by a ball, a bat or a stick. These commonly result in haematoma, ligament sprains and tears and fractures of bone.
2) Intrinsic injuries basically caused by clumsiness or inco-ordination and at times under some external influence. These give rise to muscle component strains and tears and avulsion fractures.
3. Injuries caused by unaccustomed use and overuse. These are similar in pathology but in the former, are seen in the untrained person and the latter, in the trained athlete. These injuries include such conditions as tendonitis, bursitis, joint synovitis and stress fractures.

Physiotherapeutic management of sports injuries should ideally start on the playing field and continued throughout the recovery period. The shortage of therapists has not made this possible and at times lack of proper equipment and insufficient supervised exercises have contributed to unsatisfactory results. The lack of incentive and motivation on the part of the sportsmen can also be a contributing factor to a longer recovery period and lowering of general fitness.

In general, therefore, the physiotherapeutic management of sports injuries can be considered in three stages:-

1. The initial treatment which is essentially First-aid and is usually administered on the playing field, court or gym. In Malaysia, the physiotherapist, does not usually have a role here as most of the first aid is handled by coaches and first aiders with the less severe injuries, the more serious ones being treated by doctors and other qualified personnel.
   Management of less severe injuries will include cold application such as ice, cold water or spirit, application of compression through the use of elastic bandages or elastoplast and support when necessary by slings and strapping.
2. the next stage is the stage of definitive treatment where therapeutic measures are taken in the physiotherapy department to accelerate resolution of the injury.
3. The final stage involves adoption of measures taken to maintain fitness, particularly of the cardio-vascular system.

The injured athlete or player can receive definitive treatment within a few hours, a few days or even after a few months after the injury, depending on the severity and extent of injury and its subsequent swelling and pain or the urgency with which the player is needed to be active again. In this country, sport is considered more a recreational and social event rather than a profession. Hence, physiotherapeutic treatment has often been delayed and this had led to unnecessary complications and discomfort.

Basically, the aims of treatment are:-

i) To resolve the inflammatory process and promote removal of inflammatory products thereby reducing pain and swelling.
ii) To restore joint mobility and proprioception.
iii) To restore muscle strength, power, endurance and extensibility and
iv) To maintain general fitness.

Reduction of pain and swelling of recent injury is promoted by the use of ice, compression, elevation and occasionally, when prescribed by the doctor, anti-inflammatory and analgesic drugs. Once stasis is established, further reduction of

Pantai Medical Centre, Kuala Lumpur.
GENNY TEOW, M.A.P.A., M.P.J.A.M.
Physiotherapist

pain and swelling is accelerated using ice, contrast packs or baths (alternate hot and cold), and/or pulsed ultra-sound.

The choice of heat to accelerate resolution is usually ultra sound for interfascial, intra-muscular and deep joint lesions and microwave (M/W) or short wave diathermy (SWD) for muscular and superficial joint lesions. Frequently a combination of continous ultra sound followed by pulsed sound, or M/W (SWD), followed by pulsed sound is used.

The next stage then involves a gradually progressive exercise program which in majority of the injuries is the most important treatment modality to restore muscle strength, endurance, mobility and proprioception. Exercise is also used as a self-manipulation with the aim of reducing pain. Pain-free movement patterns are established and the patient instructed to "press" into the full range, repeating the exercise a little but often throughout the day, but stressing that exercise should always be performed within the limit of pain and swelling. Exercises are usually incorporated with the application of ice or heat as the relief obtained during the application help facilitate movements.

The fourth aim of treatment is to maintain general fitness and frequently apply to those who are partially incapacitated through a fracture particularly of the bones of the lower limb, rupture of tendon or muscle or a back injury. While the injured area is immobilized or rested, general strengthening exercise are instituted to the unaffected areas. For example a patient with an injured back may still be able to lift light weights in a prone or supine position or propel himself along the gym floor and blanket in a similar position. Specific muscle strengthening can be achieved by the use of weights and pulleys.

There are, however, certain commonly injured joints that merit individual and detailed consideration. The knee and ankle are by far the most commonly injured areas.

THE KNEE

The initial treatment for the knee when there is gross swelling and pain, would be the application of an ice pack with elevation, of the leg. Further reduction of swelling is then promoted with compression bandaging. For this the leg, from mid-calf to mid-thigh, is bound with 2 layers of cotton wool and then by cotton or crepe bandages (Robert Jones type). Rest and elevation is continued until the swelling has considerably decreased. Static quadriceps exercises can be started as soon as the pain has subsided. Bandaging is then reduced to facilitate exercises. Exercises are then progressively graded by increasing the resistance using weights and in the number of times the movement is performed. Static and active quadriceps exercises are emphasised to prevent any extension lag. Knee flexion exercises can be instituted when the swelling has decreased. Persistent swelling can be helped with ultra sound (U.S.) and S.W.D. Support strapping can be used to ensure safety in early movement of the knee as with the ligamentous tear that affect the stability of the knee joint. Further strengthening exercises can include cycling, rowing and knee squats.

THE ANKLE

An ankle sprain is initially treated by immersing the whole foot in ice, followed by U.S. and compression bandage or support strapping. Active movements of the ankles should be started as soon as pain allows. If swelling is not gross, patient can hobble around with a supportive strapping. Exercises are then increased, emphasising on full range of movement. Ultra-sound (U.S.) & SWD can be applied if the swelling persists. Contrast baths (alternate hot & cold) can be used to help reduce the swelling. Further strengthening exercises would include balancing exercises on balancing board or trampoline, heel-toe movements and cycling.

The treatment programme above do not apply initially if there are fractures involved.

Malaysia has still a long way to go in the management of sport injuries both in terms of equipment and trained personnel. Hopefully, this will improve with the realization that sports injuries do require adequate professional care.