Chronic Pain Management in General Practice

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Introduction

Chronic pain is a common condition that challenges both doctors and patients, with the elusive concept of cure being the goal of medical intervention and treatment. Pain is a complex biopsychosocial phenomenon. According to the International Association for the Study of Pain's (IASP) definition, pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described by the patient in terms of such damage.[1] IASP further defines chronic pain as "pain which has persisted beyond normal tissue healing time." While the shift from acute to chronic pain is arbitrarily placed at a three-month duration, the main differentiation in management is that in acute pain, the focus is on addressing the cause of the pain, while in chronic pain management, the focus is on managing the pain, addressing the effects of the pain and maximising function and quality of life.

Prevalence of chronic pain varies between 8% and 45% of the population, with 10% to 15% of the population presenting to their GPs.[2] This prevalence of chronic pain increases with age. Chronic pain affects 100 million Americans,[3] 25 million of whom report chronic daily pain.[4] With an estimated economic cost of $560 to $635 billion/year,[3,5] chronic pain is one of the most important issues in both medicine and public health. In a survey of Australian GPs, they found that at least 11% of chronic problems managed by GPs were pain conditions and that 37.5% of adult appointments in a typical week involved chronic pain complaints. It also stated that analgesics were among two of the top five most prescribed medications.[6] Our local Singapore prevalence study of chronic pain reported 8.7% in the *Annals, Academy of Medicine, Singapore* in November 2009.[7] Even though the prevalence of chronic pain was found to be marginally lower compared to other studies, the impact of pain was just as significant.

Pain is commonly encountered in general practice. The literature shows that GPs have low satisfaction in treating patients with chronic pain and only 34% of GPs felt comfortable in managing these patients.[8,9] Many GPs feel that they do not have adequate training from their medical school training (82%) or postgraduate general practice training (55%) to manage patients with chronic pain.[8]

Most patients who experience chronic pain live with it for at least seven years and one in six chronic pain sufferers says that their pain is sometimes so bad that they want to die.[10] Of participants surveyed, 27% said that they were less able or unable to maintain relationships with friends and family and over 40% of chronic pain sufferers say their pain impacts everyday activities.[10] Breivik demonstrated that 21% of chronic pain patients had been diagnosed with depression because of their pain, 61% were less able or unable to work outside the home, 19% had lost their jobs and 13% had changed jobs because of their pain.[11] It is estimated that 40% to 60% of patients with chronic pain have inadequate management of their pain.[10,11]

Torrance et al established that severe chronic pain was significantly associated with all-cause mortality and particularly death from cardio-vascular disease.[12] Such evidence suggests that in assessing patients with chronic pain, physicians should view chronic pain as a serious risk marker for premature mortality.[12,13]

GPs in primary care are "first-contact, accessible, continued, comprehensive and coordinated care"[14] providers. In most countries, of the 20% of the general population who experience chronic pain, the overwhelming majority are managed in primary care by their GPs, while only 0.5% to 2% are referred to secondary care for pain management.[10] Consultations on pain account for 22% of all primary care consultations,[15] and pain is one of the main reasons for patients seeking contact with healthcare.[16] Patients with chronic pain visit their GPs twice as often as patients without chronic pain.[17]

GPs see undifferentiated illness in patients whom they assess, diagnose

and manage in the space of a five to ten-minute consult. The successful management of chronic pain in primary care relies on a multidisciplinary and holistic approach aimed at both minimising pain as much as possible and teaching patients how to live well with chronic pain. It is not easy nor realistic to expect this type of multi-dimensional touchpoints via our GPs in Singapore. However, the importance of addressing chronic pain in primary care avoids the risk of "biased" professionals from disparate backgrounds offering treatments based on their specialty skill sets instead of providing the comprehensive multidisciplinary pain care that many patients need.[3] Hence, for any advances in identification and management of chronic pain to be useful in a primary care setting, they must be useable within the time and resource constraints and restrictions that are inherent to general practice.

Identification of chronic pain in primary care

Because of the relative newness of pain medicine as an independent subspecialty and the existence of multiple pain professional organisations with differing agendas and disciplines offering "pain relief", pain management risks are inconsistent and uncoordinated.[3] Addressing chronic pain in a general practice setting has the potential to provide high quality, readily accessible pain management which is available to the population in the volume required. However, inherent to that solution are the challenges posed by identifying and managing chronic pain within the constraints of general practice.

In managing patients with chronic pain in primary care, the aim is generally to rule out treatable and modifiable causes and then support the patient to live as well as possible, with the maximum quality of life despite their chronic pain. This approach takes the form of bedside intervention, drug, non-drug and self-management interventions.

I have devised a "4Ps" mnemonic for assessment and management of chronic pain through my experience in educating GPs and specialist pain medicine trainees. Many have found this useful, especially when the case is highly complex.

Pain picture

The location and nature of the pain (eg, persistent shoulder pain with restriction of movement). Labelling of the pain enables one to be able to distil and categorise the pain syndrome (eg, cervicalgia with radiculopathy or lumbago with sciatica; coccydynia and atypical facial pain).

Pain pathology

The possible mechanisms and/or pathologies that may be causing the pain are as follows.

Mechanical cause of pain: There may be obvious mechanical pain generators versus unknown elusive causation of pain. Mechanical pain generators follow the Cartesian model of pain pathway such as menisceal tear in chronic knee pain or a facet-mediated pain in arthrosis of the facet joints in the spine. Chronic inflammatory conditions, such as rheumatoid arthritis and ankylosing spondylitis, perpetuate their pain through ongoing destruction of the surrounding tissue via unabated immunological hyper-response.

In low back pain, its heterogeneous causes of non-specific lumbago can make any medical practitioner look incompetent. There are indeed many causes ranging from spinal causes such as disc herniation, facet arthropathy and nerve impingement, to musculoskeletal factors such as back sprains and muscle spasticity. Muscle knots and spasms are worth mentioning as they can cause significant pain and distress.

Functional cause of pain: Pain sensitisation can be via central nervous system (CNS) and peripheral nervous system amplification. In fibromyalgia, it is CNS sensitisation that results in generalised body pain. In these conditions, there is no stimulus or pain generator at all to start with. This is similar to a sensitive tooth syndrome whereby there is no mechanical cause such as cracked tooth, gingivitis or related pathologies. In persistent post-traumatic painful conditions where the original pain generator has healed, the remaining pain is due to the sensitisation of the autonomic sensory nerves, giving rise to an uncoupling of the stimulus-response relationship (eg, complex regional pain syndrome). Other common functional pain syndromes include trigeminal neuralgia, irritable bowel syndrome and migraine headaches.

Case scenario

Mrs Lim CK, aged 54, suffered from painful shoulder with restriction of movement for more than a year.

It started as a discomfort in her right shoulder. She worked as a human resource manager and thought that she had pulled something while carrying files or holding the telephone cradle. But within a few months, the pain was so bad that she could not sleep at night.

She tried many different treatments and remedies including chiropractic, traditional Chinese medicine, osteopathy and physiotherapy.

She had deep tissue massage as well as manipulation of her shoulder joints which made the pain worse, increasing its stiffness. She was told to bear with the pain while being manipulated as the qi had to be unblocked through painful massage. She tried ice and heat treatment. She had some limited response with acupuncture. Painkillers did not relieve her shoulder pain, not one bit. The shoulder surgeon wanted to operate

Psychological influences

Anxiety or depressive symptoms will impact and influence the pain experience and its report. Often, patients do not articulate their depressive symptoms. These may need additional closed-ended questions regarding their energy level, interest in their surrounding and social interactions.

Performance status

It is important to know the activity level and function of the patients, whether the patients are de-conditioned and/or having pacing issues. Apart from mechanical activity performance level, it is necessary to know about the sleep performance of the patient. Sleep habits and hygiene are documented to establish the patient's baseline and its impact to his/her next day's cognitive function as well as energy level.

on her shoulder, to "trim" away the acromial bone spur and repair the frayed supraspinatus tendons.

By this point in time, her arm was so stuck that her husband had to help her hook her bra strap, wash her hair and even pull over or take off any T-shirt. Her shoulder abduction was 0 to 90 degrees, extension 0 to 10 degrees, and external/internal rotation 0 to 40 degrees. There was significant disability due to restriction of motion of the painful joint. At night, she could not sleep on her affected shoulder. It would be so painful that it woke her from her sleep. Soon she was only able to lift her arms up to her sides and not up towards her head. The range of movement of her right shoulder was so limited that she could not even lift a bowl of soup or carry any load.

After six months of living with the pain, Mrs Lim was treated with the following:

1. Supraspinatus cortisone injection
2. Subacromial bursa injection
3. Subscapularis myofascial injection.

Application of the 4Ps to the case

Pain Picture

What is the nature of the shoulder pain: is it a localised pain or a referred pain condition? Is the pain brought on upon movement of the shoulder joint, which is more likely a local pathology (eg, rotator cuff syndrome or osteoarthritis or shoulder sprain)? Referred pain to shoulder may have its origin in the cervical spine such as C5 radiculopathy secondary to foraminal stenosis or nerve impingement from disc herniation. While referred pain conditions may present with pain inhibition, its passive movements would usually not be impeded nor restricted.

Pain Pathology

Mechanical causes: Adhesive capsulitis (frozen shoulder) is a condition that causes restriction of motion in the shoulder joint. The cause of a frozen shoulder is not well understood, but it often occurs for no known reason. Frozen shoulder causes the capsule surrounding the shoulder joint to contract and form scar tissue. Its origin may be secondary to tears of the rotator cuffs caused by acromion bone spur or osteoarthritis of the glenohumeral joint. Other differential diagnoses may be shoulder bursitis or tendinitis with severe pain restriction of movement.

Functional Causes: The likelihood of a functional cause for the shoulder pain is low. The mechanical cause accounts for the persistence of shoulder pain. The functional aspect of frozen shoulder may be contributed via menopausal hormonal imbalance, adding to the progression of pain after the initiation of the pain from the primary injury and inflammation.

Psychiatric/psychological contribution

There were no significant depressive or anxiety symptoms. Despite having chronic pain from her condition for more than six months, she did not exhibit any psychological ramification from the impact of pain. Look actively for unexplained weight loss, low mood or low energy to prompt further evaluation. Sometimes chronic pain impacting insomnia and poor sleep quality may be the start of a stress disorder.

If there are any underlying untreated low-grade depression or anxiety syndromes, these would have bearings on the outcomes and prognosis of our treatment of pain conditions.

Performance impact

There is significant impact on function and disability. The frozen shoulder has resulted in inability of wearing clothes, washing hair and lying dependent on the painful shoulder. An MRI of shoulder may be warranted if weakness was assessed, to exclude possible rotator cuff tears.

In our evaluation of performance, we look specifically at fear avoidance and poor pacing behaviour. These traits will predispose to poorer outcomes and need for more intense interventions.

Pain management strategies[18,19]

When we are faced with any painful condition, it is in our innate self to eradicate the pain generator and provide long-term elimination of pain. We often view all pain conditions as acute pain models whereby if we reverse the primary pathology, the pain will be resolved.

Persistent pain is a chronic illness. Treatment should shift focus to management of the pain pathway and functional gains rather than treating the pain alone. An overemphasis on pain reduction will often result in frustration for the treating doctor and the patient. Hence surgery often does not have a place in chronic pain syndrome except for chronic inflammatory nociceptive conditions such as cancer, arthritis, connective tissue disorders and/or instability conditions.

After a holistic biopsychosocial assessment, a framework of a comprehensive pain management strategy can therefore be planned. A different set of 4Ps can be used.

Pharmacological medications

It is important to consider if appropriate medication has been used and whether further optimisation of medication is required. Depending on the possible mechanism of the pain, different types of medication could be considered.

There is a role for anti-inflammatory steroidal (Prednisolone or Dexamethasone) and non-steroidal prostaglandin inhibitors (Celebrex, Naprosyn) for Phase 1 of acute frozen shoulder. It is helpful to add adjuncts to down-regulate the CNS amplification. Addition of low doses of anticonvulsants and antidepressants would reduce the requirements of anti-inflammatory treatments, providing a multi-modal approach to nociceptive pain.

Procedural intervention

Are there any bedside procedures that may be helpful (eg, local anaesthetics or corticosteroids injected around the nerve [nerve blocks])?

Subacromial bursa block, supraspinatus cortisone injection and/or intra-articular glenohumeral injection is very helpful with pain relief. These injections, when applied to the respective rotator cuff cum shoulder joint, will give immediate pain relief, allowing participation in intensive rehabilitation. This will improve the range of movement and thawing of the

frozen shoulder. These can be provided by the GP at the bedside safely without too much downtime to the patient. In selected frozen shoulder cases, the use of platelet-rich plasma injections may be indicated for better outcomes.

These pain procedural interventions are not temporalising effects of pain relief. They serve to reduce the pain while attempting to reactivate the recovery of the injured or affected organ/joints. They are usually performed once, although very rarely they may be repeated for add-on effect. These procedures should not be done solely without any plan of rehabilitation or reactivation being put in place.

Psychological[20]

Psychological strategies for pain management may be useful and include pain education, management of pacing strategies, fear avoidance and anxiety, and stress management. Various techniques, including cognitive behavioural therapy, acceptance-based treatment and mindfulness, may be employed or made available to the patient. An appropriately trained pain psychologist with experience in managing chronic pain patients would be necessary. Psychiatric review for diagnosis and management may also be required for patients with significant psychiatric comorbidity.

Physical

Physical reactivation, including an exercise programme, and stretching programme will be beneficial to chronic pain patients. An appropriately trained physiotherapist, who can also provide pain education to reinforce this, would be helpful in these circumstances. After careful evaluation of the painful condition by the GP, one has to decide if the painful area can be engaged and mobilised without further damage or injury to the joint, spine or respective body parts.

Contrary to popular notions that the pain needs to be protected and immobilised, or to let pain be your guide when engaging the painful part of the body, these beliefs have to be expunged and recalibrated with "no pain no gain". Keeping focus on the functional goal is the key rather than letting pain be the obstacle holding the patient back. Combined with adequate pain management, this functional physical reactivation can be achieved readily.

The case would benefit from targeted and global physical therapies to the shoulder. While the physiotherapists may start off with passive manipulation and increasing of the range of movement and pain engagement, patients are expected to progressively take on more functional and behavioural modification.

The treating GP should provide appropriate ongoing pain education. Good communication between the treating doctor and other health providers is paramount in managing most chronic pain. ◆

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