

ABSTRACT

Musculoskeletal pain is an extremely common complaint of patients seeking medical treatment. Most of the conditions are benign and non specific. Most do respond spontaneously and require little therapy. In most instances, the cause is not serious and the therapy is conservative. Surgical management is often very successful if indicated.

The common musculoskeletal pain seen in orthopaedic clinics are: (1) Neck and Shoulder pain: The conditions that give rise to pain in the neck and shoulder are cervical spondylosis, cervical myelopathy and radiculopathy, adhesive capsulitis, rotator cuff tendinitis and ruptured rotator cuff; (2) Pain in the Upper Limb: The conditions like epicondylitis, carpal tunnel syndrome and tenosynovitis (trigger fingers and DeQuervain's tenosynovitis); (3) Low Back Pain: This can result from lumbar spondylosis, prolapse intervertebral disc, lumbar spinal canal stenosis and osteoporosis; (4) Lower Limb Pain: anterior knee pain (chondromalacia, osteoarthritis) and plantar fasciitis are very common complaints.

INTRODUCTION

The common musculoskeletal pain seen in our clinic will include the following conditions:

1. Neck and Shoulder pain: The conditions that give rise to pain in the neck and shoulder are cervical spondylosis, cervical myelopathy and radiculopathy, adhesive capsulitis, rotator cuff tendinitis and ruptured rotator cuff
2. Pain in the Upper Limb: The conditions like epicondylitis, carpal tunnel syndrome and tenosynovitis (trigger fingers and DeQuervain's tenosynovitis)
3. Low Back Pain: This can result from lumbar spondylosis, prolapse intervertebral disc, lumbar spinal canal stenosis and osteoporosis
4. Lower Limb Pain: anterior knee pain (chondromalacia, osteoarthritis) and plantar fasciitis are very common complaints.

EPIDEMIOLOGY

Pain is the commonest reason for patients' visit to the Physician. Musculoskeletal pain is the commonest cause of Chronic non malignant pain.

GENERAL MANAGEMENT PLAN

Assessment should include a good history and clinical examination to exclude or consider the presence of a serious

condition. The "red flag alert" should include conditions such as infection, fracture or malignancy. Ancillary investigations are usually not required, but when a serious condition is suspected (red flag), then appropriate haematological investigation and imaging may be ordered.

Management should start with simple non-pharmacological treatment like providing appropriate assurance and information of the illness and maintenance of normal activity, where possible. In today's context, adequate, information is essential, and handing out a printed pamphlet giving explanation with illustration, if available, is advisable. Other modalities like physical therapy, manipulation, massage and exercise could be considered. Pharmacological therapy should start with simple analgesic like paracetamol and proceeding to NSAIDs and the COXIBS, and injections. Minimally invasive surgical therapy and standard operative methods are indicated for some patients.

NECK AND SHOULDER PAIN

The majority of 95% neck and shoulder pain episodes are non specific in nature. Pathogenesis of the pain includes the fact that the neck-shoulder-upper limb has highly mobile and complex movements. It is also subject to use of great force. The soft tissues are compressed into tight compartments, and susceptible to repetitive stress injuries. The pain arising could be local, along the course of the nerve or referred.

The range of conditions which can be the cause of the pain include cervical spondylosis, cervical radiculopathy and myelopathy, adhesive capsulitis of the shoulder, rotator cuff tendinitis, ruptured rotator cuff and fibromyalgia.

Cervical Spondylosis, cervical myelopathy, cervical radiculopathy

Cervical Spondylosis results from degeneration of the cervical spine, disc and results in bony spurs and ridges. The spinal canal is narrowed and there could be compression of the spinal cord (cervical myelopathy) and or nerves (cervical radiculopathy). The condition can be initiated or made worse by a whiplash injury. Symptoms like pain and stiffness results. Social environment at work and stress can be weakly associated with the neck pain muscle spasm aggravate neck pain and may cause headache. If the spinal cord is involved there can be numbness and weakness in the upper limbs and trouble with walking due to weakness in the legs. Bowel and urinary function can be affected too. If only the nerve roots are affected then there can be weakness and numbness with pain in the arm or upper limb. The C5/C6 level is most often involved. Plain X-rays A/P and Lateral may be ordered when a serious condition is suspected. CT scan or MRI should be considered when the pain is severe and unremitting and when it is associated with significant neurological deficit.

Approximately, 40% will recover spontaneously, 30% will have mild recurrent symptoms and another 30% will have moderate to severe symptoms. Intervention should include advice to stay active. Collar and rest is seldom required. Exercise and gentle manipulation or mobilizations are advised. Pulsed Electromagnetic therapy and Acupuncture therapy have a place in the therapy. Mild analgesics (including opioids analgesics) can be started, proceeding to NSAIDs or COXIBs. Neck school and patient education are vital aspects of the management. Traction and TENS can be considered by there is no real hard evidence that they work.

Surgery in the form of decompression either from the front (anterior discectomy and removal of bony spurs) or from the back laminectomy may be indicated for severe unremitting pain of more than 6 weeks or for neurological deficits. Fusion following decompression using allograft or autograft is often considered after decompression. In some patients internal fixation is used with plates and screws if several levels of decompression was performed.

Adhesive capsulitis, rotator cuff tendonitis, rotator cuff rupture

Adhesive capsulitis (frozen shoulder), rotator cuff tendinitis and rotator cuff rupture are common causes of shoulder pain. Often the pain is located on the side of the upper arm.

Adhesive capsulitis. In adhesive capsulitis there is inflammation of the shoulder joint and capsule leading to shrinking of the volume of the capsule and progressive joint stiffness. There are 3 phases to the Frozen Shoulder, each lasting about 4 months. The first phase consists of shoulder pain following trivial injury. In the 2nd phase the pain decrease but stiffness and limitation of motion become more severe. The 3rd phase is followed gradually of resolution of the symptoms. Usually females between 40 – 50 years are more at risk. Diabetics, overused and prolong immobility after trauma are contributory factors.

Examination should limitation of movements in all directions, especially abduction and internal rotation. Imaging is usually not necessary, but blood tests may be considered to see whether there is an associated contributory factor like Diabetes or an inflammatory cause. Intervention should include physical therapy such as mobilization and ultrasonic therapy. NSAIDs are useful for pain and injection of Steroid in the subacromial space can be rewarding. Acupuncture and extracorporeal short wave therapy can be useful especially if it is associated with calcification in the subacromial region. If intractable, manipulation under General Anaesthesia and even arthroscopic release of the tight capsule may be needed.

Rotator cuff tendonitis. In rotator cuff tendinitis there is inflammation of the rotator cuff tendons and occasionally calcium deposition in the tendons. Overuse, repetitive stress and impingement by the acromion are possible causes of this condition. The patient complains of pain which is worse at night and there is weakness or increasing pain when moving the arm overhead. There may be a painful arc. This condition may precede a rotator cuff tear. Physical Therapy in the form of

stretching of the posterior capsule of the shoulder and mobilization of the shoulder is important. NSAIDs and local Steroid injection is known to be successful. Again occasionally decompression of the acromion is needed.

Rotator cuff tears. In Tears of the rotator cuff, the patient will also complain of pain. Weakness is detected by comparing the strength of external rotation in both shoulders. The cause of this condition may be due to chronic repetitive injury or sudden acute injury. It may be a partial or complete tear. Treatment consists of NSAIDs, physical therapy including stretching, mobilization and Steroid injection into the subacromial space. Surgical repair may be required when the weakness is marked. Currently, this can be done arthroscopically.

PAIN IN THE UPPER LIMB

Epicondylitis

Epicondylitis causes pain and tenderness in the region of the Elbow. On the medial side it is known as a golfer's elbow and on the lateral aspect is known commonly as a tennis elbow. It is caused by repeated microtears of the tendon attachment to the epicondyles of the elbow. A painful inflammation results and there is local tenderness. The pain is made worse by stretching the tendon attached to the epicondyle. Treatment consists of rest and ice during the acute stage. Physical therapy includes heat, ultrasound therapy, NSAIDs and local steroid injection. Surgery may be required and consists of release of either the flexor or extensor tendons from the epicondyle.

DeQuervain's tenosynovitis

DeQuervain's tenosynovitis consists of inflammation to the tendon sheath of the Abductor Pollicis Longus and the Extensor Pollicis Brevis tendons. The cause of this condition is due to repetitive stress. The symptoms consist of pain on the outer aspect of the wrist along the radial styloid. This is aggravated by ulnar deviation of the wrist. Treatment consists of immobilization in a thumb spica and injection of local Steroid. In most instances this is usually adequate. Occasionally, surgery in the form of release of the tendon sheath of the 2 tendons mentioned is required. The dorsal branch of the radial nerve is at risk in this surgery and if injured a painful neuroma may result.

Trigger fingers

Trigger fingers is another common cause of pain in the palm and fingers. The pathogenesis of this condition is an inflammation of the tendon sheath of the flexor tendons around the A1 pulley, resulting in narrowing of the space for smooth gliding of the flexor tendon. This is usually due to repetitive stress and over use of the hand. There is pain at the base of the finger around the region of the metatarsal-phalangeal joint. Catching of the fingers as it goes into full flexion with difficulty of extending of the fingers. Treatment is usually quite successful with an injection of local steroid. If intractable a surgical release of the A1 pulley with a vertical slit is almost always successful. In this surgery the digital nerve is at risk on both sides of the tendon.

Carpal tunnel syndrome

Carpal tunnel syndrome results from compression of the median nerve in the region of the wrist under the palmar carpal transverse ligament (part of the flexor retinaculum). This results from swelling of the tissues in the “carpal tunnel” surrounding the flexor tendons. Again this condition often results from a repetitive stress from overuse. The symptoms experienced by the patient are pain and numbness in the fingers, usually at night. The numbness is experienced in the radial 3 and half fingers in the hand. Clinical examination showed a positive phalen's sign i.e. numbness increasing with force flexion of the hand at the wrist. The tinell's sign i.e. Electric sensation in the fingers or palm on tapping the median nerve in the region of the wrist. Finally, there is a ring split sign i.e. Difference in sensation between the radial vs the ulnar aspect of the ring finger. The condition is confirmed by performing an electromyographic study of the median nerve, measuring the amplitude of the action potential and the conduction velocity in the nerve. Treatment consists of using a night splint keeping the wrist in a neutral position. Occasionally, an injection of local steroid would resolve the problem. Surgical release of the carpal tunnel done open or endoscopically would be needed if conservative measures fail.

LOW BACK PAIN

This certainly is a very common pain of musculoskeletal origin. After upper respiratory tract infection, low back pain is the commonest cause of days off from work. Most time the cause is non specific and in majority of cases (more than 90%) the pain resolves spontaneously over a few days. The commonly known causes are lumbar spondylosis, prolapsed intervertebral disc and lumbar spinal canal stenosis. The History and clinical examination will exclude or confirm a serious cause. The presence of Sciatica – radiating pain going down below the knee is a significant symptom suggesting a lumbar nerve root compression from a prolapsed disc (usually at the L4/L5 or L5/S1 level) or spinal canal stenosis from hypertrophy of the facet joints. In Lumbar spinal canal stenosis there is intermittent neurogenic claudication pain either from standing for a prolonged period or walking a certain distance. This pain goes away on sitting down or flexing the spine.

The clinical examination is significant if there is neurological deficit and or limitation of the straight leg raising test. Weakness of the Flexor Hallucis Longus (for S1 nerve root) or Extensor Hallucis Longus (for L5 nerve root) or absent ankle reflex (S1 nerve root) are some of the signs to look for. Any disturbance of the Bladder or Anal function is a sign of a serious and significant condition. Where indicated in serious conditions a plain X-ray is often required. Again if symptoms persist with neurological involvement and MRI imaging is indicated.

In patient with essentially low back pain, it is important for the patient to remain active. Heat therapy is useful. It is important for the patient to be fully educated and informed of his problem. A printed pamphlet with details and

illustration will go a long way in the management. Muscle relaxants and simple analgesic, starting with paracetamol are useful. NSAIDs and more recently, COXIBs should be considered if simple paracetamol is not effective. Spinal manipulation, acupuncture therapy, and McKenzie back exercises have their place in the treatment. Other modalities include injection of steroid (epidural or facet joints), massage, and lumbar support. Topical applications are becoming more commonly used. In prolapsed disc, the above therapy is tried first. If pain persists or neurological deficits persist or becomes progressively worse then surgical intervention is required. Minimally invasive microdiscectomy is now available. Otherwise a formal open discectomy is performed. In Spinal Canal stenosis a decompression laminectomy with undercutting of the facet joints are required. In patients with cauda equina syndrome – where there is involvement of the bladder or bowel, emergency surgical intervention is required.

KNEE PAIN

The commonest presentation is an anterior knee pain. Again the history and clinical examination will tell us whether the condition is serious. If so ancillary investigation will include blood test and imaging in the form of plain X-rays or imaging in the form of MRI. In majority of cases the anterior knee pain is due to overuse, subluxating patella or tight lateral retinaculum. Most of these resolve spontaneously or with conservative therapy. Again the therapy consists of remaining active and educating the patient of his or her condition. Orthosis for the foot and the patella can be useful and so also exercise with the leg full extended and doing repetitive leg raises. Analgesic, NSAIDs, Coxibs, patellar tapping and occasionally acupuncture may be successful. Very occasionally, arthroscopic lateral release and debridement may be required.

HEEL PAIN

Plantar fasciitis is a common cause of heel pain. The pathogenesis is usually over use with poor shoe worn. There is inflammation resulting from microtears of the plantar ligament attachment to the calcaneum. Symptomwise the patient complains of heel pain especially in the morning when he takes his first steps on waking up. Clinically, there is tenderness on the medial tubercle of the calcaneum. Sometimes stretching the plantar ligament is painful. The treatment is analgesic, a good pair of shoes, ultrasonic therapy and stretching of the plantar ligament. A night splint keeping the plantar ligament stretched is often needed. Injection H&L could be considered but there is the downside of fat pad atrophy. Electromagnetic Sound therapy (using a lithotripter) can be used before considering surgery. Open surgery is considered when the conservative therapy fails. This involves releasing the plantar ligament from the calcaneum and using a Z plasty to lengthen the plantar ligament.

CONCLUSION

Musculoskeletal pain is an extremely common complaint of patients seeking medical treatment. Most of the conditions are benign and non specific. Most do respond spontaneously and require little therapy. In most instances, the cause is not serious and the therapy is conservative. Surgical management is often very successful if indicated.

LEARNING POINTS

- General management of musculoskeletal pain consists of a good history and clinical examination to exclude or consider the presence of a serious condition
 - Ancillary investigations are usually not required
 - Treatment should start with non-pharmacological measures
 - Pharmacological therapy should start with simple analgesic like paracetamol and proceeding to NSAIDs and the COXIBS, and injections
 - Minimally invasive surgical therapy and standard operative methods are indicated for some patients.
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