

SOFT TISSUE "RHEUMATISM" IN SPORTS

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ABSTRACT

Pain and stiffness of the injured region after prolonged periods of inactivity is commonly encountered following soft tissue injuries in sports. The injury in most of these instances is due to stress failure although occasionally an acute injury with a protracted course in recovery may develop similar symptoms. The most common of these condition are the enthesopathies, that include tendonitis and fasciitis, sprains and strains, bursitis, tenovaginitis and the fibrositis syndrome.

Keywords : enthesopathies, fibrositis syndrome, sports injuries, sprains, strains

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INTRODUCTION

The physical exertions inherent in sports occasionally result in soft tissue derangements, the clinical characteristics of which closely mimic that of soft tissue lesions seen in systemic rheumatic disorders. The derangements are characterised by pain and stiffness in the affected region that are worse after prolonged rest and have a tendency to improve to varying degrees with movement and use of the affected part. The aetiopathogenesis, however, is quite dissimilar. In sports related disorders, the lesion is in most instances the result of stress failure of the tissue due to repetitive mechanical overload inherent in poor training methods or associated minor anatomical anomalies. Occasionally, however, the lesion may result from protracted healing of acutely injured tissues. In systemic rheumatic disorders, these soft tissue lesions are due to spontaneous inflammation arising as a consequence of abnormalities in the immunological system. The more commonly encountered lesions in sports include enthesopathies, tenovaginitis, bursitis, fasciitis, fibrositis, strains and sprains.

ENTHESOPATHIES

Disorders of the insertions of tendons, ligaments, and fascia are common in sports. The insertion of these tissues, the entheses, into bone is a well defined anatomical structure designed to withstand traction stresses⁽¹⁾. This region is well innervated and hence is often excruciatingly painful in diseased states. Mechanically stressing the entheses repetitively beyond the physiological limit results in gradual tissue failure. The damage induces an inflammatory response and a repair process. Unfortunately the continued application of stress results in failure of the repair process and a chronic inflammatory response ensues. Hence the pain is perceived by the patient at the entheses when the affected tissue is subjected to stress or when the site of entheses is palpated.

The common enthesopathies include tennis elbow (lateral epicondylitis), golfer's elbow (medial epicondylitis), plantar fasciitis, patella tendon tendinitis (proximal and distal) and Achilles tendon tendinitis. These conditions are characterised by pain which is perceived when the involved structure is subjected to tractional stresses or the entheses are palpated.

The treatment of these disorders entails the following, avoidance of traction stresses, application of ice to accessible sites to reduce the inflammatory response, use of a splint to rest and relieve the stress to the affected region and use of non-steroidal anti-inflammatory drugs. Passive stretching of the affected tissue also minimises the sudden powerful tractional stresses generated at the entheses when the musculotendinous units contract or when the ligaments and fascia are subjected to load. In intractable situations, intra-lesional injection of steroid and lignocaine often provides rapid relief. It is advisable not to repeat injection more than two or three times as local steroid injections may induce collagenolysis and dystrophic changes and in some instances may be the cause of persistence of symptoms. At crucial sites this collagenolysis could result in total disruption of the tendon tissue and lead to a major handicap. At such sites eg patella tendon and Achilles tendon, steroid injections must be actively discouraged.

When conservative measures fail to relieve symptoms, surgical intervention may be necessary. In certain enthesopathies eg tennis elbow and plantar fasciitis, surgery consists of total division of the attachment of the fascia or tendon at the entheses. In situations where the total detachment of the tendon, fascia or ligament from the entheses is not possible for fear of compromising the function, eg patella tendon tendinitis, the affected tissue must be explored and the damaged and reactive granulation tissue excised. The remaining tendon or ligament is then reconstituted and protected until it is sufficiently healed to withstand normal stresses. Pain relief is complete in the majority of the cases.

TENOVAGINITIS

Inflammation of the tendon sheath especially at the proximal point of entry of the tendon is a common derangement seen in association with rheumatic conditions. Common examples are De Quervain's tenovaginitis and trigger finger. Trigger finger as a sport injury is most common in golfers where stenosis of the fibrous flexor sheath is triggered by local trauma.

Although non-steroidal anti-inflammatory drugs have been advocated in the first instance most patients will require intralesional steroid and lignocaine injection. The injection has to be done carefully into the flexor tendon tunnel and not into the tendon itself. In the event of recurrence, surgery, which

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entails the division of the ostia of the fibrous flexor sheath (the A1 pulley) provides permanent relief.

BURSITIS

The bursa is a potential cavity lined by synovial membrane and is interposed between structures eg bone and tendon or bone and skin to minimise frictional stresses between these structures. Bursitis may occur secondary to rheumatic conditions like gout and rheumatoid arthritis although excessive frictional stresses is probably the most important aetiological factor. The common bursae affected in sports include the prepatellar bursa, trochanteric bursa and retrocalcaneal bursa. The prepatellar bursitis is commonly seen in wrestlers following repeated direct trauma to the knee⁽²⁾. Trochanteric bursitis is seen most commonly in long distance runners and is most probably due to errors in training. A slipping iliotibial band may occasionally be the cause of the bursitis.

Retrocalcaneal bursitis is similarly seen in long distance runners and it is also primarily due to errors in training. However, it has also been observed that minor anatomical abnormalities in the foot predispose the individual to developing retrocalcaneal bursitis. The superficial retrocalcaneal bursitis is due to frictional stresses induced by footwear.

Examination of patients with bursitis may reveal an obviously inflamed swelling if the bursa is superficial. Deep seated bursitis may be more difficult to diagnose and could be misdiagnosed as a chronic strain or "rheumatism".

Rest, non-steroidal analgesics and compression dressing are usually adequate to resolve the inflammation. In resistant cases an intralesional injection of steroid and lignocaine may be necessary. However great care must be taken to avoid injecting into the tendon. Chronic bursitis not responding to the above measures or bursitis that recurs require surgical excision.

In acute bursitis it may occasionally be necessary to exclude sepsis especially if the overlying skin has been abraded. When in doubt aspiration of the bursa and examination of the fluid to determine the presence of micro-organism may be necessary.

SPRAINS AND STRAINS

The terms sprain and strain are used to describe injuries sustained by ligamentous and musculotendinous units respectively. According to the severity of the injury, these injuries are categorised as first, second or third degree injuries⁽³⁾. In first degree injury, the disruption is microscopic and with the exception of minor discomfort there is no loss of function of the injured part. In second degree injury, there is gross tissue damage with associated pain and swelling of the injured area and significant loss of function. The disruption of the tissues cannot be demonstrated objectively. In third degree injury, there is again gross disruption of the affected tissues with pain and swelling and objective evidence of disruption in the form of instability of the affected joint or a gap in the musculotendinous unit is demonstrable. These injuries are significant and cause considerable disability to the athlete. First and second degree injuries respond well to conservative treatment, which should include icing and rest for the injured area for an appropriate duration of time. Non-steroidal anti-inflammatory drugs, compression and elevation of the injured parts are adjunct to the acute management of these injuries. After the initial 48 hours, heat and physical therapy are appropriate. Third degree injuries require prolonged immobilisation until the affected tissue heal. In most instances, this usually takes a period of 6 weeks. In instances where there is complete disruption of the tissue, surgical intervention to restore continuity of the disrupted tissue must precede immobilisation. After securing healing of the affected tissue, a rehabilitation programme is essential to ensure maximum recovery.

Acute ligamentous injuries if inappropriately managed may become a source of chronic pain and disability. This is apt to

occur if the focus of injury was at the origin or insertion of the ligament. In this instance the symptoms would mimic an enthesopathy and the treatment in addition to ice/heat and non-steroidal anti-inflammatory drugs should include an hydrocortisone and lignocaine injection. In the authors' experience the origin of the medial collateral ligament of the knee appears to be the site most commonly affected by this type of chronic sprain.

"FIBROSITIS" SYNDROME

Although we have defined some of the more common soft tissue lesions in sports that mimic rheumatic disorders, there still remains disorders, the understanding of which, is still vague. "Fibrositis" Syndrome is probably the most common of these conditions. Clinically it is a recognisable entity. Patients complain of discomfort and pain in one or more regions of the body and on examination a discrete tender spot is observed in the muscle or fascia or subcutaneous tissues⁽⁴⁾. This has been variously referred to as the trigger point and tender point, the latter probably a more accurate description, as so far we have not been able to define a reflex mechanism to propagate the use of the term trigger point.

The aetiology remains unclear. Current knowledge suggests a combination of a local and physiological disorder related to the central nervous system. It is has been observed in sportsmen and whether it is a sheer coincidence or whether it is due to some excessive strain of muscle or other affected tissue is not clear.

Non-steroidal analgesics do not have significant effect on this condition. Injection of local anaesthetic like lignocaine gives immediate relief although it often recurs once the anaesthetic wears off. Heat modalities like ultrasound have a beneficial effect.

Tricyclic antidepressants like amitriptylene have also been used. The significant relief obtained with antidepressants has helped sustain the concept that fibrositis syndrome may have an aetiology related to the central nervous system⁽⁵⁾.

Until the true nature of this condition is known it is likely to remain an enigma.

CONCLUSION

In this brief article we have outlined some of the common soft tissue lesions in the sporting community. Except in the instance of acute sprains and strains where a sudden significant force causes disruption of the tissues, most of the conditions described are a result of stress failure. Stress failure results from repetitive stresses on the tissues in excess of the body's capacity to adapt, either because of an inherent faulty training method or contributed by minor anatomical abnormalities in the tissue. Although the treatment of these various condition has been mentioned, measures to prevent stress failure must be incorporated into the treatment programme. The training programme should incorporate suitable stretching exercises before and after athletic activity and also should include interval training. This latter technique allows a period of rest during which the tissue is able to recover from any injury and adapt to the stresses applied. Anatomical abnormalities must be compensated by appropriate orthosis. A well regulated training programme should make sport an enjoyable activity.

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