

Challenges in

NEUROPATHIC PAIN
Newsletter

Welcome to the second issue of *Challenges in Neuropathic Pain*, a newsletter brought to you by the members of the Multidisciplinary Panel on Neuropathic Pain. The panel aims to improve general awareness and understanding of neuropathic pain and its treatment options among medical practitioners in Hong Kong. This issue of the newsletter includes articles defining common neuropathic pain syndromes, a description of common pain scales and a case study describing a patient with postherpetic neuralgia.

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Definition of Common Neuropathic Pain Syndromes

There are a number of conditions under the umbrella of neuropathic pain. To promote awareness and understanding of these conditions, some common neuropathic pain syndromes that may be encountered in daily practice are outlined here.

Postherpetic neuralgia

A neuropathic pain syndrome that occurs following an acute attack of herpes zoster (shingles). It is defined as pain persisting for more than 3 months after the active herpes zoster lesions have healed, and involves constant aching, burning or itching with intermittent, severe, lancinating pain. Allodynia (pain from normally non-noxious stimuli) and hyperalgesia (abnormally increased sense of pain) may also occur.

Peripheral or painful diabetic neuropathy

Peripheral, autonomic and cranial nerve disorders that are associated with diabetes mellitus. These conditions usually result from diabetic microvascular injury involving small blood vessels that supply nerves. It is estimated that over 50% of diabetic patients may experience a neuropathy during their lifetime, although not all are painful. Painful neuropathy is generally described as superficial and affects the feet and hands. Burning, tingling and allodynia are typically reported.

Trigeminal neuralgia

This neuralgia affects any of the 3 trigeminal nerves that supply either side of the face, and can sometimes affect 2 branches at once. The one-sided pain of trigeminal neuralgia may extend through the cheek, mouth, nose and/or jaw muscles. This condition is characterized by a lancinating, shooting, electric-like sensation that can last from a few seconds to several minutes. Pain may be initiated by stimulating trigger points on the face, lips or gums, or by facial muscle movement, such as chewing.

Sciatica

Sciatica is characterized by pain radiating from the back into the buttock and into the leg. The pain may travel below the knee and may also involve the foot. Lower leg muscles may

become numb or weak. Sciatica is most commonly caused by prolapse of the intervertebral disk. This term is also used to describe pain anywhere along the sciatic nerve.

Post-stroke pain

Pain following a stroke is a common and severe central pain condition. It is characterized by pain in body areas that have lost sensory innervation due to disruption of the spinothalamic tract as a direct result of the stroke.

Complex regional pain syndrome

Complex regional pain syndrome describes a variety of syndromes that may follow injury, commonly to an extremity. Patients describe their pain as constant, burning, aching and throbbing, and this may be combined with autonomic and tissue changes at the injury site. The pain usually begins days to weeks after the injury, and persists beyond the time normally expected for the injury to heal. The pain tends to radiate to an entire anatomic region, such as the distal leg and foot. This group of symptoms has also been referred to as "reflex sympathetic dystrophy" or, in the case of a known nerve injury, "causalgia".

Painful upper limb

This term is used to describe a range of painful syndromes affecting the upper limbs, such as carpal tunnel syndrome and tennis elbow. Carpal tunnel syndrome is caused by compression of the median nerve in the hand as it passes through the carpal tunnel, a narrow passage in the wrist comprised of bone and the transverse carpal ligament. Overuse, injury, friction, fractures, fluid retention and forceful movements are common causes. One of the first symptoms of carpal tunnel syndrome is numbness in the hand, thumb, index finger and middle finger, quickly followed by pain in the same area.

Evaluation of Pain: Use of Pain Scales

Various tools are available to the practitioner to evaluate pain. These can assess the quality, intensity, location and pattern of pain. It is important to take a baseline, or pre-treatment, measurement and use the same pain scale to monitor a patient's response to treatment over time. Some of the more commonly used tools for evaluating neuropathic pain are described here.

Categorical pain scales

A categorical pain scale uses words to describe the magnitude or intensity of pain.¹ Numbers are often assigned to the categories for analysis, such as in a clinical trial. For example, pain intensity can be rated on a 4-point categorical scale as: no pain = 0, mild pain = 1, moderate pain = 2 and severe pain = 3.

Visual analogue scales

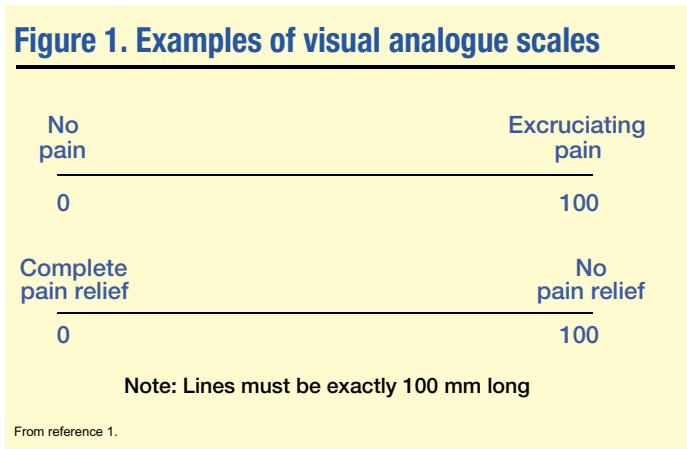
Visual analogue scales (VAS) are one of the simplest and most commonly used pain scales. Patients are asked to rate their pain on a horizontal, 100 mm scale where, for instance, 0 mm is equivalent to no pain and 100 mm is equivalent to worst possible or excruciating pain (Figure 1).¹ Scores may also be ranked from 0 cm (no pain) to 10 cm (worst possible pain).

While perception of pain may vary from patient to patient, a study of more than 1,000 subjects revealed that those with moderate pain on a 4-point categorical pain intensity scale subsequently reported a mean VAS score of 49 mm, and 85% scored more than 30 mm on the VAS. Patients with pain categorized as severe had a mean VAS score of 75 mm, with 85% having a VAS score of more than 54 mm.² Therefore, scores of greater than 70 mm (or 7 on a 0 to 10 scale) tend to be associated with severe pain and, often, functional disability. Scores less than 50 mm (or 5 on a 0 to 10 scale) indicate more tolerable, mild to moderate pain.³ Patients treated with analgesic medication may not achieve complete pain relief, so it is important that any residual pain is tolerable.

Alternatively, the VAS can be used to assess the effectiveness of treatment; 0 mm could be equivalent to complete pain relief and 100 mm to no pain relief (Figure 1).¹

Verbal rating scales

Verbal rating scales are similar to VAS. However, in this case, the patient is asked to rate their pain in response to questions, such as "Rate the severity of your pain on a scale from 0 to 10, where 0 is equivalent to no pain and 10 to excruciating pain".



McGill Pain Questionnaire

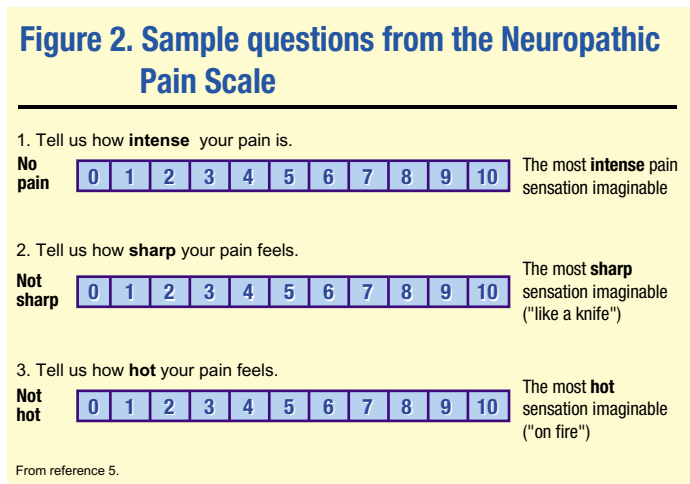
The McGill Pain Questionnaire (MPQ) comprises a series of sensory, affective and evaluative pain descriptors, together with an intensity scale and other questions to assess the pain experience.⁴ Patients complete the questionnaire, which comprises 4 parts:

1. Pain location
2. Description of sensation of pain
3. The pattern of pain, and whether it changes over time
4. Intensity of pain on a scale of 1 (mild pain) to 5 (excruciating)

The MPQ is a comprehensive questionnaire that evaluates patients' overall experience of pain. As such, the MPQ is a sensitive tool for evaluating analgesic treatments.⁴ However, the complexity of the questionnaire limits its application in everyday clinical practice.

Neuropathic Pain Scale

The Neuropathic Pain Scale (NPS) was designed specifically to measure pain in neuropathic syndromes, and has been validated as sensitive for evaluating treatments of neuropathic pain.⁵ The NPS comprises 10 questions and measures intensity, unpleasantness, quality and temporal sequence of pain (Figure 2).



Patient diaries

Patients can complete diaries at home to provide a regular record of pain. This provides a useful and more reliable tool to evaluate pain on an ongoing basis than patients' recollection at the time of consultation. A patient diary can comprise items such as pain intensity, frequency and duration, and functional and behavioural relationships.

Quality of life (QoL) measurement

There are various QoL instruments. The Short-Form 36 (SF-36) is very common and frequently used in clinical trials. The SF-36 comprises 36 questions that evaluate 8 QoL domains: physical functioning, bodily pain, physical role, mental health, emotional role, social functioning, vitality and general health.⁶ The SF-36 provides a global picture of QoL; however, reducing pain should have a positive impact on overall QoL.

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CASE PRESENTATION

In each issue, a case study will be presented on a relevant neuropathic pain syndrome. Reviewing case studies will help to improve your diagnostic approach to neuropathic pain and increase your understanding of basing treatment strategies on presenting symptoms. In this issue, a case of postherpetic neuralgia (PHN) is discussed.

Postherpetic Neuralgia

Presenting symptoms

A male patient aged 75 years was referred to the pain centre by his general practitioner (GP). The patient had burning pain, allodynia and dysesthesia (unpleasant, abnormal sensation produced by normal stimuli) in an area of the back over the T11 and T12 dermatomes.

Medical history

The patient had a history of chronic diabetes mellitus. Four months previously, he had suffered from acute herpetic infection (shingles) in the distribution of the 11th intercostal nerve. Two weeks later, he complained of a constant burning pain over the distribution of the left 11th intercostal nerve. The pain was exacerbated by turning his body and by his shirt rubbing against the affected area. His numeric-rating pain score was 8 out of 10 at worst and 5 out of 10 at other times. The GP had prescribed amitriptyline 50 mg daily for the past 2 months. This treatment did not effectively control the pain, and the patient complained of drowsiness during the day and dry mouth. An ice pack wrapped in cloth as a cold compress applied over the affected area moderately reduced the pain. According to his son, the patient also had insomnia and had lost interest in usually enjoyable activities.

Clinical examination

The patient appeared tearful when describing his pain. Clinical examination revealed an area of redness over the site of the previous herpetic infection (Figure 3). The redness coincided with the area of skin in contact with the ice pack; it was especially painful to light touch. There was no vesicular rash to suggest acute infection.



Figure 3: Appearance of redness over previous herpetic lesion site

Interpretation

The patient had been diagnosed with PHN by his GP, which was confirmed by examination at the pain clinic. PHN is often defined as pain persisting for more than 3 months after the active herpes zoster lesions have healed. It is diagnosed on the findings of a complete medical history and physical examination. The diagnostic clinical features of PHN include:

- Pain localized to the dermatome affected by the herpes zoster rash
- Pain described as burning, throbbing or sharp and shooting
- Allodynia
- Pain commonly precipitated by movement
- Areas of scarring or hypopigmentation caused by the herpes zoster rash
- Psychosocial distress

Management

The general approach for managing a patient with PHN involves:

- Careful medical and psychosocial evaluation
- Setting a realistic expectation of the treatment
- Educating the patient on the disease and treatment side effects
- Psychosocial counselling, more often required by patients with chronic pain syndromes. This is intended to reduce influencing psychosocial factors that may affect the pain as well as to prevent the development of pain behaviours.

The specific approach to treatment for this patient with PHN is:

1. Start low-dose amitriptyline or nortriptyline therapy (10-25 mg at night) and titrate every week up to the maximum tolerated dose or a maximum of 150 mg per day.
2. If the patient does not respond satisfactorily to amitriptyline or experiences significant side effects, changing treatment to nortriptyline or gabapentin (especially in elderly patients older than 60 years) should be considered. Commence gabapentin at a dose of 300 mg daily and titrate every week up to the maximum tolerated dose or a maximum of 3,600 mg.
3. Add topical lignocaine or a lignocaine patch if available. EMLA (Eutectic Mixture of Local Anaesthetics) cream may be considered.
4. Consider oxycodone or tramadol if antidepressants and anti-convulsants are ineffective or contraindicated.
5. Consider transcutaneous electrical nerve stimulation (TENS) as adjunctive therapy.
6. If adequate control is still not achieved, refer the patient to a multidisciplinary pain management unit where other treatments, including cognitive behavioural therapy, neural block, intrathecal steroids and other treatment modalities, may be available.

Q&A

Readers are encouraged to send questions to members of the Multidisciplinary Panel on Neuropathic Pain. Please forward your questions concerning any aspect of neuropathic pain and its management to mpnp@medimedia.com.hk or fax to (852) 2559 6910.

What is the difference between nociceptive pain and neuropathic pain?

Nociceptive pain is an appropriate response to a painful stimulus or injury, such as a burn, sprain, bone fracture or inflammation. Nociceptors are located throughout the body to detect pain. Nociceptive pain often responds to simple analgesics and tends to resolve when the injury or tissue damage heals. However, some patients with prolonged nociceptive pain may progress to neuropathic pain.

Neuropathic pain results from a disturbance to the peripheral or central nervous system. Patients may describe their pain or symptoms as burning, shooting, electric shock-like, tingling or numb. Patients often suffer from persistent allodynia, ie, pain resulting from a usually non-painful stimulus. Simple analgesics, including NSAIDs, tend to be less effective in treating neuropathic pain. Therefore, patients may require tricyclic antidepressants, anticonvulsants or local anaesthetic agents.

LITERATURE REVIEW

Putzke JD, Richards JS, Kezar L, Hicken BL, Ness ÜJ. Long-term use of gabapentin for treatment of pain after traumatic spinal cord injury. Clin J Pain 2002;18:116-121.

This recently reported study evaluated the long-term efficacy of gabapentin in treating pain from spinal cord injury (SCI). The longitudinal, observational study identified patients who had suffered traumatic SCI and received gabapentin for analgesia. Of the 31 patients identified, 27 were assessed at a 6-month follow-up visit; 21 patients were still taking gabapentin, while 6 patients had discontinued treatment due to adverse events. Fourteen of the 21 patients (67%) remaining on gabapentin had a favourable response to treatment, defined as a reduction of at least 2 points on a 0 to 10 pain scale. At the second follow-up visit (3 years), 11 of the original 14 patients responding to therapy were evaluated. Ten of these patients (91%) reported an analgesic benefit, though pain ratings had increased for some patients. Importantly, there was no evidence to indicate development of tolerance to gabapentin over the 3-year follow-up period; the dose range at both follow-up visits was 300 to 3,600 mg. The most common side effects were sedation, dizziness and forgetfulness. The authors concluded that, in general, gabapentin effectively controlled pain for up to 3 years in those patients able to tolerate any initial side effects. Randomized, controlled trials are required to evaluate gabapentin further for SCI treatment.

WEB SITES ON NEUROPATHIC PAIN

Various Web sites are devoted to neuropathic pain or pain management. Many of these are USA-based but, nevertheless, provide useful information on pain for all clinicians and patients.

The Neuropathy Trust in the UK (www.neurocentre.com) aims to promote awareness, communication and education for patients with peripheral neuropathy and neuropathic pain. There are useful, plain language descriptions of peripheral neuropathy and diabetic neuropathy, including basic information on the nervous system, diagnostic tools, management of neuropathic pain and a glossary of terms.

A comprehensive Web site at www.pain.com provides information more relevant for healthcare professionals. There is a regularly updated section on pain news, topical articles on pain management and a pain library that contains several thousand articles, including abstracts, summaries of journal articles and case studies.

CONFERENCE CALENDAR

MEETING	Hong Kong College of Anaesthesiologists & Society of Anaesthetists of Hong Kong Annual Scientific Meeting 2002	4th Asian Congress of Neurological Surgeons
LOCATION	Hong Kong	Hong Kong
DATE	1-3 November 2002	26-30 November 2002
CONTACT DETAILS	The Federation of Medical Societies of Hong Kong, 4/F, Duke of Windsor Social Service Building, 15 Hennessy Road, Wanchai, Hong Kong Tel: (852) 2527 8898 Fax: (852) 2866 7530 E-mail: cos@fmshk.com.hk Web site: www.hkca.edu.hk	Conference Manager: Miss Anthea Luk Unit 610-611, Tower 1, Silvercord, 30 Canton Road, Kowloon, Hong Kong Tel: (852) 2111 7574 Fax: (852) 2111 0132 E-mail: info@asiancns.org Web site: www.asiancns.org

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