Rehabilitation Medicine
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### The Cover Shot

This is a huge double-eared yellow glazed white and blue interlacing flower Tin Qiao porcelain vase. Initially, the colour of the interlacing flowers and leaves are light blue.

After a while, the blue outline of branches and leaves deepens spontaneously as seen in the evolving hues of deep and light blue. It looks as if an artist is still drawing on it up till now.

We hope the new born specialty of Rehabilitation Medicine will add flying colours as the teamwork further strengthens.

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MSc (Resp Med), FACC, DCH, DTM&H, DGM
Specialist in Respiratory Medicine, Rehabilitation Medicine
Advanced Internal Medicine, NTEC TPH and AIHNH
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Reference:

Important Facts

- **Cord Blood**
  - A rich source of haematopoietic stem cells (HSCs)

- **No significant difference**
  - between outcomes of cord blood and bone marrow transplantation

- **1 in 217 people¹** needs HSC transplant in his/her lifetime
Rehabilitation Medicine is a newly developed subspecialty of Medicine in Hong Kong since the 1990s. In September 2012, the status of the Specialty Board of Rehabilitation Medicine was recognised by the Hong Kong College of Physicians. As one of the medical specialties accredited by the Hong Kong Academy of Medicine, what are the common clinical problems managed by rehabilitation medical specialists? What are the distinct perspectives of rehabilitation physicians that enhance or complement clinical care services delivered by other clinical team members?

In this July 2013 Issue dedicated to Rehabilitation Medicine, we have invited senior rehabilitation physicians in Hong Kong’s public and private sectors to share with us their experience and expertise in major medical rehabilitation problems. The spectrum of articles covers physical and visceral disabilities encountered by clinicians in daily practice. Although not repeatedly emphasised among the articles, the readers may appreciate the multidisciplinary team approach advocated by rehabilitation physicians in serving patients presenting with functional incapacity from organ system pathologies. The recent development of an ICF model serves to remind us the multi-dimensional variables (health and contextual factors) affecting patients’ functional status, rehabilitation progress and outcomes. The importance of cross-specialty and cross-professional learning and a holistic problem solving approach is worthy of further exploration.

References
International Classification of Functioning, Disability and Health (ICF), WHO 2013 www.who.int/classifications/icf/en/ accessed 11 April 2013

Editorial

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Editor

Dr. Ernest HM MA
START SPIRIVA® when COPD symptoms impact everyday life

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SPIRIVA®: the only once-daily, long-acting anticholinergic maintenance treatment for COPD patients

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** A statistically significant 40% reduction in risk of mortality with Spiriva while patients received study medication. (p=0.006, on treatment analysis), effect extended trend of treatment period may 2016, as defined by protocol (15% risk reduction PM 0.034, intention-to-treat analysis), for the 50 days following the resolution of treatment periods (day 5 post), in the IPF treatment group, the study revealed an 11% reduced risk reduction (p=0.084, intention-to-treat analysis).

References:
A brief overview of pulmonary rehabilitation programmes (PRP) and respiratory support for chronic respiratory insufficiency is summarised in Tables 1a and 1b.

### Table 1a - Global

<table>
<thead>
<tr>
<th>Pulmonary TB – 1970s Sanatorium based</th>
<th>Polio epidemic – 1980s manual mechanical ventilation; non-invasive ventilation (NIV) with negative pressure, then trend towards noninvasive positive pressure ventilation</th>
<th>Polynoid – 1970s Chest 1997 – ACCP/AACVPR on COPD PRP</th>
<th>BTS 2003 “PRP services in the UK is very poor.”</th>
<th>NICE 2004 Clinical Guideline on management of COPD in both primary and secondary care. CG 12.10.2.3 PRP should be offered to all patients functionally disabled by COPD (MRC 3 or above)</th>
<th>Cochrane Review 2006; ATS/ERS 2006</th>
<th>Cochrane Review 2009 – early PRP after acute COPD exacerbations, reminder of preventive strategies</th>
<th>Pulmonary TB – 1970s Sanatorium based</th>
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<th>Cochrane Review 2006; ATS/ERS 2006</th>
<th>Cochrane Review 2009 – early PRP after acute COPD exacerbations, reminder of preventive strategies</th>
</tr>
</thead>
</table>

### Table 1b - Hong Kong

| Pulmonary TB – 1970s Sanatorium based | Polio epidemic – 1980s manual mechanical ventilation; non-invasive ventilation (NIV) with negative pressure, then trend towards noninvasive positive pressure ventilation | Polynoid – 1970s Chest 1997 – ACCP/AACVPR on COPD PRP | BTS 2003 “PRP services in the UK is very poor.” | NICE 2004 Clinical Guideline on management of COPD in both primary and secondary care. CG 12.10.2.3 PRP should be offered to all patients functionally disabled by COPD (MRC 3 or above) | Cochrane Review 2006; ATS/ERS 2006 | Cochrane Review 2009 – early PRP after acute COPD exacerbations, reminder of preventive strategies | Pulmonary TB – 1970s Sanatorium based | Polio epidemic – 1980s manual mechanical ventilation; non-invasive ventilation (NIV) with negative pressure, then trend towards noninvasive positive pressure ventilation | Polynoid – 1970s Chest 1997 – ACCP/AACVPR on COPD PRP | BTS 2003 “PRP services in the UK is very poor.” | NICE 2004 Clinical Guideline on management of COPD in both primary and secondary care. CG 12.10.2.3 PRP should be offered to all patients functionally disabled by COPD (MRC 3 or above) | Cochrane Review 2006; ATS/ERS 2006 | Cochrane Review 2009 – early PRP after acute COPD exacerbations, reminder of preventive strategies |

### Table 2 – Benefits of pulmonary rehabilitation (2007 ACCP/AACVPR evidence)

<table>
<thead>
<tr>
<th>Grade 1A</th>
<th>Grade 2B</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Strong recommendation 1A to 1C)</td>
<td>(Weak recommendation)</td>
</tr>
<tr>
<td><em>A programme of exercise training of the muscles of ambulation is recommended as a mandatory component of pulmonary rehabilitation for patients with chronic obstructive pulmonary disease (COPD).</em></td>
<td>Pulmonary rehabilitation reduces the number of hospital days and other measures of health-care utilisation in COPD.</td>
</tr>
<tr>
<td><em>Improves the symptoms of dyspnoea.</em></td>
<td><em>There are psychosocial benefits from comprehensive pulmonary rehabilitation programmes in COPD.</em></td>
</tr>
<tr>
<td><em>Improves health related quality of life.</em></td>
<td><em>As an adjunct to exercise training in selected patients with severe COPD, noninvasive ventilation produces modest additional improvements in exercise performance.</em></td>
</tr>
<tr>
<td><em>Both low- and high-intensity exercise training produce clinical benefits.</em></td>
<td></td>
</tr>
<tr>
<td><em>Addition of a strength training component increases muscle strength and muscle mass.</em></td>
<td></td>
</tr>
<tr>
<td><em>Unsupported endurance training of the upper extremities is beneficial in COPD and should be included.</em></td>
<td></td>
</tr>
<tr>
<td><em>6 to 12 weeks of pulmonary rehabilitation produces benefits in several outcomes that decline gradually over 12 to 18 months.</em></td>
<td></td>
</tr>
</tbody>
</table>

### Pulmonary Rehabilitation (ATS and ERS 2006) “is an evidence-based, multidisciplinary, and comprehensive intervention for patients with chronic respiratory diseases who are symptomatic and often have decreased daily life activities. Integrated into the individualised treatment of the patient, pulmonary rehabilitation is designed to reduce symptoms, optimise the functional status, increase participation, and reduce healthcare costs through stabilising or reversing systemic manifestations of the disease.” The recent ICF model re-affirms multidimensional interactions of individual, disability and co-morbid illnesses, psychosocial, environmental and rehabilitation team factors in influencing outcomes. The multidisciplinary team may include physicians, nurses, respiratory, physio-, and occupational therapists, psychologists, exercise specialists and/or others with appropriate expertise depending on the resources available. Chronic lung diseases include chronic obstructive pulmonary disease (COPD) and other conditions such as asthma, bronchiectasis, interstitial lung disease, restrictive chest wall disease, pulmonary hypertension, obesity-related respiratory disease and lung cancer.

Since publication of the 1997 ACCP/AACVPR evidence-based guideline on pulmonary rehabilitation, there have been many areas of new evidences being translated into daily clinical practice. The 2006 ATS/ERS statement on pulmonary rehabilitation highlighted the success factors for pulmonary rehabilitation, namely a multidisciplinary team approach, individually tailored programmes with attention to both physical and psychosocial functioning. The key elements of comprehensive patient assessment, education, exercise training with psychosocial support by the interdisciplinary team of professionals paved a big way towards returning patients to the best possible functioning in the community. The 2007 ACCP/AACVPR evidence-based guideline on pulmonary rehabilitation was another landmark for both COPD and other types of respiratory conditions (Table 2).
The Cochrane systematic reviews Issue 1, 2009 intervention review provided a link between post-COPD acute exacerbations and pulmonary rehabilitation process. Pulmonary rehabilitation following exacerbation of COPD was supported by its significant positive effects on exercise capacity, health related quality of life, substantial reduction in unplanned admission and mortality. Apart from treatment for acute exacerbations and smoking cessation to reduce decline in lung function, the step before PRP enrollment is medical optimisation (Table 3).

### Table 3 Role of medical optimisation in COPD.

<table>
<thead>
<tr>
<th>Grade 1C</th>
<th>No Recommendation Areas (evidence insufficient)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Supplemental oxygen should be used during rehabilitative exercise training in patients with severe exercise-induced hypoxaemia.</em></td>
<td>Expert opinions support the inclusion of psychosocial interventions as a component of comprehensive pulmonary rehabilitation programmes for COPD.</td>
</tr>
<tr>
<td><em>Some benefits, such as HRQOL, remain above control at 12 to 18 months.</em></td>
<td>Pulmonary rehabilitation for chronic respiratory diseases other than COPD should be modified to include treatment strategies specific to individual diseases and patients in addition to treatment strategies common to both COPD and non-COPD.</td>
</tr>
<tr>
<td><em>Insufficient evidence that pulmonary rehabilitation improves survival in COPD.</em></td>
<td>No definitive conclusions can be made from the limited data available.</td>
</tr>
</tbody>
</table>

The GOLD 2013 guideline uses a combined assessment of symptoms (mMRC or CAT score) and risk (GOLD stage 1 to 4) to form groups A,B,C,D to guide the preferred choices of combination treatment for COPD. Despite the important evidence-based guidelines available, one needs to be aware of the several years’ lag time in these publications. Local experience in pulmonary rehabilitation helps to enrich the answers to Who? When? What? Where? How? and Why? of pulmonary rehabilitation. In Hong Kong, most COPD patients are moderate to severe (GOLD II onwards) by the time they first presented to hospitals. With awareness of late presentations, recent care paths are streamlined to provide early post-exacerbation PRP and serve milder COPD patients to prevent further decline. 3-week intensive in-patient rehabilitation was found to be as effective as 4-week in-patient rehabilitation in 2000s. Six minute walking distance increased by an average of 20%, quality of life as measured by a Chronic Respiratory Disease Questionnaire was significantly improved and unplanned re-admissions were reduced by 25%. Training with focus on lower limb ambulation capacity confirmed that 2-week in-patient training can achieve initial functional gain similar to 3-week programme. The benefits apply to older clients over age 70. After a course of 18 sessions of >1hr pulmonary rehabilitation symptom limited exercise training over a 11-day in-patient stay, one expects a 20% improvement in six-minute walk distance or 15% rise VO2peak. This can be followed by maintenance rehabilitation either at home or in an ambulatory day rehabilitation centre to augment the health gains or prevent the decline of functions after 6 months of programme completion. As international literature indicates, the author concurs that walking / lower limb exercises are most important and longer programmes (4 to 12 weeks) produce greater sustained benefits (last 12-18 months) than shorter programmes (benefits last 6 months).

Serving patients with chronic respiratory insufficiency reminds us to consider preventive interventions (esp. smoking cessation) and earlier diagnoses on a community basis using portable spirometry. With the advances of modern technology, clinical teams can track patients’ progress receiving different types of oxygen delivery devices, monitoring proper inhaler use and high tech home ventilation (invasive and non-invasive), early warning signals of acute exacerbations and tele-rehabilitation to support home exercises and sustain longer term health gains post-rehabilitation. This will truly promote a high-tech home care paradigm for chronic visceral disabilities and strengthen the image of a caring community.

### References


Home Ventilation, MaHM. MSc Thesis in Respiratory Medicine, Royal Brompton National Heart and Lung Institute U.K. 1994.

Pulmonary Rehabilitation Programme in TSWH, Ma HM et al. TWHGs / Sun Yet San First Affiliated Hospital Symposium April 96.


Sleep Quality in Chinese Patients receiving Hospice Care in Hong Kong, Ma HM et al. HK International Cancer Congress 1996 (Young Investigator’s Award, Palliative Care 1996.


Pulmonary Rehabilitation: Is there a beginning or an end? Ma HM. HA Rehab Symposium 1997.


Pulmonary rehabilitation for silicosis patients in Hong Kong. Ma HM et al. HA Convention 1997, p.3-5.


Quality of Life in patients with sleep related breathing disturbances. Ma HM. Annual Scientific Meeting of Hong Kong Society of Sleep Medicine 1998

Pulmonary Rehabilitation: Art or Science? Ma HM. Hospital Authority Convention 1998

Sleep related breathing disorders: detection by the static charge sensitive bed in elderly patients. Ma HM et al. 7th International Conference on Non-invasive Ventilation, Across the spectrum from Critical care to Home care. Orlando, March 1999

Pulmonary rehabilitation outcomes in Geriatric COPD patients in Hong Kong. Ma HM et al. Chest 1999, 106(4): 2555


Effectiveness of maintenance exercise training for Geriatric COPD patients in Hong Kong. Ma HM et al. Chest 2000, 118(4): 77S

A Study on Provision of Quality Care for Patients with Long term Tracheostomies. Ma HM et al. International Hospital Federation Meeting 2001

Development of a new QOL tool for evaluation of Hospice Services in Hong Kong- HCPI. Asian Pacific Hospice Conference May 2001

A Randomized Control Study of 3-week versus 4-week Pulmonary Rehabilitation Program (PRP) For Moderate to Severe Geriatric COPDs in Hong Kong. Ma HM et al. Chest 2002, 122(4):1095-1105.


Modified Functional Ambulation Classification (MFAC) as the perpetual outcome measure of pulmonary rehabilitation for COPD. Ma HM et al. Abstract - HA Convention 2009

Promoting Excellence in Chronic Obstructive Pulmonary Disease Care through a Community Multidisciplinary Team Approach (AHNH-TPH). HA Convention June 2011 Poster SP-P1-8


Treatment of focal spasticity, including: arm symptoms associated with focal spasticity in conjunction with physiotherapy in adults. Dynamic equino foot deformity due to spasticity in ambulant paediatric cerebral palsy patients, 2 years of age or older. Spasmodic torticollis, blepharospasm and hemifacial spasm in adults.
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Neuropathic pain is common, and it develops as a result of lesions or disease affecting the somatosensory nervous system either peripherally or centrally. Examples of neuropathic pain conditions commonly encountered in clinical practice include painful peripheral neuropathies, entrapment neuropathies, traumatic nerve injuries, radicular and multi-radicular problems, cervical and lumbar spinal stenosis. Clinically, neuropathic pain is characterised by spontaneous ongoing or shooting pain, and amplified pain responses after noxious or non-nociceptive stimuli. Imaging studies including MRI are often utilised to support the clinical diagnosis, but false positives and false negatives are commonly encountered. Electrophysiological studies allow objective evaluation of the function of the neurological system. It helps to establish the presence or absence of a peripheral nervous system lesion, localise the disease site, and provide information about the nature of the disease process including chronicity, severity and prognostic information. It also helps to determine the relevance of an established peripheral neuropathic lesion to subjective clinical complaint.

There are four basic components for any electrodiagnostic measurement system:

1. Electrodes: interface between the subject and machine
2. Nerve stimulator
3. High-gain differential amplifier
4. Central processing device and recording display

The electrodiagnostic system amplifies and displays biological information derived from muscles and nerves recorded through surface or needle electrodes, and is generally displayed visually on a monitor or audibly through a loud-speaker. For nerve conduction studies, electrical nerve stimulation is used to stimulate a peripheral nerve. Surface skin electrodes are used to record a compound muscle or nerve action potential. The way an action potential is conducted along an axon depends on whether the axon is myelinated or unmyelinated. The velocity of nerve conduction depends on the diameter of the myelinated fibre. Large motor and sensory fibres conduct at a rate of 50 to 70 m/sec.

Nerve Conduction Studies:

Useful in determining the presence, the type and distribution of a neuropathy. Latencies and amplitudes of the evoked responses, and nerve conduction velocities are recorded. This leads to the differential diagnosis of the aetiology of a neuropathy, determining the location of nerve pathology, and progress of a disease of peripheral nerve. In demyelination conditions, there will be a delay of the motor and sensory latencies, and slowing of the conduction velocities. In conditions associated with motor or sensory axonal degeneration, there would be a decrease of the amplitudes of the compound muscle action potential or sensory nerve action potential.

Needle electromyography

In electromyography, needle electrodes are used to record the electrical potential of the muscle membrane, and the configuration of the motor unit potential evaluated. The motor unit is the group of muscle fibres innervated by a single anterior horn cell.

The needle examination is useful to determine:
1. The integrity of an individual muscle and its nerve supply
2. The location or distribution of abnormality
3. Abnormality of the muscle itself

The examination proceeds through the following steps:

1. Evaluation of insertional activities: discharge from fibres produced by irritation of muscle fibres, usually lasting no more than 300 to 500 millisecond.
2. Activities of the muscle in a relaxed state: Should have no electrical activity present in normal muscles. Fibrillation potential and positive sharp waves are seen in loss of innervation or primary muscle fibre disease.
3. Assessment of motor unit potential seen on weak voluntary effort
4. Orderly recruitment of additional motor units when effort increases
5. Determination of the interference pattern seen on maximum voluntary effort.

When a needle is inserted into a normal muscle, it evokes a brief burst of electrical activity that lasts no more than 200-300 msec. When the needle is stationary in a relaxed normal muscle, no electrical activity is present. During a gentle voluntary muscle contraction, a single motor neuron discharges, and a motor unit with distinctive morphology can be identified. With increasing voluntary effort, the firing frequency of the individual motor unit increases and the other motor units gradually come into play. Normal motor units in healthy muscles are biphasic or triphasic. Motor units that cross the baseline more than five times are termed ‘polyphasic’, and are a measure of fibre asynchrony. Normal motor unit amplitude ranges
from 1 to 5 mV, and represents the sum of the action potential of each muscle fibre of the motor unit. The following are EMG findings in abnormal muscles:

1. Insertional activity (increased or decreased)
2. Spontaneous activity (in denervated muscles: fibrillation and positive sharp waves)
3. Abnormal motor unit morphology (polyphasic in regenerating muscle, large amplitude motor unit in chronic denervation) and recruitment pattern.

Clinical Correlations:

**Traumatic or Compressive Neuropathy:**

Neuropraxia is a mild form of nerve injury resulting in conduction block without associated axonal structural changes, commonly seen in compressive or ischaemic nerve injuries. Serial nerve conduction determinations along the course of the nerve enable the localisation of the conduction block. The prognosis is good and healing occurs within days or weeks.

In axonotmesis and neurometis, there is disruption of the axon and the nerve distal to the injury undergoes Wallerian degeneration. The distal segment of the nerve becomes inexcitable after 7 to 10 days, resulting in a decrease in amplitudes of motor or sensory responses in nerve conduction studies. Spontaneous activities are seen in the involved muscle segments two to three weeks later. Serial nerve conduction and needle electromyography studies can determine the difference between neuropraxia and axonotmesis, and to monitor electrical signs of nerve recovery.

**Nontraumatic Neuropathies:**

Pathophysiologically, this can be broadly classified as demyelinating and axonal neuropathies. Segmental demyelination is associated with slowing of nerve conduction velocities. With axonal neuropathy such as diabetic neuropathy, there would be a reduction of the evoked motor or sensory responses. Needle electromyography will show the presence of denervation changes, and also provide early information about reinnervation before clinical recovery is evident.

Typical axonal neuropathy electrodiagnostic findings are:

1. Abnormally low or absent sensory nerve action potential
2. Abnormally low or absent compound muscle action potential
3. Normal distal motor and sensory latencies
4. Normal or near normal motor and sensory conduction velocities
5. Denervation changes in electromyographic examination

**Conclusion:**

Conventional nerve conduction studies and needle electromyography measure the activity of motor fibre, larger sensory fibres and the muscles, and are useful in localising neuromuscular disease sites and in providing information about the nature of the disease process. As sympathetic and small unmyelinated C fibres are not being evaluated, a normal study does not mean the patient has no pain. It also cannot directly determine the aetiology, and the aetiology must be inferred from symptoms, anatomic location and data obtained from the studies.
Needle Electromyography:

- Polyphasic motor units
- Fibrillations
- Positive Sharp Waves

References
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Clinical Applications of Musculoskeletal Ultrasonography in Physical Medicine and Rehabilitation

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Introduction

Musculoskeletal ultrasound has been increasingly used by physiatrists especially in the last decade. It is regarded as an extension of clinical examination and being another stethoscope of physiatrists.

This imaging modality is noninvasive, safe, lack of radiation and of low costing. It is now commonly used in managing patients with musculoskeletal problems and also as a visual guidance for injection of neurolytic agents in patients with neurological diseases.1, 2

Similar to other imaging modalities, the applications of ultrasonography can offer diagnosis, therapeutic intervention and monitoring of treatment in certain kinds of musculoskeletal problems.3 It is especially useful to help in making diagnoses when patients’ complaints largely outweigh objective clinical findings. When a diagnosis can be made early in the disease, subsequent treatment can be offered more aggressively and the disease can be modified in a way not affecting functional status of the patients. This will surely improve the patients’ functional outcomes. It can provide dynamic muscle or tendon examination images, which can facilitate clinicians to view the muscle and synovial joint problems in different clinical settings. For neurological disease application, most of the time, musculoskeletal ultrasound does not require active participation of patients which may be beneficial in facing patients with limited motor control or cognitive impairment.2

Neurological diseases

Muscle spasticity is a common clinical problem as part of the upper motor neuron syndrome such as stroke, brain injury or spinal cord injury. Botulinum toxin injection to target muscle groups is frequently used to reduce spasticity so as to improve range of motion, function and to reduce pain. Dosing of botulinum should better be individualised for each patient based on the severity of spasticity, functional goal and the size of muscle.4 The last consideration can be helped by musculoskeletal ultrasound. Using musculoskeletal ultrasound to identify target structures for neurolytic agents’ injection is a common practice nowadays.

It can improve the accuracy of needle placement. Under direct visualisation, the needle can be adjusted to avoid nerves, vessels, tendons and non-targeted structures which reduce the risk of the procedure. The length of the needle required to reach the target can be estimated by a preliminary scan when the depth of the target structures can be ascertained. By direct visualisation of the structures, we can avoid injecting into the fibrotic components of the muscle and thus enhance the therapeutic effects of the botulinum toxin. We can also visualise the injection to avoid the risk of spread of toxin outside the target structures especially when targeting the small muscles. We can also redirect the needle to multiple sites within the target muscles to achieve multiple motor point injections. Sometimes we can minimise our injectant to a lower dose for atrophic muscles and is useful in locating deep muscles that have limited surface anatomy such as flexor hallucus longus and tibialis posterior in the lower limb.2

The usually encountered spasticity patterns in commonly seen neurological diseases include flexed elbow, wrist and palm in thumb deformity in the upper limbs, adductor spasticity, equinus varus in the lower limbs. Musculoskeletal ultrasound can help to identify the complex overlapping architecture of upper limb muscles and is useful in locating deep muscles that have limited surface anatomy such as flexor hallucis longus and tibialis posterior in the lower limb.2

It is not uncommon for us to combine a nerve stimulator with ultrasound for botulinum toxin injections to ensure both anatomical and functional accuracy of our injections.3 With ultrasound, all of these muscles are quickly, accurately and easily targeted. In our clinical experience, the target muscle is usually able to be located in less than 1 minute and the injection procedures for individual muscles are usually completed within 3 minutes even with subsequent nerve stimulation backup. Although there is no evidence that proves the combined technique is more effective than ultrasound alone.

We also use musculoskeletal ultrasound to locate target nerve injection, for example obturator nerve block by alcohol or phenol for patients with marked adductor spasticity.5, 6 Bedsides, nerve stimulation is usually used concomitantly to serve the purpose of more accurate functional location of our targets.
For patients with focal dystonia and myoclonus, local injection of botulinum toxin will be another good management option and musculoskeletal ultrasound will again serve its role in providing accurate localisation.

Hypersialorrhoea is also commonly encountered in a wide range of neurological disorders such as dementia, Parkinsonism and stroke. Besides its cosmetic implication, it may also cause aspiration pneumonia in severe cases. Besides clinical palpation, musculoskeletal ultrasound is also helpful to locate the salivary glands and obviously nerve stimulation is of no use in this situation. Musculoskeletal ultrasound can help to isolate the salivary glands and to avoid the adjacent muscles involved in chewing and swallowing. The parotid and submandibular glands are most often targeted with injection. The European Academy of Neurology has stated that Botulinum tox is probably safe and effective in correcting drooling in patients with Parkinson’s disease and should be considered a treatment option.

**Musculoskeletal conditions commonly seen in rehabilitation settings**

Because of its sensitivity in detecting inflammation and intra-articular fluid, ultrasound is not uncommonly used in rheumatological disease and geriatric medicine. One of the common applications is to investigate joint pain, for example, shoulder pain in post-stroke hemiplegia. Shoulder pain is a common complication after stroke, which is reported in 5% to 84% of the stroke patients. Shoulder subluxation is not uncommon to be associated with shoulder pain after stroke. Inferior shoulder subluxation after stroke has been reported with the incidence of up to 81%. A variety of methods have been used to assess shoulder subluxation and, of these, palpation and plain radiographs are the most extensively reported in research studies. Ultrasonography has recently been used to assess shoulder subluxation in patients with stroke for the measurement of acromion-greater tuberosity distance, which demonstrates both intra-rater reliability and discriminant validity. Besides subluxation, post-stroke shoulder pain may be overlapped with other musculoskeletal problems, like shoulder impingement syndrome or tendonopathy. A case series using magnetic resonance imaging (MRI) findings in painful hemiplegic shoulders showed that these patients were more likely to have synovial capsule thickening or enhancement which may be suggestive of the underlying adhesive capsulitis. However, due to limitation of the availability of MRI, it is impossible to use it to investigate all the post-stroke shoulder pain patients after the basic history, clinical examination and plain radiograph.

In contrast, ultrasonography has been shown to be able to illustrate these capsular or rotator-cuff pathology by competent clinicians. Furthermore, as it can provide dynamic images, clinicians can detect infra-tendon or intramuscular ruptures during manipulation of the shoulder, which is not possible by using MRI. Clinicians can perform ultrasound guided injection therapy when it is indicated for those inflammatory conditions and monitor the disease progress although we still lack clinical trials to confirm its efficacy to the patients with post-stroke shoulder pain.

For the other kind of patients with shoulder pain, like those with osteoarthritis, they may be benefited by intra-articular visco-supplement injections under ultrasonography guidance when the pain is refractory to other standard non-operative interventions.

The other muscle pain problem, which is not uncommonly seen in the rehabilitation settings, would be the myofascial pain syndrome. The diagnosis is still mainly based on the history and clinical examination by ruling out the other inflammatory diseases. Recently, it was found that ultrasonography is useful for detecting local twitch responses (LTRs) of myofascial trigger points, especially for the LTRs in the deep muscles, like the lower back muscles. This imaging technique can assist clinicians to provide injection therapy under ultrasonography guidance without causing any injury to the other vital organs. In fact, a case series using ultrasound-guided pulsed radiofrequency treatment of the myofascial pain syndrome had shown significant clinical benefits.

**Conclusion**

In conclusion, the role of musculoskeletal ultrasound is expanding as the technology advances and more physiatrists are being trained in this aspect. Besides its main use to diagnose pathological changes, it is now largely used to assist physiatrists in performing interventional procedures.

**References**

MCHK CME Programme Self-assessment Questions

Please read the article entitled “Clinical Applications of Musculoskeletal Ultrasonography in Physical Medicine and Rehabilitation” by Dr. Mandy PM FUNG and Dr. Eric MP YEUNG and complete the following self-assessment questions. Participants in the MCHK CME Programme will be awarded CME credit under the Programme for returning completed answer sheets via fax (2865 0345) or by mail to the Federation Secretariat on or before 31 July 2013. Answers to questions will be provided in the next issue of The Hong Kong Medical Diary.

Questions 1-10: Please answer T (true) or F (false)

1. Despite the usage of musculoskeletal ultrasound, we cannot avoid injecting the botulinum toxin to the fibrotic components of the muscles in patients with spasticity.

2. Musculoskeletal ultrasound cannot facilitate the clinicians to locate the target muscles when patients come with different levels of spasticity resulted in distorted posture.

3. Musculoskeletal ultrasound can facilitate the clinicians to identify the needle placement to flexor hallucis longus and tibialis posterior in patients with equinovarus in the lower limb.

4. It is uncommon to combine nerve stimulator with ultrasound for botulinum toxin injections to ensure both anatomical and functional accuracy of the injections.

5. We can use musculoskeletal ultrasound to locate obturator nerve block by alcohol or phenol for patients with marked adductor spasticity.

6. The European Academy of Neurology stated that Botulinum toxin plays a role to control drooling in patients with Parkinson's disease.

7. Musculoskeletal ultrasound is reliable to measure acromion-greater tuberosity distance in patients with post-stroke shoulder subluxation.

8. Patients with painful hemiplegic shoulder were less likely to have positive signals suggestive of adhesive capsulitis by MRI.

9. Intra-articular visco-supplement injection under ultrasound guidance cannot offer any extra clinical benefit when the pain due to osteoarthritis of shoulder is refractory to other standard non-operative interventions.

10. Musculoskeletal ultrasound can only detect the local twitch responses of myofascial trigger points in the superficial back muscles.

ANSWER SHEET FOR JULY 2013

Please return the completed answer sheet to the Federation Secretariat on or before 31 July 2013 for documentation. 1 CME point will be awarded for answering the MCHK CME programme (for non-specialists) self-assessment questions.

Clinical Applications of Musculoskeletal Ultrasonography in Physical Medicine and Rehabilitation

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Name (block letters):_____________________________ HKMA No.: __________________ CDSHK No.: ____________

HKID No.: __ _ _ _ _ _ _ _ _ X X (X) HKDU No.: ________________ HKAM No.: ____________

Contact Tel No.:_________________________________

Answers to June 2013 Issue

A Brief Review on Treatment of Atopic Dermatitis (AD) in Adults

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Comprehensive Visceral Rehabilitation in a Local Context - Cardiac Rehabilitation and Beyond

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Introduction
Cardiovascular disease is the second leading cause of mortality in Hong Kong. As an area of visceral rehabilitation, and with its benefits in mortality, hospital admissions and quality-of-life, cardiac rehabilitation is now a standard component of contemporary management for patients with cardiac diseases.

The Rehabilitation
Cardiac rehabilitation (CRP) was defined as ‘the coordinated sum of activities required to influence favourably the underlying cause of cardiovascular disease, as well as to provide the best possible physical, mental and social conditions, so that the patients may, by their own efforts, preserve or resume optimal functioning in their community and through improved health behaviour, slow or reverse progression of disease’. A comprehensive rehabilitation programme in the New Territories West Cluster (NTWC) was developed by the Centre in Tuen Mun Hospital (TMH) as part of the comprehensive visceral rehabilitation (VIR) services. It is one of the first in Hong Kong in successfully utilising the mutual strength of hospital and community public gymnasium to provide a seamless continuum of rehabilitation. In addition to cardiac patients, the visceral rehabilitation team serves patients with other diseases like lung and renal conditions, concurrent medical diseases, complicated diabetes mellitus, recent stroke / transient ischaemic attack, vascular and other diseases. To serve the unique needs in the NTWC region, the visceral rehabilitation team also looks into rehabilitation expertise areas including work, driving, cognition and sexuality.

The Process and Components
Cardiac rehabilitation programmes can be divided into different phases which have variations in different localities. In the NTWC, current VIR and CRP are divided into 4 phases: Phase I for in-patients; Phase II (outpatients/day-patients) with comprehensive visceral rehabilitation including exercise training, risk factor reduction and psychosocial management; Phase III being the transition stage from hospital-based rehab to the phase VI community-based life-long maintenance of exercise and health behaviours. CRP consists of baseline assessment, risk stratification, nutritional counselling, risk factor management, psychosocial management, physical activity counselling, exercise prescription, and training. Rehabilitation specialists, in collaboration with organ specialists and allied health professionals, receive referrals and conduct exercise and risk factor assessments. After recruitment, the team of rehabilitation specialists, clinical exercise specialists, rehab nurses, physiotherapists, occupational therapists and NGO social workers defines the exercise risks and goals, determine and monitor appropriate training and risk factor modification strategies. Taking into account the characteristics of exercises, patient assessment and aerobic training are mainly performed with treadmills in the Centre. For suitable patients, cardiopulmonary exercise testings are performed to provide comprehensive rehabilitative information. The aerobic exercise component commonly consists of appropriately supervised and ECG-monitored exercise sessions. The levels of exercise supervision (un-supervised, professionally supervised, or medically supervised) are usually guided by various factors including rehabilitation goals, training intensity, exercise risk, compliance and sustainability as assessed by the rehabilitation team. Selected patients may undergo other forms of training, e.g. ergometry, strength training, if indicated. A higher number of sessions were found to be associated with better outcomes. The NTWC Rehab Centre has a close collaboration with local community partners to facilitate medical and psychosocial risk factor modifications. In addition, after the initial stages of hospital-based rehabilitation, suitable patients will continue further community-based training in the public gymnasium. The rehabilitation team visits the gymnasium regularly to provide exercise advice and coaching. Benefits of the service on various outcomes were encouraging compared to international references.

Advanced Rehabilitation
In the NTWC, working-age patients constitute one major patient group in visceral rehabilitation. This covers a wide range of vocations including commercial driving, blue-collar manual work, police, fire-fighting and others, on top of white-collar office workers. The high and variable cardiovascular demand on different manual duties imposes special challenges to the rehabilitation team. Within the limitations, the team provides appropriate counselling with/without additional information from work simulation to support the return-to-work for patients, with or without modifications. The additional concern on public safety, e.g. for commercial driving, further complicates the issue. As a consequence, the rehabilitation team provides advice and support not only from the medical perspectives but also from the vocational rehabilitation, retraining and relocation perspectives.

The VIR team has close collaborations with clinical psychologists, dietitians and sex therapists to address special patient needs. Sexuality is an ‘interesting’ but ‘hidden’ issue in rehabilitation. It is a ‘two-persons
issue’ involving both the patient and one’s partner. The myth of viewing sexuality as equivalent to purely the performance of sexual intercourse is common among patients. Other common issues include the worries of risks associated with sexual activities, and the impact of medications, including those for visceral diseases and sexual dysfunction. In general, there is a transient and mildly elevated absolute risk of cardiac events related to sexual intercourses under specific situations (comfortable pattern with a familiar person under a familiar situation)\textsuperscript{12,13}. While medical guidelines may provide information on the associated risks of sexual intercourses\textsuperscript{14}, it is more important for the rehabilitation team to facilitate proper patient understanding of sexuality and to correct common myths\textsuperscript{12}. From one co-author’s experiences serving the role of a sex therapist, the initial steps of the ‘PLISSIT model’ of sexuality rehabilitation\textsuperscript{15}, namely the provision of a permissive environment (P) and limited information (LI), are useful in addressing most myths and worries for couples. Addressing the topic also helps illustrating the benefits of rehabilitation and promotes patient compliance to a healthy lifestyle.

**Conclusion**

Visceral and cardiac rehabilitation can have a positive impact on patients with cardiac and visceral diseases. Apart from exercise training and risk factor modifications, comprehensive rehabilitation also requires the attention to psychosocial domains. The service in the NTWC Rehabilitation Centre illustrates one feasible model addressing the unique and specific needs of patients in the locality.

**References**

1. Department of Health, the Government of Hong Kong, SAR. Leading causes of death both sexes in 2009.
4. The British Association for Cardiovascular Prevention and Rehabilitation. The BACPR Standards and Core Components for Cardiovascular Disease Prevention and Rehabilitation 2012 (2nd Edition)
8. Fong CH. The mood symptoms in cardiac rehabilitation, the prevalence and screening in local rehabilitation settings. Dissertation paper for exit examination in Rehabilitation Medicine, Hong Kong College of Physicians, 2009.
Stoke and Spasticity

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Introduction
Spasticity is not an uncommon sequel after strokes. It is estimated that about 35% of post-stroke patients would have spasticity that requires treatment. Nevertheless, spasticity is part of the manifestations of upper motor neuron syndrome (Table 1). To manage spasticity properly, one should also consider the effects on other manifestations such as muscle weakness. Occasionally, the paretic lower limb may require an increase in tone due to spasticity to provide splinting effect to support standing. The reduction in spasticity would be detrimental in such a case. There should be good indications before treatment for spasticity is given.

Table 1. Upper Motor Neuron Syndrome

<table>
<thead>
<tr>
<th>Abnormal behaviours (positive symptoms)</th>
<th>Deficits (negative symptoms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reflexes release phenomena</td>
<td>Decreased dexterity</td>
</tr>
<tr>
<td>Hyperactive proprioceptive reflexes</td>
<td>Paresis/Motor weakness</td>
</tr>
<tr>
<td>Increased resistance to stretch</td>
<td>Fatigability</td>
</tr>
<tr>
<td>Relaxed cutaneous reflexes</td>
<td></td>
</tr>
<tr>
<td>Loss of precise autonomic control</td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Indications for managing spasticity

| Pain or spasm                            | Contracture                  |
| Interfering with function such as mobility | Interfering with proper hygiene care |
| To reduce deformity                      | To improve positioning       |
| To improve orthotic fitting              |                             |

Approach in managing spasticity
The common indications for treating spasticity in a patient after stroke are shown in Table 2. The treatment given should be provided by a step-cared approach (Figure 1), in which the simple measurements such as physical stretching programme and exclusion and treatment of noxious factors should be introduced first. Common clinical problems such as constipation, wound infection, arthritic pain or urinary tract infection could increase spasticity to a stage of interfering with the patient’s functioning. Removal of these precipitating factors will lessen the spasticity.

When treatment is needed, it is usually in the form of either oral medication or injection. There are not many oral medications that are useful for management of spasticity (Table 3), the commonest used oral medication locally is baclofen as it has less severe complication or dependency. However, its effect on reducing spasticity is still not satisfactory in most cases with side effects of drowsiness or weakness of the normal muscles. Focal injection to manage spasticity has been a more acceptable approach so that only the spastic muscles would be injected whilst those normal muscles would not be affected by medications.

Table 3. Oral drug for treatment of spasticity

<table>
<thead>
<tr>
<th>Drug</th>
<th>Dosage (mg)</th>
<th>Half-life (hrs)</th>
<th>Mechanism of action</th>
<th>Side-effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baclofen</td>
<td>10-80</td>
<td>3.5</td>
<td>Presynaptic inhibitor by activation of GABA receptor</td>
<td>Drowsiness, Weakness, Potentiate convulsion</td>
</tr>
<tr>
<td>Diazepam</td>
<td>4-60</td>
<td>27-37</td>
<td>Presynaptic inhibition by facilitating postsynaptic effects of GABA</td>
<td>Drowsiness, Dependence, Fatigue</td>
</tr>
<tr>
<td>Dantrolene</td>
<td>25-400</td>
<td>8.7</td>
<td>Reduces calcium release, interfering with excitation-contraction coupling in skeletal muscle</td>
<td>Weakness, Hepatotoxicity</td>
</tr>
<tr>
<td>Clonidine</td>
<td>0.1-0.4</td>
<td>12-16</td>
<td>Alpha2-adrenergic agonist</td>
<td>Hypotension, Drowsiness, Swelling of feet</td>
</tr>
</tbody>
</table>

Nerve or Motor-point block
Nerve or Motor-point block has been used to manage focal spasticity in Rehabilitation Medicine for many years. It requires a simple stimulator which could deliver a current of up to 5mA with connection to a Teflon-coated needle. This needle is also connected to an injection syringe. The injected medication could be either 5 or 6% phenol or 60 to 100% alcohol. When the needle is near the nerve or motor-point of the target muscle, much less current is required to elicit observable twitching of the muscle. When only about 0.5mV of current is needed to elicit muscle twitching, the needle should be very near to the target nerve or motor-point, the medication in the syringe could then be injected. It is known that it a sensorimotor nerve such as the median or tibial nerve is blocked by phenol or alcohol, about 10% of patients will have dysaesthesia. To avoid such a complication, the phenol or alcohol block should be more specific to either the motor branch of the nerve or motor-point of a targeted muscle.
Botulinum Toxin injection

Botulinum toxin reduces spasticity in a different approach by blocking the release of acetylcholine from nerve endings, resulting in blocking the neuromuscular junction and reducing muscle contraction. It is injected directly into the targeted muscles. To enhance the accuracy of injection to the desired muscle, guided methods such as electrical stimulating, EMG or ultrasonographic guiding has been used. These different guided methods should be more or less equally effective when performed by trained physicians. Ultrasonographic guiding could have an advantage to be used on those post-stroke patients who are taking warfarin, to avoid puncture of small vessels during the penetrating and injecting process. Although there is a general guide for the dosage of Botulinum toxin to various muscles, yet there are many other factors including the patient’s weight, duration of therapy, muscle bulk, number of muscles being injected simultaneously, Ashworth score and results of previous therapy that should be considered for an individualised and optimal dosage. Being a toxin, there is a limit of the maximal dosage that could be given to an individual. If a post-stroke patient has spastic muscles on both upper and lower limbs, it is not uncommon that the total dosage to optimally control spasticity would be over the safety limit. A combined motor-point block and Botulinum toxin could be used to optimally control spasticity whilst the dosage used is within the safety limit. The usual choice is for the large and superficial muscles to have motor-point block and for the small and deep muscles to have Botulinum toxin injections. The effects of Botulinum toxin or motor-point block used will last for about 3 months due to nerve sprouting or re-innervation.

Combined team effort

It is important to have an objective or goal for reducing spasticity such as those listed in Table 2. The effects of treatment should be ideally monitored by using appropriate assessment tools, examples of which are shown in Table 4. To achieve the goal, reduction of spasticity is just the starting point and additional work would be needed from the members of a rehabilitation team such as training of the weakened antagonistic muscle, gait training, activities of daily living training and etc. Communication with team members is important so that the involved members would be aware which muscles have been injected and the expected effects. In some selected cases, treated concomitantly with serial casting could reduce spastic contracture and normalise the range of movement of the affected joint.

Table 4. Examples of clinical assessment scales to monitor treatment of spasticity

<table>
<thead>
<tr>
<th>Modified Ashworth Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual analog scale (VAS) for pain</td>
</tr>
<tr>
<td>Goal attainment scale</td>
</tr>
<tr>
<td>Jbensen Taylor Hand Function test</td>
</tr>
<tr>
<td>Ambulation index</td>
</tr>
<tr>
<td>Goniometric assessment of joint movement</td>
</tr>
</tbody>
</table>

Conclusion

The management of spasticity after stroke by a systemic step-cared approach usually can produce optimal results with attainment of desired goals. Although it is rarely needed in post-stroke spasticity, baclofen pump has been reported to be of use in occasional difficult cases.

References

Clinical applications of technology in rehabilitation

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Technology advanced at a tremendous speed after the computer era. Now we can control our home appliances at our finger tips thousands of miles away from home with affordable equipment. For our patients with disability, they may not be able to control their home appliances even within short distances since these technologies are usually designed for normal people. However, with modifications, these technologies may become life-jackets for the disabled people. On the contrary, not every patient accepts hi-tech equipment engaged in their daily life and some may not have the ability to use them1,2. Clinical applications of technology in rehabilitation is thus an art rather than just protocol-driven.

Advancement of training methods

Most technological advancements in medicine are concentrated in the investigations and treatments of patients with minimal patient-technology interactions or interfaces during development. In rehabilitation medicine, however, apart from investigations and treatments, advanced technologies also bring in new training methods3. These new technologies allow disabled people to interact with the training equipment. At the same time, these hi-tech equipment also produce feedback to disabled people and therapists. This creates training methods with very high efficiencies we can never imagine6.

Partial weight supported gait trainer (PWSGT) is one of the good examples. In the past, gait training usually required two to three therapists for one dense hemiplegic and each session may only allow the patient to walk for a few metres. With the help of PWSGT nowadays, patients can complete hundreds of gait cycles with the help of one therapist4. This application can help start rehabilitation earlier for suitable paraplegic patients through simulated lower limb ambulation. With the advancement of smart phones, internet and wireless communication platforms in recent years, environmental control can easily be operated with user friendly interfaces and great feasibility5. This is a great example of communication technology helping patients with disability, which was a dream of the past generations.

Difficulty in prescription

As we all know, every patient is unique. Although the advanced technology is usually flexible and user friendly, these systems still have inherent limitations creating barrier for a precise prescription. Of course we can modify the system to accommodate the special needs of the patients. However, after modification, these systems may not be working as good as it was designed and usually the warranty will become void.

Furthermore, due to heterogeneity of patients & needs, it is difficult to conduct randomised control trials (RCT) to prove the efficacy of these new technologies. If you really want to prove it, it takes a huge number of patients and extremely long duration for the trials. It is further complicated by the speed of new technologies development. Most of the time, new technology appears before the older technologies were proven useful. The waiting period for RCT evidence may actually decrease the earlier acceptance of useful technologies into rehabilitation practices. PWSGT is a concrete example of this phenomenon6.

Expensive Hi-tech equipment

Due to enormous developmental cost, high-technology equipment are usually expensive. In the past, a set of virtual reality equipment may cost two to three million HK dollars that few rehabilitation centres could afford. Although the cost for computer equipment is decreasing, high-technology equipment remains expensive as the patent and development costs of the equipment are still the main determinants of the equipment price.

Thanks to the advancement of low cost video games in recent years, some training equipment can be replaced with this simple affordable solution proven to be as effective as some of the expensive equipment7. Furthermore, the training can be extended to the home environment and even family members can operate. This also helps to enhance the training motivation and acceptance by patients. Application of technology always requires innovation.
Future trend of rehabilitation technology

There is little doubt that future rehabilitation training trends will be computer-based and robot driven training. This definitely saves time and manpower for the therapists. At the same time, these technology allow rehabilitation physicians and therapists gather more information to tailor-make the training and perform advanced bio-medical engineering research.

With the help of functional magnetic resonance imaging (fMRI) technique, we are now able to understand more about the mapping of the brain functions. Researchers have started to explore the possibility of integration of the computer and the human brain. Different kinds of brain-computer interfaces were being developed. Prototypes of brain-waves operated robots were developed and successfully operated in human subjects. But there is still a long way to the mass production phase of such equipment.

Conclusion:

Technology helps everyone including disabled people in need. However careful selection of equipment and innovative application of the technology still require the enthusiastic rehabilitation physicians and therapists to provide holistic and practicable function-based solutions. We are very hopeful that future quality of life of disabled people will be greatly enhanced by the integration of technology and the human body.

References

Eating problem after strokes

Dysphagia is highly prevalent following strokes with estimates ranging from 30%–65% . Although many patients regain functional swallowing spontaneously within the first month following strokes, some patients will maintain difficulty in swallowing beyond 6 months . The impairment of swallowing places the patients at risk of weight loss, malnutrition, fluid depletion, aspiration and related complications . The aim of nutritional intervention is to establish an optimal nutritional status and to eliminate or reduce the risk of developing medical complications associated with dysphagia .

Diet Modification

Modifying the consistency of solid food and/or liquid is a mainstay of compensatory intervention for patients with dysphagia. Dietitians will provide nutritional intervention based on the speech and language therapist’s recommendation and patient’s energy requirements.

In 2002, a joint task force from the American Dietetic Association and the Speech-Language Association established the National Dysphagia Diet (NDD) . It is comprised of four levels of food modification with specific food items recommended at each level (Table 1):

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
<th>Examples of recommended foods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1: pureed</td>
<td>Homogeneous, cohesive, and pudding like. No chewing required, only bolus control</td>
<td>Purred: meats, starch (like mashed potatoes), and vegetables with smooth sauces without lumps. Purred/strained soups, Pudding, soufflé, yogurt</td>
</tr>
<tr>
<td>Level 2: mechanically altered</td>
<td>Moist, semi-solid foods, cohesive. Requires chewing ability</td>
<td>Cooked cereals with little texture, Moistened ground or cooked meat, Moistened, soft, easy to chew canned fruit and vegetables</td>
</tr>
<tr>
<td>Level 3: advanced</td>
<td>Soft-solids. Requires more chewing ability</td>
<td>Well moistened breads, rice, and other starch. Canned or cooked fruit and vegetables. Thin sliced, tender meats/poultry</td>
</tr>
<tr>
<td>Level 4: regular</td>
<td>No modifications, all foods allowed</td>
<td>No restrictions</td>
</tr>
</tbody>
</table>

(Adapted from Groher ME, Crary MA. Dysphagia: Clinical management in adults and children. Maryland Heights, MO. Mosby, Elsevier; 2010)

Liquid viscosity

Patients who struggle to swallow thin liquids are usually prescribed thickened liquids. Using properly thickening agents to achieve the recommended consistency of liquids, one can help to reduce the incidence of choking and prevent fluids from getting into the lungs.

There are three levels of liquid consistency prescribed by NDD:

- **Nectar-like** - Liquids must be thickened to a nectar consistency such as maple syrup, Ensure, pear/apricot nectar or eggnog consistency.
- **Honey Thick** - Liquids that are honey thick must be thickened to the consistency of honey, these cannot be taken by a straw.
- **Pudding Thick/Spoon Thick** - liquids that are pudding thick need to be taken with a spoon.

Fluid intakes in this patient group should be closely monitored by a health care team to reduce the risk of dehydration. General guidelines for the determination of fluid requirements are given in Table 2. Fluid requirements are higher with increased losses from fever, diarrhoea, vomiting, and sweating.

<table>
<thead>
<tr>
<th>Table 2: Baseline daily fluid requirements for adults</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult patient group (age, yr)</td>
</tr>
<tr>
<td>Young, active (16-30)</td>
</tr>
<tr>
<td>Average adult (25-55)</td>
</tr>
<tr>
<td>Older patient (56-65)</td>
</tr>
<tr>
<td>Older patient (66-75)</td>
</tr>
<tr>
<td>Elderly patient (&gt;75)</td>
</tr>
</tbody>
</table>

Enteral nutrition support in stroke patients

Patients with severe dysphagia, enteral nutrition (tube feeding) should be provided until swallowing improves. Polymeric formulas are frequently used and are generally well-tolerated with patients with a functional gastrointestinal tract. These formulas are nutritionally complete and contain macronutrients in the form of isolates of intact protein, fats and carbohydrate polymers. When necessary, commercial products (e.g., fibre powder, protein powder, or MCT oils) can also be added to polymeric formulas to meet the patients’ nutritional needs.
Transition from enteral to oral feeding

As swallowing difficulties improve, dysphagic patients with a feeding tube are candidates to resume normal oral feeding. Before discontinuing tube feeding, patients must demonstrate a safe and efficient swallow on a consistent basis and must be able to consume adequate nutrition requirements orally. During the transition to oral feeding, close monitoring of the swallowing ability, hydration, electrolyte balance, body weight, and development of respiratory complications is necessary.

Modifiable risks observed in stroke adults

In a large single centre study of 1008 stroke patients aged 15 to 49, it was observed that young stroke adults had high prevalence of dyslipidaemia (60%), smoking (44%) and arterial hypertension (39%). In addition, the Stroke in Young Fabry Patients Study (SIFAP), with 4467 stroke patients aged 18-55 showed high incidence of smoking, physical inactivity, arterial hypertension, dyslipidaemia, alcohol consumption, and short sleep were observed in men and physical inactivity, obesity, central obesity, atrial hypertension, dyslipidaemia, obesity and diabetes mellitus were observed in women.

Benefit of exercise in stroke prevention

Cross-sectional studies showed that people who were physically active had lower ischaemic stroke incidence. Reviewing on physical activity in the prevention of ischaemic strokes, Middleton and his team also found out that exercise reduces stroke risks.

Research showed that post stroke aerobic exercise was found to be beneficial in reducing recurrent stroke risks. Insulin resistance and impaired glucose tolerance are common in patients after strokes especially during the subacute and chronic stages. That is why stroke patients are prone to macrovascular and microvascular accidents.

Recently, a preliminary study on the effect of resistive training on insulin resistance showed that it helps to improve insulin sensitivity and reduce hyperinsulinaemia. The postulated mechanism of exercise on stroke prevention includes increased cerebrovascular function as well as enhancing brain ischaemic tolerance (Fig. 1).

Exercise recommendation

Some studies supported that stroke risk reduction is positively related to the intensity of the exercise. Lower incidence of strokes was observed in intense exercises (at least 5.5 METs) or the stationary cycling group. On the contrary, Deplanque (2012) found out that low and moderate exercising groups had low stroke risks. Most studies supported the benefit of moderately intense exercises in stroke risk reduction. Stroke prevention guidelines recommend no less than 30 minutes of moderately intense exercise per day to control stroke risks.

Stress management and recurrence of stroke

It is obvious that stress management is beneficial on the reduction of stroke risk factors. A recent study (2012) on stress reduction through mind-body intervention on the Black population positively related meditation to a significant reduction of mortality, incidence of myocardial infarct and stroke due to better control of blood pressure and stress.

 Calls for action

In conclusion, risk factors of stroke are modifiable and the changes are lifestyle related. Besides treating hyperlipidemia and hypertension, being physically active, keeping ideal body weight, eating a healthy diet, stop smoking, and stress reduction are of equal importance in prevention of stroke and cardiovascular incidence. In order to prevent stroke recurrence in the future, there is an urgent and strong urge for multidisciplinary effort in primary and secondary prevention of stroke.

References


With the Hong Kong Marathon drawing in record numbers of runners, it seems the running boom is more than a passing fad. From 1076 runners in 1997, this has grown exponentially to over 72000 participants in 2013. Whether it is to lose weight or feel good, running is an inexpensive and easily accessible activity that anyone can do. Popular road races are now so crowded you may well be stepped on at the start line.

For those who prefer to run in wide open spaces, alternative options exist. In the form of longer and more challenging routes, these are called ultramarathons.

Beyond the Marathon

An ultramarathon is any sporting event involving running longer than the marathon distance of 42.195 kilometres (km). Technically, running 43 km fulfils the criterion but it does not sit quite right with the true spirit of the sport. For most runners, 50km races are the gateway into “ultras,” as ultramarathons are commonly known. Races are either solo or team events. Some are multi-day and can involve orienteering skills. Often subject to inclement weather, altitude and rugged terrain, the unpredictable elements add excitement and appeal to the race. Moreover, a race marked on your calendar keeps you motivated to train, in spite of detractors. It offers an interesting route with aid stations providing nourishment and encouragement by volunteers. At the end, a medal and an inherent sense of accomplishment awaits the finisher.

Why Ultra-running?

Most people think it is a crazy sport and question the motivation for such extreme endeavours. The common reasons given by ultra-runners are a passion for running, a love of nature and a spirit for challenges. You gain a special kind of awareness about yourself when alone out there. Listening to the quiet sounds of your feet, running forces you to focus on moving forward. When fatigue sets in, you rely on mental fortitude to power your body to the finish line where a sense of accomplishment awaits.

There is no distinct process by which a runner evolves into an ‘ultra-runner’. I started running 17 years ago to get fit. Having discovered the abundance of trails in the Hong Kong country parks, my running miles gradually grew longer. My first ultra, the Oxfam Trailwalker 100km was an unplanned affair. I was a last minute replacement for an injured walker on a Hong Kong Medical Association team. At the finish line, I vowed never such folly again. Little did I know then that I would complete another 16 Trailwalkers in Hong Kong, Japan and New Zealand with race times ranging from 15 to 30 hours. With smaller numbers of participants, longer distances and variable conditions, the competition is not versus others as much as with oneself.

In fact, running an ultra is not as difficult as running a marathon. You can take it really slowly. The race strategy is not about being fast. Rather, it is about not stopping. Therefore, training is based on long runs at less intense speeds. Compared to marathon speed training, you rarely need to push until near maximum heart rates. Ultras could be perfect for those who prefer a slow and steady pace.

The local abundance of trails combined with easy accessibility is the reason for the growing popularity of the sport. In the coming year, Hong Kong will host three 100km races, a 168km race and many other mountain marathons. It is fast becoming a leading trail running destination in Asia.
The Ultra-lifestyle

From being the most private and self-obsessed pursuit, ultras can also be a most sociable activity. Training is mostly done alone, fitting in the balance between work and family commitments. Often, one resorts to waking early for an early run or sleeping late after pounding pavements. Setting time aside for 100 kilometres per week requires good time planning. Competitive runners easily run over 200 kilometres weekly.

Conversely, the weekends are filled with opportunities to train longer distances (usually around 50 km) with friends or clubs. Training or racing connects you to a new group of friends. It is a small but warm fraternity of friendly folks with a common passion, where one’s professional background is irrelevant. For team events, camaraderie and friendship result from months of training together. Thanks to Facebook, and a plethora of running apps, training is logged and shared during weekdays. And overseas races provide an excellent excuse to travel together and enjoy post-race indulgence in food and sightseeing.

In case I have stimulated your interest, here are some suggested races.

Starting at home

With more than 5 ultras at home, it is sensible to start locally. Races are held on most local trails, such as the annual Oxfam Trailwalker (Maclehose trail), Raleigh (Wilson trail) and the Greenpower (Hong Kong trail). The ultimate race in Hong Kong is by invitation only. Of the 5 racers invited to the exclusive HK 4 Trails Ultimate Challenge which covers 298km and cumulative elevation of 14400m over 4 long distance trails within 3 days, only 3 completed the challenge.

For beginners, the annual Round the Island 64km time trial is a good event to start with. The route ingeniously links catchwaters, country park trails and roads on Hong Kong island. It is famed for delicious home baked brownies at checkpoints and the eclectic finishers’ T-shirt printed with every runner’s name.

Off the beaten track, the HK100 starting in Sai Kung or the Lantau100/50 offers or will offer breathtaking scenery on trails you never knew existed. Two new races are scheduled at the end of 2013, namely the HK168 km and the North Face 100km. It is amazing that a small place like Hong Kong has such a variety of trails.

Going further afield

On paved roads, the world’s oldest and largest ultramarathon is the 90km Comrades Marathon in South Africa. On deserts, the most famous race is the Marathon des Sables, where temperatures reach 50 degrees Centigrade. The route across the Sahara Desert covers 251km in six days. For prestige and history, the Western States Endurance Run in California since 1974 is the oldest 100 mile trail race.

The queen of the ultras, the Ultra Trail du Mont Blanc (UTMB) takes in mountains and high altitude passes, with a 168km circuit of the Mont Blanc Massif in France, Switzerland and Italy. It involves 9600m of positive height gain and the scenery is spectacular. A similar race closer to home is the Ultra Trail Mt. Fuji (UTMF).

It is impossible to list all the ultramarathons worldwide, only a few to fuel your imagination and interest. Just as I ventured into this exciting sport, perhaps you too will be inspired to put on your running shoes and shoot for your first ultra.

It will definitely be an unforgettable experience.

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**Rental Fees of Meeting Room and Facilities at The Federation of Medical Societies of Hong Kong**

*(Effective from October 2009)*

<table>
<thead>
<tr>
<th>Venue or Meeting Facilities</th>
<th>Member Society (Hourly Rate HK$)</th>
<th>Non-Member Society (Hourly Rate HK$)</th>
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<tr>
<td></td>
<td>Peak Hour</td>
<td>Non-Peak Hour</td>
</tr>
<tr>
<td>Multifunction Room I (Max 15 persons)</td>
<td>150.00</td>
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<tr>
<td>Council Chamber (Max 20 persons)</td>
<td>240.00</td>
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<tr>
<td>Lecture Hall (Max 100 persons)</td>
<td>300.00</td>
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Non-Peak Hour: 9:30am - 5:30pm
Peak Hour: 5:30pm - 10:30pm

LCD Projector: 500.00 per session
Microphone System: 50.00 per hour, minimum 2 hours
Dermatological Quiz

Dr. Ka-ho LAU

MBBS(HK), FRCP(Glasg, Edin), FHKCP, FHKAM(Med)
Private dermatologist

This 70-year-old woman has a history of diabetic nephropathy with chronic renal failure on conservative treatment. She developed these very itchy papules at her knees and lower thighs for a few months and the lesions were aggravated by repeated scratching. A skin biopsy was performed to confirm the diagnosis.

Questions:

1. What is your clinical diagnosis or possible differential diagnoses?
2. What are the histological changes that characterise the disease?
3. How will you manage her skin disease?

(See P.34 for answers)
The Federation of Medical Societies of Hong Kong is calling for interested health care providers to offer discounted health and body check programmes to members of our member societies and their family members. For those who are interested, please contact our secretariat with information of proposed packages and quotations. Thank you for your kind attention!

The Federation’s Collaboration Health Programme with RTHK

Starting from 7 June 2013, the second series of the health programme (精靈一點) of RTHK Radio One has kicked off with the collaboration of the Federation. It’s a regular medical and healthcare information session which runs from 2pm to 3pm every Friday. In this newly launched series, a phone-in section is added to provide an interactive channel for the audience to voice up-to-date healthcare related issues.

In June, the participating guest speakers representing the Federation, on behalf of their societies, include Dr. Shu-kin LI from the Hong Kong College of Cardiology, Dr. Raymond CHOW from the Hong Kong Association of Oral and Maxillofacial Surgeons, Dr. Sigmund LEUNG from the Hong Kong Dental Association, and Dr. Jemmina WONG from the Hong Kong Psychogeriatric Association.

The programme will run from Jun to Aug with many more hot topics to be discussed. The programme can be reviewed on the following link – http://www.fmshk.org/fmshk.php?id=295

Scientific Symposium on Hypertension

On 6 Jun 2013, a scientific symposium on hypertension was held at the St. Betty, IFC Mall Central. The symposium was attended by nearly 90 guests from our member societies and partners from medical & healthcare communities.

Aligning with the WHO theme, Hypertension, the Foundation is privileged to organise a symposium on this global health issue with two distinguished cardiologists, Prof. Hung-fat TSE and Prof. Alan H GRADMAN, as our speakers, and the Executive Committee member of FMSHK, Dr. Ben FONG, as our chairman. The talks were interesting and informative, which gave the audience valuable update on the latest development in prevention and treatment of hypertension. Meanwhile, we wish to thank Takeda for sponsoring the symposium.
The Hong Kong Society of Gastroenterology

The Hong Kong Society of Gastroenterology was incorporated in 1981 to promote the advancement of gastroenterology through organizing scientific meetings, funding research projects, providing public education, offering scholarship awards.

Currently, the Society has 16 honorary fellows, 145 fellows and 42 members.

The Society celebrated its 30th anniversary in 2011. Throughout these years, our Council worked hard to achieve the objectives and will continue such efforts in the years to come.

The year of 2012 has been busy for the Society and eight scientific meetings were organized throughout the year.

Every year, two to three newsletters are published which contain scientific updates, highlights of events and major meetings. There will be two issues this year in June and December.

Our recent Annual General Meeting cum Scientific Meeting was held recently on 14 March 2013 during which the honorary fellowship of our Society was bestowed upon distinguished guests, Professor Barry J. Marshall AC, Nobel Laureate, Clinical Professor of Medicine and Microbiology of University of Western Australia and Professor Ching-Lung Lai, Simon KY Lee Professorship in Gastroenterology and Chair of Medicine & Hepatology of The University of Hong Kong.

The evening was highlighted by the captivating state-of-art lectures “Helicobacter pylori as an example of curiosity driven research” delivered by Professor Marshall and “The Hepatitis B Virus and I” by Professor Lai.

Another research project will be funded this year to aid gastroenterological research and investigation into the causes and treatment of gastroenterological and liver diseases.

We invite you to visit our website http://www.hksge.org for more information and news.

The Hong Kong Society for Nursing Education (HKSNE)

The Hong Kong Society for Nursing Education (HKSNE), in the past half a year, has actively participated in various events and made representation on issues that concerned about the interests of nursing profession and nursing education.

In response to the recent public concern on incidents involving safety of medical and related procedures and medical professionalism in late October 2012, the Society has joined the Hong Kong Federation of Medical Societies of Hong Kong and 38 other health care professional societies to make position statements via press release on the monitoring of cosmetic business in relation to medical related procedures; the monitoring of use of experimental procedures, and blood and pharmaceutical products; the doctors’ professional conduct.

In the meetings and symposium on strategic review on Healthcare Manpower Planning and Professional Development that were held in the past few months, the Society discussed and shared views on healthcare manpower planning and projection and regulatory framework for healthcare. The opinions that have been expressed include: the importance of retaining nurses; the provision of support to nurses in work settings; the urge government and profession’s efforts to review and monitor the nursing manpower; the development of specialization in the nursing profession; the need of comprehensive manpower planning; the implementation of compulsory continuous professional education; the building of a more effective system to detect, deal and report with poor performance and improve quality of care should be developed; the need to re-define the role of nurses and other supportive health care workers and the feasibility of establishing a ‘competency-based professional development model’ with reference from international experience.

The Society has also hold the first collaboration course with the Hong Kong College of Education and Research in Nursing (HKCERN) on Multiple Choice Question Writing Workshop in late October with encouraging responses from fellow nurses.

In Hong Kong, Prosthetics and Orthotics (P&O) services have been provided to the community since the 60’s. To better promote and enhance the quality of P&O services,
The Hong Kong Association of the Pharmaceutical Industry

HKAPI Code of Practice (16 Edition) is effective on 1st April, 2013

As an on-going commitment to provide accurate and scientific based information on pharmaceutical products and to build professional partnerships with our healthcare professionals for the best interest of society, the Code of Practice has been revised.

Electronic version is available at http://www.hkapi.hk/practice.asp

CERTIFICATE COURSE FOR allied health personnel who work in the fields of clinical oncology, radiation oncology, diagnostic radiology and pathology or nursing workers who need to take care of cancer patients during treatment and want to know more about these oncology aspects.

● CME/CNE Course ● Course No. C224

Certificate Course on Advancements In Cancer Science & Cancer Therapy

<table>
<thead>
<tr>
<th>Date</th>
<th>Topics</th>
<th>Descriptions</th>
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<td>3 Aug</td>
<td>Molecular cancer diagnostic tests</td>
<td>PCR, in situ hybridization, gene chip, DNA sequencing tests, etc.</td>
<td>Dr. Chris L.P. WONG</td>
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<td>10 Aug</td>
<td>Molecular pathways in cancer development</td>
<td>Oncogenes, tumor suppressor genes, cancer cell cycle, DNA methylation, programmed cell death etc.</td>
<td>Dr. Timothy T.C. YIP</td>
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<td>17 Aug</td>
<td>Classification &amp; mechanism of action of targeted drugs</td>
<td>AKT, MAPK &amp; EGFR pathways in drug development, monoclonal antibody &amp; chemical inhibitor types of targeted drugs, siRNA, nano-particles</td>
<td>Dr. Timothy T.C. YIP</td>
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<td>24 Aug</td>
<td>Clinical advances in cancer targeted therapy</td>
<td>Clinical use of targeted drugs in cancer management, their efficacy and side-effects from landmark clinical trials</td>
<td>Dr. Joseph S.K. AU</td>
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<td>31 Aug</td>
<td>Conventional &amp; modern cancer radiotherapy equipment</td>
<td>Physical advances in linear accelerator, after-loading brachytherapy, stereotactic radiosurgery, intensity modulated radiation therapy (IMRT), tomography</td>
<td>Dr. Ben S.K. YU</td>
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<td>7 Sep</td>
<td>Radiobiology principles in cancer treatment</td>
<td>Biological mechanism in daily fractionated radiotherapy (4Rs in radiobiology etc.) affecting treatment efficacy</td>
<td>Dr. Timothy T.C. YIP</td>
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<td>21 Sep</td>
<td>Clinical advances in cancer radiotherapy</td>
<td>Clinical use of external beam irradiation &amp; brachytherapy in treating different cancers, when to use RT, toxicity, new advancement in RT</td>
<td>Dr. Roger K.C. NGAN</td>
</tr>
</tbody>
</table>

Date: 3 August 2013 - 21 September 2013 (Every Saturday, skip 14 September)
Time: 2:30 pm – 4:30 pm
Venue: Lecture Hall, 4/F, Duke of Windsor Social Service Building, 15 Hennessy Road, Wan Chai, Hong Kong

Language Media: English (Supplemented with Cantonese)
Course Fee: HK$750 (7 sessions)
Certificate: Awarded to participants with a minimum attendance of 70%

Enquiry: The Secretariat of The Federation of Medical Societies of Hong Kong
Tel.: 2527 8898 Fax: 2865 0345 Email: info@fmshk.org
<table>
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<th>Sunday</th>
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<td>HKMA Community Network - Pneumonia Management and Prevention</td>
<td>HKMA Community Network - Chronic Care Management of Enuresis</td>
<td>HKMA Kowloon East Community Network - Certificate Course on Enuresis (Session 3)</td>
<td>HKMA Kowloon East Community Network - Certificate Course on Bringing Better Health to Our Community 2013 (Session 3)</td>
<td>HKMA YTM Community Network - Certificate Course on Enuresis (Session 3)</td>
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<td>VOL.18 NO.7 JULY 2013</td>
<td>THE HONG KONG MEDICAL DIARY</td>
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<td><strong>2 TUE</strong></td>
<td>2:00 pm</td>
<td>HKMA Tai Po Community Network- Practical Tips for Primary Care Physicians in BPH Screening and Management</td>
<td>Ms. Sharon Lam Tel: 3189 8767</td>
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<td></td>
<td>8:00 pm</td>
<td>FMSHK Officers' Meeting</td>
<td>Ms. Nancy Chan Tel: 2527 8898</td>
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<td><strong>3 WED</strong></td>
<td>1:00 pm</td>
<td>HKMA Shatin Doctors Network- Ophthalmology Survival Guide for General Practitioners</td>
<td>Ms. HO Tel: 2388 7773 1.5 CME points</td>
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<td><strong>4 THU</strong></td>
<td>1:00 pm</td>
<td>HKMA Kowloon West Community Network- Update Treatment Option in Management of Moderate Chronic Pain</td>
<td>Miss Hana YEUNG Tel: 2527 8285 1 CME point</td>
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<td><strong>7 SUN</strong></td>
<td>7:30 pm</td>
<td>((1)Cutting edge: Exposure or encounter? (2)Three cases of cutaneous continent diversion  (3)Avoiding pitfalls in BPH management)</td>
<td>Ms. Tammy Hung Tel: 9609 6664 1 CME point</td>
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<td><strong>9 TUE</strong></td>
<td>2:00 pm</td>
<td>HKMA Tai Po Community Network- Osteoporosis: An Orthopaedic Surgeon’s Perspective</td>
<td>Ms. Sharon Lam Tel: 3189 8767 1 CME point</td>
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<td><strong>10 WED</strong></td>
<td>7:30 am</td>
<td>HKMA Tai Po Community Network- Osteoporosis: An Orthopaedic Surgeon’s Perspective</td>
<td>Dr. Gilberto LEUNG Tel: 2235 3368 1.5 CME points</td>
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<td></td>
<td>9:00 am</td>
<td>HKMA Kowloon West Community Network- Osteoporosis: An Orthopaedic Surgeon’s Perspective</td>
<td>ADC 2013 Secretariat Tel: 3151 8900</td>
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<td><strong>11 THU</strong></td>
<td>1:00 pm</td>
<td>HKMA Kowloon East Community Network – First Session of the “Certificate Course on Alzheimer’s Disease”; Introduction to Dementia and Differential Diagnoses</td>
<td>Miss Hana YEUNG Tel: 2527 8285 1 CME point</td>
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<td></td>
<td>2:00 pm</td>
<td>HKMA Kowloon West Community Network- Osteoporosis: An Orthopaedic Surgeon’s Perspective</td>
<td>Ms. Viviane Lam Tel: 2527 8452 1 CME point</td>
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<td><strong>14 SUN</strong></td>
<td>8:00 am</td>
<td>Tseung Kwan O Dragon Boat Race</td>
<td>Ms. Dorothy KWOK Tel: 2527 8285</td>
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<td><strong>16 TUE</strong></td>
<td>1:45 pm</td>
<td>HKMA Tai Po Community Network- Management of Dermatitis (Eczema)</td>
<td>Mr. Eddy TAI Tel: 6246 6725 1 CME point</td>
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<td>7:00 pm</td>
<td>HKMA Community Network - Pneumonia Management and Prevention</td>
<td>Ms. Candice TONG Tel: 2527 8285 1.5 CME points</td>
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<td><strong>18 THU</strong></td>
<td>1:00 pm</td>
<td>HKMA Kowloon East Community Network- Third Session of the Certificate Course for GPs 2013: Management of Primary Headache Disorders in Clinics: From Diagnosis to Treatment</td>
<td>Ms. Marina Pan Tel: 2255 8881 1 CME point</td>
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<td>8:00 pm</td>
<td>HKMA Community Network - Pneumonia Management and Prevention</td>
<td>Ms. Nancy CHAN Tel: 2527 8898</td>
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<td><strong>20 SAT</strong></td>
<td>1:00 pm</td>
<td>HKMA Kowloon East Community Network- Second Session of the“Certificate Course on Alzheimer’s Disease”; Cognitive Assessment in Practice</td>
<td>Miss Hana YEUNG Tel: 2527 8285 1 CME point</td>
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<td>HKMA Community Network - Pneumonia Management and Prevention</td>
<td>Ms. Nancy CHAN Tel: 2527 8898</td>
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<td>HKMA Kowloon West Community Network- Update Treatment Option in Management of Moderate Chronic Pain</td>
<td>Miss Hana YEUNG Tel: 2527 8285 1 CME point</td>
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<td><strong>25 THU</strong></td>
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<td>HKMA Community Network - Pneumonia Management and Prevention</td>
<td>Ms. Sharon Lam Tel: 3189 8767 1 CME point</td>
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<td><strong>30 TUE</strong></td>
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<td>HKMA Kowloon West Community Network- Update Treatment Option in Management of Moderate Chronic Pain</td>
<td>Ms. Sharon Lam Tel: 3189 8767 1 CME point</td>
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Answers to Dermatological Quiz

Answers:

1. The hyperkeratotic papules and nodules symmetrically affecting the shins and lower thighs of this diabetic woman with chronic renal failure is most compatible with acquired perforating dermatosis. This acquired form of perforating disease arises in adults and is usually associated with diabetes mellitus and/or pruritus of renal failure. It occurs most commonly on the legs as shown in our patient, but generalised or widespread papules or nodules can be seen. The central keratotic core, which is sometimes dislodged by the patients, is a useful clue to the diagnosis of this disease. Other differential diagnoses include prurigo nodularis, folliculitis, multiple keratoacanthomas, dermatofibroma, perforating granuloma annulare and porokeratosis.

2. The histological findings for acquired perforating dermatosis show a central plug of crusting or hyperkeratosis, with variable parakeratosis, depending on the stage of the lesion. The process of transepidermal elimination of collagen and elastic fibre through the spinous layer of the epidermis and into the stratum corneum is a characteristic histological pattern which aids the clinical diagnosis of this disease.

3. Treatment of acquired perforating dermatosis is often difficult and there have been no well-designed studies of therapeutic interventions. It is important to avoid scratching and trauma which can precipitate a Koebner phenomenon. Antihistamines are marginally helpful, as are most topical steroids. Phototherapy is a particularly good choice for patients of acquired perforating dermatosis with renal disease, since it often relieves the coexisting pruritus. Other therapies that are sometimes helpful include intralesional steroid and oral or topical retinoids. Occasional dialysis patients with acquired perforating dermatosis have been cured after renal transplantation.

Dr. Ka-ho LAU
MBBS(HK), FRCP(Glasg, Edin), FHKCP, FHKAM(Med)
Private dermatologist

The Federation of Medical Societies of Hong Kong
4/F Duke of Windsor Social Service Building, 15 Hennessy Road, Wanchai, HK
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