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Circulation and Content

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The aim of the journal is to promote the development of quality family medicine/general practice in Hong Kong and the region, by publishing editorials, original articles, update reviews, letters to the editor, and self-assessment materials.

Manuscript Criteria - General

Papers submitted for publication should fulfil the following criteria:-

- a. Manuscript to be accompanied by covering letter, signed by all authors stating that it is original and no part of it has been submitted for publication elsewhere and identifying any possible conflict of interest, and the contribution of each author.
- b. Typed in double line spacing with 3cm margins.
- c. Submission of manuscript should be the preferred Microsoft Word (DOC) format, and sent to "carmen@hkcfp.org.hk" with one printed copy of the manuscript to the Editor.
- d. List of full names (both in English with Western name(s) first, then Chinese names hyphenated or initials, and then family name and if applicable in Chinese characters) with a maximum of six authors, giving basic and higher qualifications and current appointment of each.
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- h. Abbreviations should be spelt in full when first used.
- i. Generic names of drugs must be used. Proprietary names may be used in parentheses on the first occasion if necessary.
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- k. Tables and illustrations should be on separate sheets and clearly labelled. The titles should enable interpretation without reference to the text.
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Papers on original research relating to primary care in Hong Kong are particularly welcome.

They should be set out in a standard format with an Introduction giving background and objectives; Method giving details of subjects, study design and measurements, interventions, outcomes, and statistical methods; Results; Discussion; Conclusions; References; and Acknowledgements.

Papers should be between 1,500 and 3,500 words in length.

Graphs and tables should be limited to six and references to 40.

A structured summary of up to 200 words should be set out under the headings of Objective, Design, Subjects, Main Outcome Measures, Results, and Conclusions. Up to five keywords should be given to aid index cross-reference.

Educational Update Articles

They should be relevant to the Family Physician who is trying to keep up to date with recent advances in primary care.

Articles should be between 1,500 and 3,500 words, and structured with a summary, introduction, and main body of article with appropriate subheadings.

Graphs and tables should be limited to six and references to 40.

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Papers on topics and issues of relevance to primary care are welcome. They should present a hypothesis or problem, and offer a way of solving it or a solution for discussion. They should be between 1,500 to 3,500 words, and structured with a summary, introduction, and main body of article with appropriate subheadings.

Case Reports

These articles should be up to 1,500 words reporting cases of particular interest, difficult management, unusual presentations or outcomes, carrying a useful message to other doctors; with no more than one table or illustration and five references.

Letters to the Editor

Letters should be up to 500 words with no more than one table or illustration and five references.

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What medical students are really learning from family doctors: professionalism in practice

Julie Y Chen 陳芸

Midway through their undergraduate studies, medical students at the University of Hong Kong have the opportunity to be attached to family doctors in the community to get a sense of what it is like to be a family doctor and to observe and practice clinical skills including history taking and physical examination. These objectives they meet, but the deepest impression is left by the personal contact with these community doctors - observing their interactions and the way they practise their art. What medical students have to say about this, in their own words, is at the same time very revealing and most heartening.

Consider the following:

"...as the patient greeted the doctor, you could immediately sense the trust the young child had with his doctor and from thence on how a 7 year old boy had no shyness in telling his problems to a grown adult..."

"...it was the first time I have even observed a real family doctor. It seemed effortless for him to identify or diagnose certain problems or disease even before asking the history. I realized these kinds of skills are based on the years of experience he had. He taught me a few tricks that had become very useful...and are the most useful skills I have learnt..."

"...It was amazing how he tackled a compliance issue in an Alzheimer's patient. I will never forget the tone, the smart use of tailoring timing of medication and going the extra mile to help certain patients. It is so rewarding [to see] and [this goes] beyond the science, anatomy and pharmacology - it was sensible and delivered so lovingly!"

"...attachment was really meaningful especially as my tutors are so willing to teach me...I witnessed the first proctoscopy in my life. I am very glad that the doctor granted me an opportunity to see the procedure. I was very honoured to be able to hold the torch and apply KY jelly."

The quotations above were extracted from the logbooks of Year 3, HKU medical students written during the 2010-11 academic year. All students were required to reflect on what they considered to be the most significant or memorable of their learning encounters during a junior clerkship teaching block which involved 10 different disciplines, including family medicine. Over 50%

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of students chose to write about their learning experience in family medicine, particularly their community family doctor attachments.

What students are telling us is that they are, in fact, learning “professionalism”.

Medical professionalism is a multifaceted concept which can be approached from educational, sociological and clinical perspectives. However, for practical purposes, I would suggest combining the views proposed by the Royal College of Physicians¹ describing medical professionalism as “a set of values, behaviours and relationships that underpin the trust the public has in doctors” with the expected professional roles of a medical practitioner as described by the Medical Council of Hong Kong² namely, a “communicator, educator, humanist, collaborator, health advocate, resource manager, scientist and scholar”. Framed in this way, it is clear that professionalism has to do with what we already do as family doctors and what is already engrained as the core values in the practice of family medicine. These focus on the patient-centred consultation, doctor-patient relationship and holistic care. The representative entries above demonstrated several domains of professionalism as roles expected of doctors:

- *professionalism as a skilled practitioner*, in terms of knowledge and clinical skills (e.g. interpersonal communication, diagnosis and management, link of clinical to basic science),
- *professionalism as a humanist*, manifesting as attitudes or behaviours (e.g. showing respect, compassion, common courtesy, honesty and integrity), and
- *professionalism as an educator* who is conscious of supporting the learning needs of the student (e.g. facilitating learning opportunities, sharing life experience, establishing a positive learning environment)

In addition to telling us they are learning professionalism in family medicine (though they were not specifically identifying professionalism as such), students are also telling us that family doctors are good at “teaching” it.

As the 2010 HKCFP Visiting Professor Amanda Howe described in her presentation “Teaching professionalism in the surgery,”³ we know that family doctors are very well placed for facilitating students to learn about professionalism for several reasons. She noted that primary care is where the patients are, and interacting with a diverse mix of patients inside the surgery helps to develop professionalism especially respect and understanding. She also expressed that role models of doctor-patient relationships in family medicine practice are very strongly professional as the focus is comparatively less on the biomedical and more about values and communication. In fact, role modeling is perhaps the most powerful means of learning professional attributes, and students are keenly aware of this.⁴

So, if students are already learning professionalism through existing attachment experience with family doctors, why should we do anything more about it?

Medical professionalism remains a fixture in the media, a concern for professional and regulatory bodies and, rightly so, a focus for undergraduate and postgraduate medical education. As members of a self-regulating profession, we have a responsibility to maintain the standards of our profession, and through teaching our medical students in their early years we have the unique opportunity to shape the values and attitudes of our youngest future colleagues from the earliest stages of their development into doctors. A systematic review⁵ of the outcomes of early clinical contact in undergraduate medical education supports this view and in particular noted that such initiatives helped students develop professionally and develop a professional identity. Evidence has also shown that students who experienced early patient interaction with engagement in clinician-led small groups had a broader and more complex understanding of professionalism compared with those who had non-clinical teaching only.⁶ Earlier clinical contact with family doctors does have a profound impact.

Drawing on the enthusiasm, the relative open-mindedness and the keen desire to “be a doctor” that all freshly minted medical students exhibit, early clinical attachments to a family doctor starting from the first year of medical school, would be an ideal training ground to foster this interest, introduce elementary clinical skills in a real practice context, introduce the discipline of Family Medicine, and most of all, start the professionalism ball rolling. Moreover, the influence of family doctor teaching can be strengthened through repeated brief contacts over the first 3 years of medical school, and potentially for the duration of the student’s undergraduate education, to allow for a mentorship relationship to develop between individual doctors and students.

It is very exciting to work with family doctors in the community to develop a programme based on these ideas: *Becoming a Doctor: Professionalism in Practice*. The programme will complement the existing Family Medicine and professionalism, medical ethics, and humanities undergraduate curricula and it is proposed to begin in the next academic year with the generous ongoing support of family medicine colleagues. ■

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Translation and validation of the COPD Self-Efficacy Scale (CSES) into Chinese version (CSES-Chi)

Lap-kin Chiang 蔣立建, Lorna V Ng 吳蓮蓮, Lawrence Fung 馮振威, Raymond Tang 鄧禮文, Wilson WS Tam 談維新

Summary

Objective: To translate and validate a language relevant tool for evaluating the self-efficacy of Chinese speaking patients suffering from Chronic Obstructive Pulmonary Disease (COPD) in Hong Kong.

Design: Forward-backward translation of COPD Self-Efficacy Scale (CSES) into CSES-Chi. The validity and reliability were examined by completing the measurements twice within 2-3 weeks. Reliability was examined by test and retest and also internal consistency of scales, while validity was examined by comparing the instrument with other outcome measures.

Subjects: 30 COPD patients were recruited from a General Outpatient Clinic of a regional hospital in Hong Kong to complete a set of health related instruments.

Main outcome measures: Lung function with spirometry, CSES-Chi, self-efficacy for managing shortness of breath (SEMSOB), St. George respiratory questionnaire (SGRQ) and 6 minutes walking test (6MWT).

Results: 28 male and 2 female COPD patients completed the study. All measurements had good test

and retest reliability, the Pearson product-moment correlation coefficient ranged from 0.73 to 0.91 ($P < 0.0001$). CSES-Chi had high internal consistency, with Cronbach's alpha 0.947, and also had excellent retest reliability with intraclass correlation coefficient 0.9 (95% CI 0.80 to 0.95). The Pearson's correlation coefficient between CSES-Chi and other outcome measures ranged from -0.68 to 0.53.

Conclusion: CSES-Chi is a reliable interviewer-administered clinical assessment tool with good validity for self-efficacy in Chinese speaking patients with COPD in primary care setting. The validity of CSES-Chi is medium and which needs further evaluation.

Keywords: Chronic obstructive pulmonary disease, Self-efficacy scale, translation and validation, primary care

摘要

目的：翻譯和驗證適合香港華人的慢性阻塞性肺病患者自我效能評估的工具。

設計：將慢性阻塞性肺病自我效能評估量表（CSES），做正向和倒向翻譯，成為中文版慢性阻塞性肺病自我效能評估量表（CSES-Chi）。在2-3週內通過多種測量指標兩次去驗證其有效性和可靠性。應用測量指標的測試和復驗和內信度以驗證可靠性，對比不同測量指標去驗證有效性。

對象：在附屬香港區域性醫院普通科門診，招募30位覆診慢性阻塞性肺病患者，並完成一系列測量指標檢查。

主要測量內容：肺功能儀測試，中文版慢性阻塞性肺病自我效能評估量表（CSES-Chi），控制氣喘的自我效能評估（SEMSOB），聖佐治胸肺科問卷（SGRQ）和6分鐘步行測試（6MWT）。

結果：28名男性和2名女性慢性阻塞性肺病患者完成了這項研究。測試和復驗所有的測量指標具有良好的的可靠性，皮爾森積差相關係數為0.73至0.91 ($P < 0.0001$)。中文版慢性阻塞性肺病自我效能評估量表（CSES-Chi）具有較高的內度一致性，信度的 α 為0.947，也具有較好的可信度，其

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組內相關係數為 0.9 (95% CI為0.80~0.95)。CSES-Chi和其它不同測量指標的皮爾森積差相關係數是-0.68至0.53。
結論：中文版慢性阻塞性肺病自我效能評估量表(CSES-Chi)，具有良好可靠性及有效性，是由評估員主導基層醫療測試慢性阻塞性肺病華人患者的自我效能的臨床評估工具。CSES-Chi的有效性只是中等，仍需進一步測試。

HK Pract 2011;33:139-145

Introduction

Chronic obstructive pulmonary disease (COPD), characterized by both lung function impairment and disease exacerbation, promotes a cycle of decline that include dyspnea, reduced exercise endurance, physical inactivity and deconditioning, leading to disease progression and, consequently, to disability, poor health related quality of life, and premature mortality.¹ Many individuals with COPD develop a lack of confidence regarding their ability to avoid breathing difficulty while participating in certain activities. This lack of confidence may be expressed as low self-efficacy.² As a result of low self-efficacy, COPD patients may refrain from many routine activities of daily living.²

COPD Self-Efficacy Scale (CSES)

Self-efficacy refers to the personal convictions people have regarding whether or not they feel they can successfully execute particular behaviour in order to produce certain outcomes.³ The CSES was developed specifically for COPD and had shown good test-retest reliability and internal consistency.² There are 32 items categorized onto 5 domains, namely 'negative affect', 'intense emotional arousal', 'physical exertion', 'weather/environment' and 'behavioural risk factors in CSES'. Once problem areas or activities are identified via the CSES, patient's self-efficacy in those situations may be increased through procedures such as systematic desensitization or self-management training. In addition, the information will provide health care providers with a basis for directing further intervention or be used as monitoring tools in the management of COPD patients.

Objective

The objective of this study was to translate and validate a language relevant tool for evaluating the

self-efficacy scale of Chinese speaking COPD patients in Hong Kong.

Methodology

Sample size estimation:

The primary outcome of the study is the test-retest reliability of the CSES-Chi and we expected a strong correlation between the score at test and retest. According to Cohen's estimation, the sample size for detecting a large effect correlation, i.e. $r=0.5$, at 5% level of significance and 80% power, is 28.⁴; hence 30 subjects were recruited.

Three-stage approach

A three-stage approach was adopted in the development of Chinese COPD Self Efficacy Scale (CSES-Chi).

Stage 1: Forward-backward translation and development of CSES-Chi

An expert panel including a doctor, a physiotherapist, a nurse and a COPD patient was established. CSES was first translated into Chinese by one translator. The Chinese version was then back translated into English by a second translator who was blinded to the original English CSES version. Members of the panel were asked to evaluate the language equivalency, language relevancy, and content validity of the Chinese version, CSES-Chi. 5 patients with COPD were invited for pilot testing the draft version of CSES-Chi. Patient's responses or opinions regarding the CSES-Chi were summarized and reviewed. The CSES-Chi was finalized after general consensus was achieved within the expert panel.

Stage 2: Evaluation of CSES-Chi internal consistency and reliability

30 patients were recruited from a General Outpatient Clinic, based on the following inclusion criteria:

1. Previous diagnosis of COPD; and
2. Absence of bronchiectasis, bronchiolitis obliterans, panbronchiolitis and asthma; and
3. Forced expiratory volume in 1 seconds/forced vital capacity (FEV1/FVC) ratio <70% post bronchodilator and no significant bronchodilator response (<12% or 200 ml improvement in FEV1); and

4. No acute exacerbation of respiratory symptoms and no drug change within 4 weeks prior to baseline interview; and
5. Willing to participate and able to give consent.

Exclusion criteria were:

1. Patients who were wheelchair bound; or
2. Patients with severe co-morbidities, including conditions like acute myocardial infarction, in preceding 6 months; or
3. Patients with severe hearing impairment or with a cognitive impairment; or
4. Patient unwilling to participate and unable to give consent.

A standardized protocol regarding questionnaires was developed and two research assistants were trained to interview the subjects in a standardized format. The baseline and retest questionnaires were done by different research assistants. Lung function with spirometry, CSES-Chi, self-efficacy for managing shortness of breath, St. George respiratory questionnaire and 6 minutes walking test were used for baseline and interval assessment. The test and retest reliability was assessed by Pearson's correlation coefficient. The Cronbach's alpha was used to evaluate internal consistency.

Stage 3: Evaluation of the validity of CSES-Chi

Pearson's correlation coefficient test was used to assess the correlation between CSES-Chi and other assessment/questionnaire instruments.

COPD definition

The diagnosis of COPD was confirmed by spirometry, \pm a bronchodilator reversibility test. The severity of the COPD and bronchodilator reversibility were based on the Global Initiative for Chronic Obstructive Lung Disease (GOLD) guidelines.⁵

Self-efficacy for managing shortness of breath (SEMSOB)

SEMSOB uses one question to evaluate how confident a patient can keep their shortness of breath from interfering with what they want to do.⁶

St. George Respiratory Questionnaire (SGRQ)

The St. George Respiratory Questionnaire (SGRQ) is designed to measure health impairment in patients with asthma and COPD.⁷ It is also valid for use in bronchiectasis

Six-minutes walking test (6 MWT)

The 6-MWT is a practical simple test for the objective evaluation of functional exercise capacity. This test measures the distance that a patient can walk on a flat, hard surface in a 6-minute period.⁹ The test and retest 6-MWT were conducted by different physiotherapists according to a standardized protocol.

This translation and validation study has been approved by the Clinical Research Ethics Committee, Kowloon West Cluster of Hospital Authority.

Table 1: The demographic data of study subjects

Sex: no (% of total)	Male: 28 (93%)	Female: 2 (7%)		
Age: Yrs	Mean: 73.6	SD: 5.4		
Smoking status	Current smoker	Ex smoker		
no (% of total)	6 (20%)	24 (80%)		
Employment status	Retired / No	Part time	Full time	
no (% of total)	28 (93%)	0 (0%)	2 (2%)	
Education level	Below Primary	Primary	Secondary	Tertiary or above
no (% of total)	2 (7%)	21 (70%)	4 (13%)	1 (3%)
Comorbidities	HT	DM	IHD	Others, BPH
no (% of total)	7 (23%)	4 (13%)	2 (7%)	2 (7%)
Severity of COPD	Mild	Moderate	Severe	Very severe
no (% of total)	10 (33%)	11 (37%)	7 (23%)	2 (7%)

HT: hypertension; DM: diabetes mellitus; IHD: ischaemic heart disease; BPH: benign prostate hypertrophy.

1 subject has both HT and DM; 2 subjects have both HT and IHD.

Results

28 male and 2 female patients completed the study. Their demographic data are summarized in **Table 1**. The mean (SD) age was 73.6 (5.4) years. The number (percentage) of patients with mild, moderate, severe and very severe COPD were 10 (33%), 11 (37%), 7 (23%) and 2 (7%) respectively. Most of them (93%) were retired or unemployed, with low education levels. All patients have a history of tobacco-smoking exposure, with 20% of them still currently smoke.

Baseline test and retest results are shown in **Table 2**. The Pearson correlation coefficient between test and retest ranged from 0.73 to 0.91 ($P < 0.0001$). CSES-Chi had a high internal consistency as demonstrated by a Cronbach's alpha of 0.947, and an excellent retest reliability (Intraclass correlation coefficient of 0.9 (95% CI 0.80 to 0.95)).

The Pearson product-moment correlation was used to assess the relationship between CSES-Chi and other instruments (**Table 3**). The CSES-Chi was positively correlated with SEMSOB, with r-values of 0.42 and 0.47 during baseline test and retest respectively. CSES-

Chi was also positively correlated with the 6 minutes walking test, but negatively correlated with St George Respiratory Questionnaire. CSES-Chi did not correlate with lung function or forced expiratory volume in 1 second (FEV1). The pattern of correlation in baseline assessment and retest assessment are similar.

Discussion

According to the World Health Organization, COPD will be the fifth commonest disease and the third cause of morbidity in the world by 2020. Currently, COPD is the fifth leading cause of death in Hong Kong.¹⁰ According to statistical report from the Hospital Authority, COPD was the cause of 4% of all urgent hospital admission yearly.¹¹ A local study suggested that 9% of those above 70 years of age have COPD.¹²

Chronic disease management requires a multidisciplinary approach, focusing not only physical aspects, but also psychosocial aspects and quality of life. Low self-efficacy arises when a patient generalizes his or her past experience in certain situations to a similar states or activities. Corrective

Table 2: The outcomes for Test and Retest measurements

Measurements	Test	Retest	Test-retest	P value
	Mean (SD) Score	Mean (SD) Score	Correlation coefficient	
FEV1/FVC	0.54 (0.11)	0.49 (0.11)	0.82	< 0.0001
CSES-Chi	0.70 (0.10)	0.71 (0.09)	0.91	< 0.0001
SEMSOB	6.67 (2.73)	6.73 (2.85)	0.90	< 0.0001
SGRQ	26.67 (11.98)	24.82 (11.65)	0.73	< 0.0001
6 MWT	307.73 (63.17)	313.77 (59.96)	0.91	< 0.0001

FEV1/FVC: Forced expiratory volume in 1 second / Forced vital capacity; CSES-Chi: Chinese version COPD self-efficacy scale; SEMSOB: Self-efficacy for managing shortness of breath; 6MWT: 6 minutes walking test; SGRQ: St. George Respiratory Questionnaire.

Table 3: The correlation of CSES-Chi with other measurement tools

	Test	P value	Retest	P value
CSES-Chi v FEV1	0.14	= 0.47	0.13	= 0.48
CSES-Chi v SEMSOB	0.42	= 0.02	0.48	= 0.007
CSES-Chi v 6 MWT	0.45	= 0.01	0.53	= 0.002
CSES-Chi v SGRQ-Total	- 0.66	< 0.001	- 0.47	= 0.01
CESS-Chi v SGRQ-activity	- 0.57	= 0.001	- 0.45	= 0.01
CSES-Chi v SGRQ-symptoms	- 0.15	= 0.42	- 0.12	= 0.54
CSES-Chi v SGRQ-impact	- 0.68	< 0.001	- 0.46	= 0.01

CSES-Chi: Chinese version COPD self-efficacy scale; FEV1: forced expiratory volume in one second; SEMSOB: Self-efficacy for managing shortness of breath; 6MWT: 6 minutes walking test; SGRQ: St. George Respiratory Questionnaire.

Key messages

1. Due to lack of confidence to avoid or control breathing difficulties, COPD patients usually refrain themselves from many routine activities. This lack of confidence may be expressed as low self-efficacy.
2. The COPD Self-Efficacy Scale (CSES) was developed specifically to assess self-efficacy COPD patients in 5 domains of activities.
3. Once problem areas of COPD patients are identified via the CSES, the patient's self-efficacy in those situations may be increased through procedures such as systematic desensitization or self-management training.
4. Translate and validate a language relevant tool is more applicable to evaluate the self-efficacy of Chinese speaking patients with COPD in Hong Kong.

learning occurs through the individual's successful accomplishments, through individual vicarious experiences, verbal persuasion, or decreased emotional arousal.³ It is obvious that self-efficacy acts as the mediator between changes in health related quality of life, symptoms and physiological outcomes in patients with COPD after treatment or rehabilitation. The information provided by the CSES may assist the physician, other health care providers or behaviour scientist in a number of ways. Firstly, the information may serve to explain why patients engage in some activities but not in others. It is because patient tend to repeat behaviour for which self-efficacy is high and avoid behaviour for which self-efficacy is low.³ Secondly, the information will provide the physician or other health care providers with a basis for directing patients towards activities they believe the patient can perform successfully and be able to perform.² Thirdly, the CSES would be useful in measuring increases in self-efficacy following an educational or self-management intervention.

Most COPD patients are elderly and generally not well educated. They may be unable to understand or comprehend the questions in CSES. Some of the situational description may not be social or cultural

relevant. Therefore, a Chinese version is more appropriate for local COPD patients.

In our study, all the measurements have good correlation between test and retest assessments. Furthermore, CSES-Chi positively correlated with SEMSOB and 6 minutes walking test as would have been expected. The CSES-Chi was inversely correlated with SGRQ¹³, since higher SGRQ scores indicated worse health status. Lung function was not correlated with CSES-Chi, which was also expected since lung function may not fully reflect symptom intensity, function capacity and general well-being.¹⁴

Limitation of the study

This study evaluated the direct literal translated version of CSES, without additions or deletions to the original questionnaire. It did not evaluate the CSES from a cultural perspective. Only COPD patients in one clinic were recruited, thus reducing this study's generalisability. A population wide study including cultural adaptation processes should be conducted in the future.

On average, most patients needed around 20 to 30 minutes to complete the questionnaire, and also need assistance from the research assistant. A simplified version maybe more appropriate for local COPD patients.

Another limitation is the fact that the sample size was calculated based on the sample required for evaluating test/retest reliability. As a result, a larger sample size may be required to evaluate the validity of the instrument.

Conclusion

CSES-Chi is a reliable interviewer-administered clinical assessment tool with good validity for self-efficacy in Chinese speaking patients with COPD in the primary care setting.

Acknowledgment

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Appendix: The COPD Self-Efficacy Scale

COPD Self-Efficacy Scale (CSES)	慢性阻塞性肺病自我效能評估量表 (CSES-Chi)
<p>Read each numbered item below, and determine how confident you are that you could manage breathing difficulty or avoid breathing difficulty in that situation. Use of the following scale as a basis for your answers:</p> <p>5 = Very confident 4 = Pretty confident 3 = Somewhat confident 2 = Not very confident 1 = Not at all confident</p>	<p>請你仔細閱讀以下所列項目，並且自我評估當你身處此境況時，你有多少自信去處理呼吸困難或者避免發生呼吸困難。</p> <p>5 = 非常有自信 4 = 甚有自信 3 = 有些自信 2 = 不太有自信 1 = 完全無自信</p>
<p>1 When I become too tired. 2 When there is humidity in the air. 3 When I go into cold weather from a warm place. 4 When I experience emotional stress or become upset. 5 When I go up stairs too fast. 6 When I try to deny that I have respiratory difficulties. 7 When I am around cigarette smoke. 8 When I become angry. 9 When I exercise or physically exert myself. 10 When I feel distressed about my life. 11 When I feel sexually inadequate or impotent 12 When I am frustrated. 13 When I lift heavy objects. 14 When I begin to feel that someone is out to get me. 15 When I yell or scream. 16 When I am lying in bed. 17 During very hot or very cold weather. 18 When I laugh a lot. 19 When I do not follow a proper diet. 20 When I feel helpless. 21 When I drink alcoholic beverages. 22 When I get an infection (throat, sinus, cold, the flu etc). 23 When I feel detached from everyone and everything. 24 When I experience anxiety. 25 When I am around pollution. 26 When I overeat. 27 When I feel down or depressed. 28 When I breathe improperly. 29 When I exercise in a room that is poorly ventilated. 30 When I am afraid. 31 When I experience that loss of a valued object or a loved one. 32 When there are problems in the home. 33 When I feel incompetent. 34 When I hurry or rush around.</p>	<p>1 當我感到極度疲倦時。 2 當空氣的濕度偏高時。 3 當我由溫暖地方進入冰冷地方時。 4 當我感覺有精神壓力或不開心時。 5 當我急速上樓梯時。 6 當我嘗試掩飾呼吸困難時。 7 當我身處有煙味的空間時。 8 當我變得憤怒時。 9 當我進行運動時或者進行體力活動時。 10 當我覺得有生活壓力時。 11 當我覺得性生活不能滿足或者有性功能障礙時。 12 當我覺得情緒激動時。 13 當我拿起重物時。 14 當我覺得有人在追趕我時。 15 當我高聲呼叫或尖叫時。 16 當我躺在床上時。 17 當我處於炎熱或者寒冷天氣時。 18 當我持續大聲笑時。 19 當我偏離正常飲食習慣時。 20 當我覺得無助時。 21 當我飲含酒精飲品時。 22 當我受到感染時(例如：喉嚨發炎，鼻竇炎或傷風感冒) 23 當我感覺空虛、寂寞時。 24 當我覺得焦慮時。 25 當我處於空氣污濁環境時。 26 當我吃得過飽時。 27 當我感覺情緒低落或抑鬱時。 28 當我呼吸不暢通時。 29 當我在空氣不流通的環境內運動時。 30 當我感覺害怕時。 31 當我遺失貴重物品或者親友過世時。 32 當家中發生突發事件或困難時。 33 當我覺得能力不足時。 34 當我匆忙或焦急時。</p>

Usefulness in using portable overnight pulse oximeter for screening obstructive sleep apnea in adult patients in primary health care setting

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Summary

Objective: 1. To test the usefulness of using portable overnight pulse oximeter for obstructive sleep apnea screening in primary health care. 2. To assess the diagnostic accuracy of using portable overnight pulse oximeter for obstructive sleep apnea screening in primary health care.

Design: Prospective cross-sectional study.

Subjects: 60 consecutive adult patients suspected to have obstructive sleep apnea (OSA) in a General Outpatient Clinic affiliated to a regional hospital of Hong Kong.

Main Outcome measures: Overnight pulse oximetry derived oxygen desaturation index (ODI) and

polysomnography (PSG) derived apnea hypopnea index (AHI).

Results: 51 out of 60 patients (85%) were confirmed to have OSA by PSG study. 14.9 events/hr and 24.6 events/hr were detected by overnight pulse oximetry derived ODI and PSG derived AHI respectively. The ODI and AHI has a correlation coefficient of 0.7 ($P < 0.0001$). The mean and 1.96 SD of the difference between ODI and AHI is 9.7 events/hr and 30.4 events/hr respectively. Using case designation criteria of ≥ 5 events/hr for ODI, the sensitivity and specificity in diagnosis of OSA is 92% and 88% respectively.

Conclusion: In a selected adult primary care population who are at risk for OSA, overnight pulse oximetry shows good correlation with polysomnography and has good screening performance as a screening tool for the diagnosis of OSA.

Keywords: Obstructive sleep apnea, portable overnight pulse oximeter, primary health care

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摘要

目的: 1. 測試基層醫療使用便攜式通宵脈搏血氧儀篩選阻塞性睡眠窒息症的效用。2. 評估基層醫療便攜式通宵脈搏血氧儀診斷阻塞性睡眠窒息症的準確度。

設計: 前瞻性橫斷面研究。

對象: 連續60名到香港地區醫院附屬綜合門診求診, 並懷疑有阻塞性睡眠窒息的成年病人。

主要測量指標: 通宵脈搏血氧儀氧飽和度指數 (ODI) 和多導睡眠診斷儀 (PSG) 監測呼吸暫停或低通氣指數。

結果: 60名患者中, 51例 (85%) 由PSG證實患有阻塞性睡眠窒息症。通宵脈搏血氧儀氧飽和度指數 (ODI) 的平均值是14.9次/小時 (標準差是13.6次/小時), 而多導睡眠診斷儀呼吸暫停或低通氣指數 (AHI) 的平均值是24.6次/小時

(標準差是21.4次/小時)。ODI與AHI的相關性係數 $r = 0.7$ ($P < 0.0001$)。ODI和AHI之間的差異均值和1.96倍標準差分別為9.7次/小時和30.4次/小時。指定飽和度指數(ODI) ≥ 5 次/小時為篩選標準，其診斷阻塞性睡眠窒息的敏感性和特異性分別是92%和88%。

結論：用於基層醫療有阻塞性睡眠窒息風險的成年病人檢查時，便攜式通宵脈搏血氧儀與多導睡眠診斷儀有良好的相關性；作為阻塞性睡眠窒息的篩選工具，具有良好的篩選性。

關鍵詞：阻塞性睡眠窒息症，便攜式通宵脈搏血氧儀，基層醫療

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Introduction

Obstructive sleep apnea (OSA) is a condition characterized by disordered breathing during sleep. Prevalence of OSA is estimated to be between 4-8%.^{1,2} Cardiovascular³⁻⁸ and neuropsychological morbidities⁹ and increased risk of motor vehicle accidents^{10,11} have been demonstrated in patients with untreated obstructive sleep apnea. Overnight full-channel polysomnography (PSG) performed in a sleep laboratory remains the gold standard diagnostic test. However, PSG is time consuming, costly and requires expertise for interpretation.¹² According to Young's study, 82% of men and 93% of women have undiagnosed moderate to severe sleep apnea.¹³ Based on the estimated prevalence of sleep apnea, the cost of full PSG to diagnose all suspected cases would be prohibitive.¹²

A vast number of patients present to primary health care for subjective daytime sleepiness, frequent snoring at night or other symptoms suggestive of obstructive sleep apnea. A conservative estimate of the "at risk" population who might be expected to be referred for assessment is at least twice the prevalence (13%) of moderate sleep apnea.¹⁴ Due to limitation of clinical assessment and lack of diagnostic test, the usual practice for primary health care physicians is to refer patients to a respiratory physician or sleep centre for confirmation test. According to Flemons *et al*, the waiting time for sleep service in five countries range from 2 to 60 months.¹⁴ There is a need for a simpler

and cheaper screening test that can be implemented in primary care.

Methodology

Objective

1. To test the usefulness of using portable overnight pulse oximeter for obstructive sleep apnea screening in primary health care.
2. To assess the diagnostic accuracy of using portable overnight pulse oximeter for obstructive sleep apnea screening in primary health care.

Study population

60 consecutive patients aged from 18 to 75 years old attending a general outpatient clinic, with one or more of the following criteria were recruited: body mass index (BMI) $> 25 \text{ kg/m}^2$; neck circumference > 16 inches for women, > 17 inches for men; poorly controlled hypertension (note 1); poorly controlled type 2 diabetes mellitus (note 2); congestive heart failure; cardiac arrhythmia; erectile dysfunction of undetermined aetiology; subjective daytime sleepiness or excessive snoring at sleep. Exclusion criteria include: haemoglobin $< 10 \text{ g/l}$; poor tissue perfusion (such as Raynaud's disease), nail vanish, fungal infection of nails; chronic obstructive pulmonary disease (COPD); or difficult to co-operate (such as dementia).

Study design

In this prospective study, overnight pulse oximetry was arranged for patients attending a general outpatient clinic with suspected OSA after a focused assessment (including history, physical examination and use of the Epworth Sleepiness Scale). All study patients were then referred to a Sleep Study Centre for at-home overnight PSG.

This study was approved by the Clinical Research Ethics Committee, Kowloon West Cluster of the Hospital Authority.

Note 1: Poorly controlled hypertension referred to blood pressure which was persistently higher than 140/90 mmHg despite having been on optimal treatment of 3 or more antihypertensive agents.

Note 2: Poorly controlled type 2 diabetes mellitus referred to 2 consecutive glycated haemoglobin (HbA1c) measurements $> 8\%$ despite on optimal treatment of oral hypoglycemic agents.

Measurement

Polysomnography

PSG was arranged by the sleep centre about 2 to 4 weeks after the overnight pulse oximetry, and was performed in patients' own home.

All PSG data were recorded by a computerized polysomnographic system (Alice 5, Philips). These included standardized montage: two channel electroencephalograms (EEG), electro-oculograms (EOG), submental and leg electromyograms (EMG), electrocardiography (ECG), airflow measurement by thermistor, thoraco-abdominal movements measured by inductive plethysmography, and SaO₂ with pulse oximeter.

Portable overnight pulse oximeter

The Konica Minolta Pulsox-300i portable overnight pulse oximeter was used for this study. Pulse rate and SaO₂ value were continuously measured overnight and stored in the oximeter. Recorded data were then transferred to a computer for processing and analysis. The SaO₂ analysis, pulse rate analysis, oxygen desaturation index (ODI: number of oxygen desaturation events per hour of measurement time) and pulse disorder index (pulse rises events per hour of measurement time) were generated in the report.

Event definition

For both PSG and overnight pulse oximetry, apneas, hypopneas, apnea-hypopnea index, oxygen desaturation and oxygen desaturation index were defined according to standard criteria. The PSG apnea-hypopnea index (AHI) was considered as the diagnostic definition for OSA, where OSA severity is categorized as mild (AHI = 5 to 14 events/hr), moderate (AHI = 15 to 30 events/hr), and severe (AHI > 30 events/hr).^{15,16}

Oxygen desaturation was defined as a decrease of $\geq 4\%$ from baseline SaO₂.¹⁵ Oxygen desaturation index (ODI₄) was used as screening diagnostic criteria in this study. Subjects who had sleep disordered breath events associated with 5 or more oxygen desaturation events of the peripheral artery of 4% or greater per hour (ODI₄ ≥ 5 /hr) was defined as screening positive.

Statistical analysis

Continuous variables were described as mean and standard deviation (SD). The correlation and agreement between ODI and PSG derived AHI in the diagnosis of obstructive sleep apnea were assessed using Pearson's product-moment correlation coefficient and Bland-Altman plots.¹⁷

Overnight pulse oximetry was used as the test and polysomnography as the gold standard for the correct classification of OSA and non-OSA patients. The number of true-positive (TP), false-positive (FP), true-negative (TN) and false-negative (FN) were then determined. Sensitivity (TP/[TP+FN]), specificity (TN/[TN+FP]) and positive (TP/[TP+FP]) and negative predictive values (TN/[TN+FN]) were calculated. A receiver operating characteristic (ROC) curve was constructed for reviewing the comparative course of sensitivity and 1-specificity at different thresholds.

Quality assurance

All computer generated overnight pulse oximetry and polysomnography would be verified by respiratory specialist to ensure validity and quality.

PSG was performed by trained technician from Celki Medical Company, which provided sleep study equipment and support to sleep study centres under the Hospital Authority of Hong Kong.

Results

Patient characteristics

60 consecutive patients (21 females and 39 males) were successfully recruited from November 2009 to June 2010. **Table 1** summarizes the patients' characteristics, anthropomorphic measurements, overnight pulse oximetry and PSG results.

Correlation and agreement between overnight pulse oximetry and polysomnography

OSA was diagnosed by PSG in 51 patients, with a mean AHI of 24.6 events/hr (SD = 21.4 events/hr). The number (%) of mild, moderate and severe OSA were 14 (28%), 20 (39%) and 17 (33%) respectively. The mean overnight pulse oximetry derived ODI₄ was 14.9 events/hr (SD = 13.6 events/hr).

Table 1: Summary of Patient Characteristics

	Male		Female		Total	
	No	%	No	%	No	%
Patients	39	65%	21	35%	60	100%
OSA	35 / 39	90%	16 / 21	76%	51 / 60	85%
mild					14	28%
moderate					20	39%
severe					17	33%
	Mean	SD	Mean	SD	Mean	SD
Age (yrs)	52	12	51	9.7	52	11
BMI (kg/m²)	29.7	4	29.5	5.3	29.5	4.4
Neck circumference (cm)	40	2.4	36	3.1	n/a	n/a
Systolic BP (mmHg)	n/a	n/a	n/a	n/a	130	14
Diastolic BP (mmHg)	n/a	n/a	n/a	n/a	79	9
ESS Score	9.1	4.6	8.2	5.1	8.8	4.8
ODI₄ (events/hr)	16.2	15.6	12.5	8.8	14.9	13.6
AHI (events/hr)	27.6	22.7	19	17.9	24.6	21.4

OSA: obstructive sleep apnea; BMI: body mass index; BP: blood pressure; ESS: Epworth Sleepiness Scale; ODI: oxygen desaturation index; AHI: apnea-hypopnea index; SD: standard deviation.

Table 2: Diagnostic (Screening) performance of overnight pulse oximeter at varies designation

ODI Definition	Sensitivity, %	Specificity, %	+ ve Pred value, %	- ve Pred value, %
ODI₄ ≥ 5	92	88	98	67
ODI₄ ≥ 10	66	88	97	32
ODI₄ ≥ 15	43	100	100	24
ODI₃ ≥ 10	78	88	98	42
ODI₃ ≥ 15	64	88	97	31
ODI₃ ≥ 20	45	100	100	24
ODI₂ ≥ 15	88	88	98	57
ODI₂ ≥ 20	72	88	97	36
ODI₂ ≥ 25	56	88	97	27

ODI₄: oxygen desaturation of a decrease of ≥ 4% from baseline SaO₂ per hour of sleep.

ODI₃: oxygen desaturation of a decrease of ≥ 3% from baseline SaO₂ per hour of sleep.

ODI₂: oxygen desaturation of a decrease of ≥ 2% from baseline SaO₂ per hour of sleep.

Both scatter plot (**Figure 1**) and dot and line diagram demonstrated (**Figure 2**) a linear relationship between ODI₄ and AHI. Pearson's correlation coefficient for ODI₄ and PSG derived AHI was 0.7 ($P < 0.0001$). The mean and 1.96 SD of the difference between ODI₄ and AHI was 9.7 events/hr and 30.4 events/hr. The Bland & Altman Plot is illustrated in **Figure 3**. Most dots lied between the ± 1.96 SD of the mean difference line.

Diagnostic (Screening) performance of overnight pulse oximetry

The diagnostic performance of overnight pulse oximetry at various designation were tabulated in **Table 2**. A receiver operating characteristic (ROC)

curve of ODI₄ in the diagnosis of OSA was shown in **Figure 4**. Based on ROC curve of ODI₄, the best cut off criterion is 4.42 events/hr, with a sensitivity and specificity of 96.1% and 88.9% respectively. Using case designation criteria of ≥ 5 events/hr for ODI₄, the sensitivity and specificity for OSA diagnosis are 92% and 88% respectively.

Discussion

To be an effective screening tool for OSA, overnight pulse oximetry must be able to screen out patients with all levels of disease severity and be able to rule out patients without disease in a manner that is less expensive than current diagnostic procedures. We

Figure 1: The scatter plot of ODI₄ against AHI

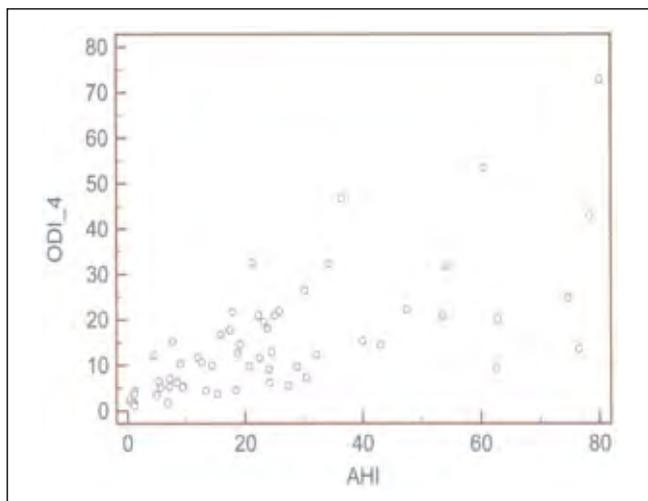
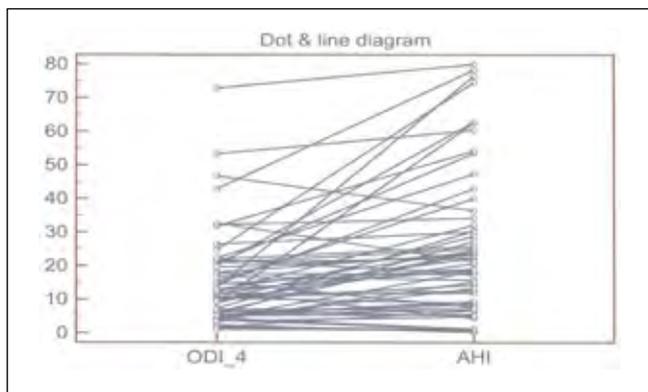


Figure 2: The dot and line diagram of ODI₄ and AHI



investigated the usefulness of overnight pulse oximetry as a screening tool for OSA by comparing diagnostic performance directly with PSG. According to review paper by Nikolaus *et al*, there was broad range of sensitivity and specificity value for pulse oximetry as a screening tool for sleep-disordered breathing, the value for sensitivity ranged from 31 to 98% while specificity ranged from 41 to 100%.¹⁵

In our study, ODI₄ and AHI had a good correlation. Nevertheless, ODI is globally less than AHI, the reasons for which are unclear. Decreased sleep efficiency may decrease the ODI since it is derived from the total probe-on time and not total sleep time.¹⁸ Furthermore, technical limitations may impair the detection of hypopneic changes. The typical cyclical drop in SaO₂ in patients with OSA lags 45 to 60 seconds behind a respiratory event and should be accurately detected at this measurement speed.¹⁹

For screening purpose, one chooses a high sensitivity in order not to falsely exclude from further

Figure 3: Bland & Altman Plot illustrating the agreement between ODI₄ and AHI

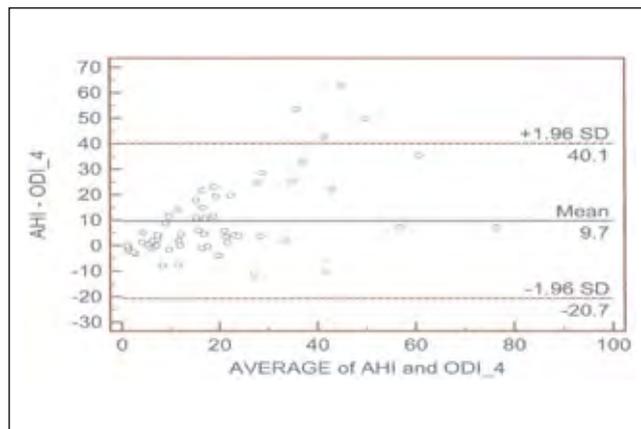
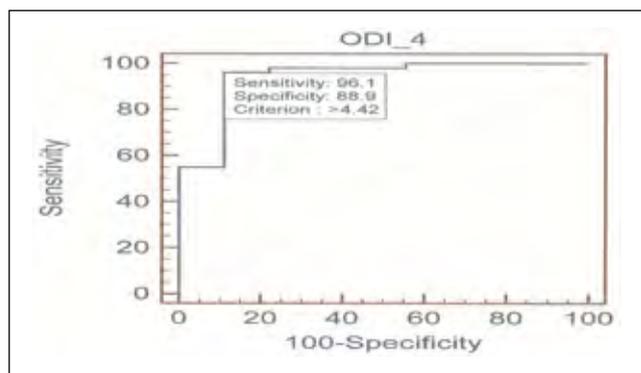


Figure 4: ROC curve of ODI₄ designation in diagnosis of OSA



investigation patients having the disease in question. For treatment decisions, one chooses a higher specificity in order not to inflict investigation or treatment on patients without the disease. There is no uniform definition for a normal or abnormal oxygen desaturation index (ODI).¹⁵ In Stradling JR²⁰, Kripke DF *et al*²¹ studies, the threshold for an abnormal ODI is either ≥ 5 desaturation per hour. Using this designation in our study, the sensitivity, specificity, positive predictive value and negative predictive value are 92%, 88%, 98% and 67% respectively. The results support the implication of overnight pulse oximetry as the screening tool for OSA for selected population in the primary health care.

Epworth Sleepiness Scale (ESS) is a validated method of assessing the likelihood of falling asleep in a variety of situations.²² Although the correlation between ESS and OSA severity is relatively weak, ESS is the best available tool to guide the clinician as to the patients' perception of his/her sleepiness.^{23,24} Continuous positive airway pressure (CPAP) functions

Key messages

1. OSA is common with an estimated prevalence between 4 – 8% of the population.
2. Cardiovascular and neuropsychological morbidities, and increased risk of motor vehicle accidents have been demonstrated in untreated OSA.
3. Overnight full-channel PSG performed in a sleep laboratory remains the gold standard diagnostic test.
4. Using case designation criteria of ≥ 5 events/hr for ODI₄, the sensitivity and specificity of overnight pulse oximetry for the diagnosis of OSA is 92% and 88% respectively.

as a pneumatic splint to maintain upper airway patency through all phases of sleep breathing. CPAP has been established as the treatment of OSA with the firmest evidence base.²⁵ American Academy of Sleep Medicine (AASM) recommended CPAP as the standard treatment of moderate to severe OSA and self reported sleepiness, while it is the optional treatment for mild OSA, improving quality of life or as an adjunctive therapy to lower blood pressure in hypertensive patients with OSA.¹⁶

Oximetry alone is often used as the first screening tool for obstructive sleep apnea due to the universal availability of cheap recording pulse oximeters.²⁶ In Japan, overnight pulse oximetry had been used for OSA screening for workers in transport, construction, retail and security companies. The study concluded that the simplicity of the sleep apnea syndrome screening by overnight pulse oximetry makes it easy to use for screening of workers, and this method was highly effective in detecting individuals with severe sleep apnea syndrome for whom continuous positive airway pressure (CPAP) therapy was indicated.²⁷

Based on current available evidences or recommendations and results from this study, it is suggested that CPAP might be initiated to selected patients if he or she has OSA associated symptoms and overnight pulse oximetry confirmed OSA of at least moderate severity. This clinical pathway may reduce the harm associated with OSA when diagnosis is delayed due to prolonged waiting time. Further studies

should be conducted to assess the feasibility, safety and outcome of initiating CPAP for patients in the primary health care setting.

Conclusion

In a selected adult primary care population who are at risk for OSA, overnight pulse oximetry shows good correlation with PSG and has good performance as a screening tool for the diagnosis of OSA.

Acknowledgment

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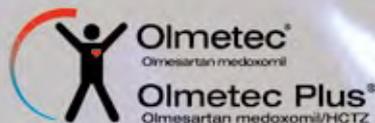
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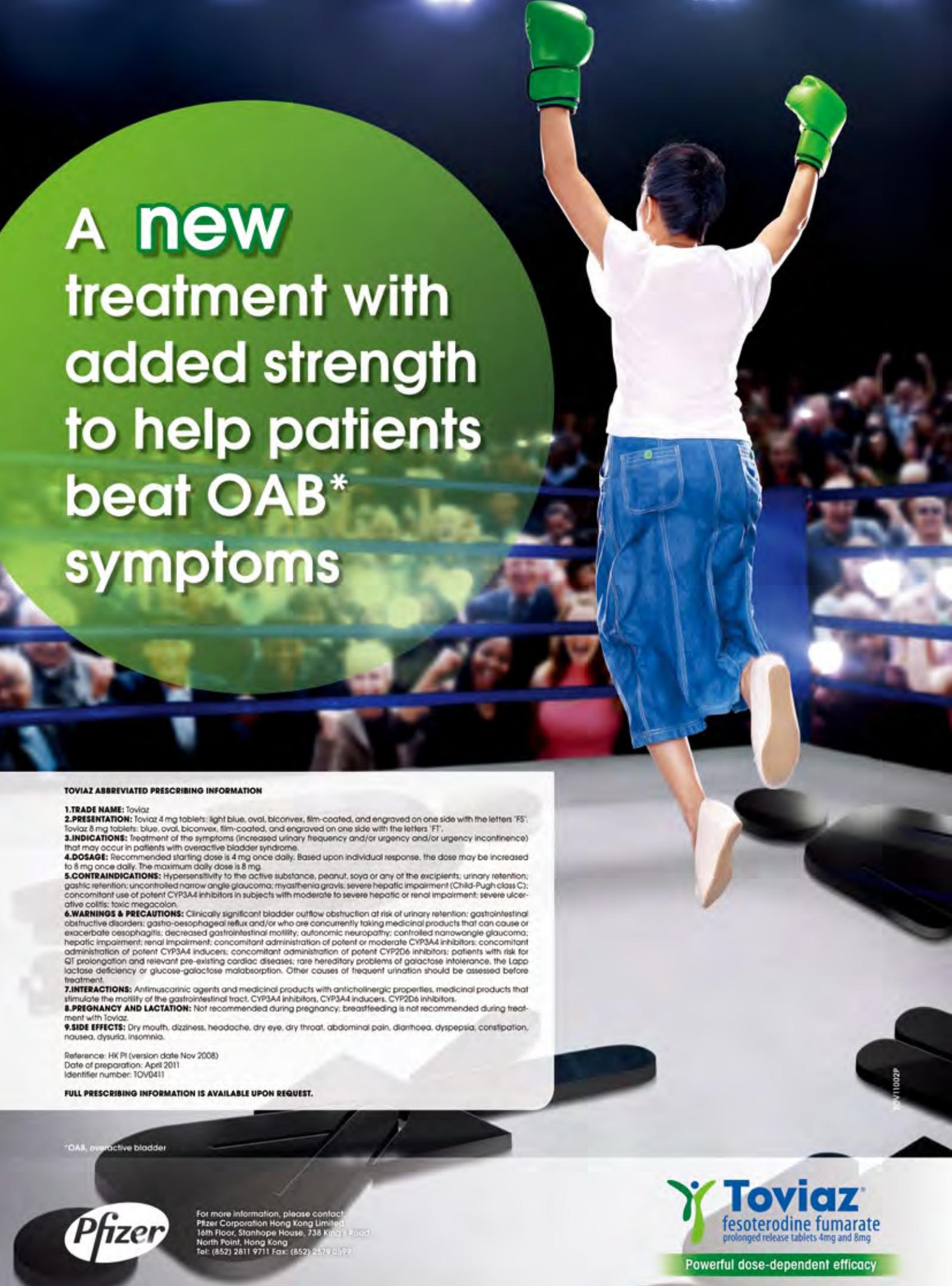
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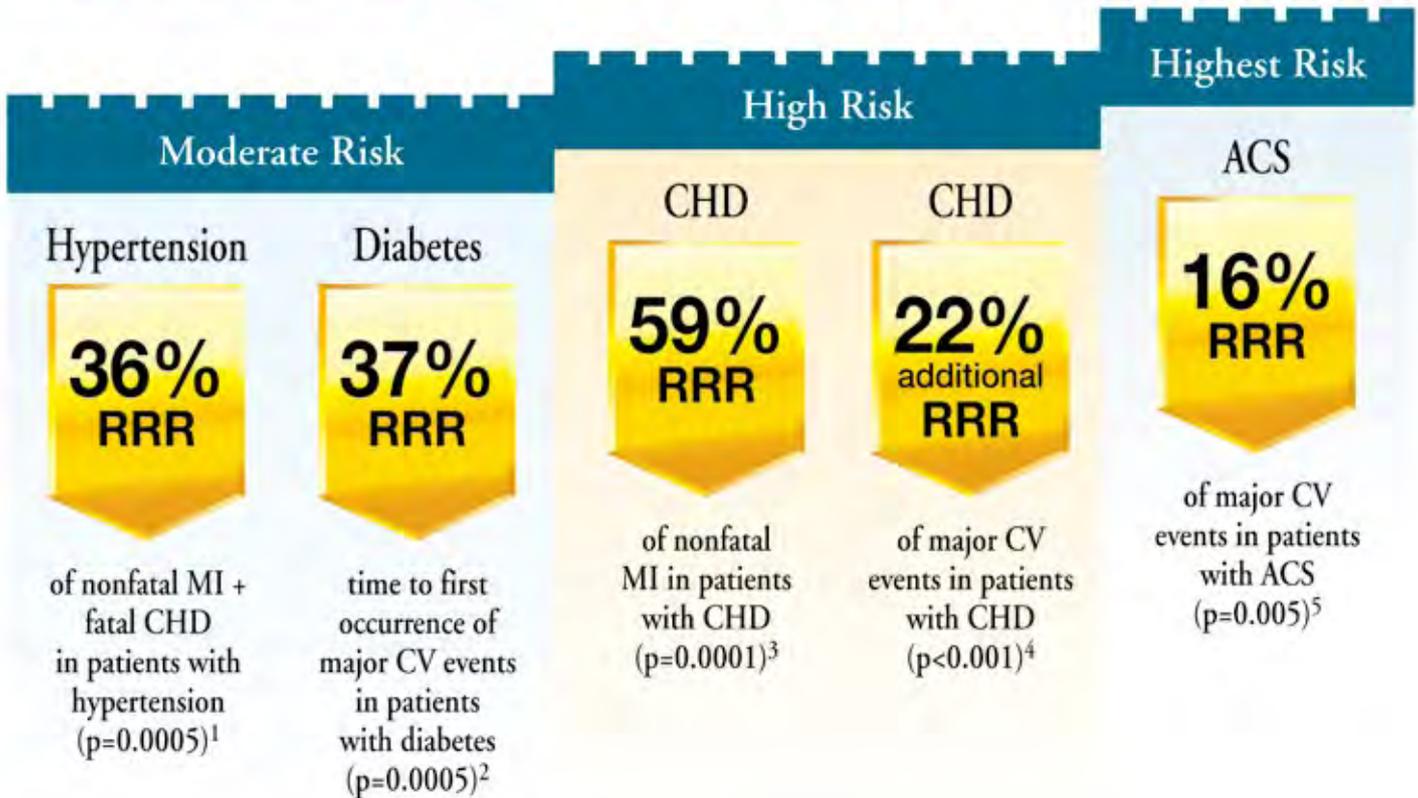
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LYR1012P

A man presented with color change of his big toe nail

King-man Ho 何景文

Readers are invited to participate in the Clinical Quiz. A prize draw, sponsored by Pfizer Corporation Hong Kong Limited, will be undertaken among the successful entries. For entry into the draw, simply answer the question, fill in the reply slip and return it to the College by 18 Dec 2011. Each reader is allowed to submit one entry only. The name of the winner and the answer will be published in the March 2012 issue.

Clinical history:

This gentleman presented with recent colour change of his big toe nail.
What is the clinical diagnosis?



What is the clinical diagnosis?

- | | |
|------------------------|------------------|
| A. Subungual haematoma | C. Melanoma |
| B. Paronychia | D. Onychomycosis |

The Hong Kong Practitioner Clinical Quiz – December / 2011

Answer :

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The slide and the question were prepared by:

Dr King-man Ho, FRCP (Glasg, Edin), MRCP (UK), FHKCP, FHKAM (Medicine)

Consultant Dermatologist-in-Charge,

Social Hygiene Service, PHSB, CHP, DH.

Answer to last month's Clinical Quiz**Question:**

This gentleman presented with long standing itchy rash over his shins and arms.

Answer:

C. Lichenoid amyloidosis

The clinical photo showed multiple hyperpigmented papules cluster over the extensor aspect of the arm.

Lichen simplex chronicus is also known as neurodermatitis. It is a manifestation of chronic lichenified eczema. The typical lesion is a plaque of thicken skin with accentuated creases i.e. lichenification on the surface. It is induced by repeated rubbing or scratching of that part of skin. It may overlap/co-exist with other itchy skin conditions such as lichen planus, etc. Dyspigmentation is not uncommonly found in these lesions. The classic sites of predilection are the nape of neck, scalp, dorsum of ankle and the anogenital regions.

The typical lichen planus lesions are itchy violaceous polygonal papules with predilection to the volar aspect of the wrists. As these lesions are very itchy, repeated scratching by those affected are very common. It is postulated that “secondary” lichen simplex chronicus will be induced as a result

The winner of the June 2011 Clinical Quiz is **Dr Au Chui Kwan**

of repeated scratching. When these two conditions co-exist, it will result to the clinical morphology of violaceous plaque which is described as hypertrophic lichen planus. In contrast to the classic lichen planus, the site of predilection of hypertrophic lichen planus is the shin.

Lichenoid amyloidosis is a subgroup of primary cutaneous amyloidosis. The pathogenesis is still not yet known though repeated scratching may be one of the important contributory factors for its causation. Patient may present with multiple itchy hyperpigmented papules cluster over the anterior aspect of the shins. The upper limbs and back may also be involved. The morphology is commonly described as the “crust of lychee” by both the patient and physician. Sometimes smaller and flatter lesions may co-exist. These lesions are known as macular amyloidosis which by itself have predilection to the upper back. Both types are not associated with systemic amyloidosis and therefore further investigations are not required to look for such involvement. Nodular amyloidosis of skin is the other type of cutaneous amyloidosis but can be associated with monoclonal gammopathy and systemic disease.

Lichen myxedematosus is a skin condition characterized by deposition of mucin in the skin presented as multiple discrete often disseminated papules over the body. The nape, forehead, arms, thighs and lower trunk are commonly involved. Individual lesion is tiny, usually not more than a few millimeter and skin coloured. Itchiness may or not be present. It may be associated with monoclonal gammopathy.

Further investigation is not required in an otherwise typical case of lichenoid amyloidosis as shown. General advice on avoidance of skin irritants including soap, prolonged hot water bathing, is recommended. Emollients should be applied liberally, at least twice daily and immediately after bathing, even if there is no visible acute inflammatory skin lesions. For those symptomatic cases, moderate to potent topical steroid may be used. Because of the hyperkeratosis, combination formulation containing keratolytic e.g. betamethasone and 3% salicylic acid ointment is commonly prescribed. The patient should strongly be advised not to scratch in order not to perpetuate the condition.

Snapping elbow syndrome: a report of two cases

Keith KW Chan 陳國維, Ricky WK Wu 胡永強

Summary

Snapping elbow syndrome is an uncommon clinical entity with snapping occurring either at the medial or the lateral side of the elbow during certain motions of the elbow. Patients sometimes present with pain or local tenderness instead of snapping which may lead to the wrong diagnosis of the more common tennis or golfer's elbow syndrome. While making the clinical diagnosis of snapping elbow is obvious once the clinician is aware of the condition, to locate the cause of the snapping and arrive at an anatomical diagnosis can be difficult although it is crucial to successful treatment. In this article, we report two cases of snapping elbow syndrome, one at the lateral side and one at the medial side of the elbow, and share our experience with the use of musculoskeletal ultrasonography to arrive at an anatomical diagnosis of the condition.

Keywords : Snapping elbow, medial, snapping elbow, lateral, musculoskeletal ultrasonography, ulnar nerve subluxation, medial head of triceps subluxation, synovial plica, real-time imaging, dynamic imaging

摘要

彈響手肘綜合症是一種不常見的病症，當手肘進行動作時，彈響會出現於手肘的內側或外側。但有些病人並無此典型病徵，只有痛楚或局部觸痛。因而易被誤診為較常見的網球手肘或哥爾夫球手肘綜合症。然而若能對這病症的存在保持警覺，診斷並不困難，但在判斷其成因和在解剖學上病變的位置時，則並不容易。而這些資料對於成功治療是很重要的。本文報告了兩個彈響手肘案例。一個發生在手肘外側及另一個在內側，並詳述我們在使用肌肉骨骼超聲波檢查作解剖學上診斷的經驗。

主要詞彙：彈響手肘，內側，彈響手肘，外側，肌肉骨骼超聲波檢查，尺神經半脫位，肱三頭肌內側頭半脫位，滑膜皺襞，即時成像，動態成像

HK Pract 2011;33:159-168

Introduction

Snapping elbow is a dynamic phenomenon where a snapping is visible, palpable or audible during elbow joint movement. The condition is uncommon and generally poorly understood by clinicians. It may be associated with pain¹ which makes it easily misdiagnosed as other commonly encountered elbow conditions including tennis elbow or golfer's elbow syndrome. Once the snapping is recognized, further structural pathology of the snapping structures should be sought because precise anatomical diagnoses determine potential for successful treatment. For example, studies showed that ulnar nerve transposition surgery would fail with persistence of symptoms if the associated snapping medial head of triceps was unrecognized and not properly treated at the same time.^{2,3}

To make an anatomical diagnosis of snapping elbow, ultrasonography and magnetic resonance imaging (MRI) are usually advocated as investigation tools before arthroscopy. The purpose of this article is to report two cases of snapping elbow syndrome with a description of their diagnostic process and to review such clinical entity with relevant literature.

Materials and methods

We studied two male patients with the complaints of snapping elbows (one at the lateral side and one at the medial side). Both patients were assessed by the authors and the snapping was confirmed clinically by history taking and physical examination.

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Ricky WK Wu, PGDipMSM (Otago), FHKAM(FM), FRACGP, FHKCFP
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Case Report

Musculoskeletal ultrasonographic studies were then performed by the authors, both of whom received prior relevant ultrasonography training. A phased array linear 12L-RS transducer (LOGIQ-e, GE Ultrasound, USA) was used.

Case 1

Patient LWK, a 52-year-old male right-handed manual worker, presented to the author's clinic with a painful lateral right elbow associated with snapping at his lateral right elbow region during elbow motions. The pain was localized without radiation. He reported that his problems started insidiously about 6 months ago after some weight lifting jobs. There was no history of overt sprain or contusion over his right elbow at that time or in the past. The pain was gradually increasing in severity and sometimes prevented him from prolonged weight lifting. Occasionally, sudden pain with snapping during elbow motions would cause his arm to give way. He denied associated numbness, tingling, burning or paresthesia over his right elbow and arm. He did not have any other complaints over his left elbow.

Physical examination of his right elbow revealed no cubitus deformity and no erythema or swelling around the elbow. Palpation elicited tenderness at the radiocapitellar joint line, over the common wrist extensor tendon near its insertion. The right elbow's range of motion (ROM) was full in all directions. By actively or passively flexing and extending the pronated

elbow back and forth, a visible snap was noticed over the lateral elbow at an angle of around 80°-90° (**Video clip 1**).⁴ No associated clicking or locking could be demonstrated. Further clinical examination showed no ligamentous laxity or joint instability over the lateral elbow.

The clinical diagnosis was snapping lateral elbow. The offending structure could be a hypertrophic synovial plica, but a torn annular ligament could not be ruled out. The patient then underwent a musculoskeletal ultrasonography of his right elbow to delineate the pathology (**Figure 1**).

Sonographic findings of patient LWK demonstrated that the snapping of his right elbow occurred at the lateral elbow between the capitellum and the radial head in long axis view (**Figure 2**). The snapping structure involved was a hypoechoic structure (**Figure 3**) which extruded gradually from the radiocapitellar joint when the elbow was flexed, pushing the extensor carpi ulnaris (ECU) to flip with an associated snapping (**Figure 4, Video clip 2**).⁵ This most likely represented a posterolateral hypertrophic synovial plica at the radiocapitellar joint.

Case 2

Patient NLF, a 23-year-old male right handed clerk, presented with snapping over his medial left elbow during motion. The patient had a sprain injury to his

Figure 1: Positioning for sonographic assessment of lateral elbow.



A. The patient was seated with elbow resting on the table and the forearm half pronated.



B. The patient's forearm was passively flexed and extended by the examiner during dynamic examination to reproduce the snapping.

left elbow 2 years ago when he accidentally gave way during an overhead weight lifting exercise. Immediately after the injury, he experienced pain and swelling at his posteromedial left elbow. With resolution of acute inflammation, he started to notice snapping at the medial side of his elbow during elbow flexion and extension. The snapping was sometimes associated with mild tingling sensation at the ulnar side of his forearm and hand.

The physical examination of his left elbow revealed no cubitus deformity and no edema or erythema around the elbow. Palpation did not elicit tenderness but revealed snapping on the medial elbow during flexion and extension to around 80°. The snapping was accentuated on resisted elbow flexion.



Figure 2: Longitudinal sonograph at radiocapitellar joint.



Figure 3: Longitudinal sonograph at radiocapitellar joint. Hypertrophic synovial plica is extruded abutting the overlying Extensor Carpi Ulnaris (ECU) tendon.



Figure 4: Longitudinal sonograph at radiocapitellar joint. Snapping is associated with reduction of protruded synovial plica and the overlying ECU tendon.

Figure 5: Positioning for sonographic assessment of medial elbow.



A. The patient was lying on the side of the lesion, keeping the shoulder flexed and externally rotated while the elbow hanged out of the couch slightly flexed.



B. The patient's arm was moved from extension to flexion and vice versa on dynamic examination. The position of the ulnar nerve and the medial head of triceps relative to the medial epicondyle were assessed throughout elbow motion.

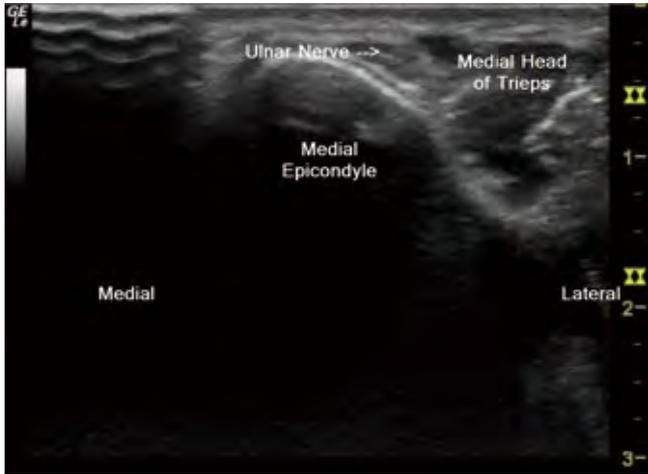


Figure 6: Transverse sonograph showing the ulnar nerve in its normal position posterior to the medial epicondyle when the elbow is in extension.

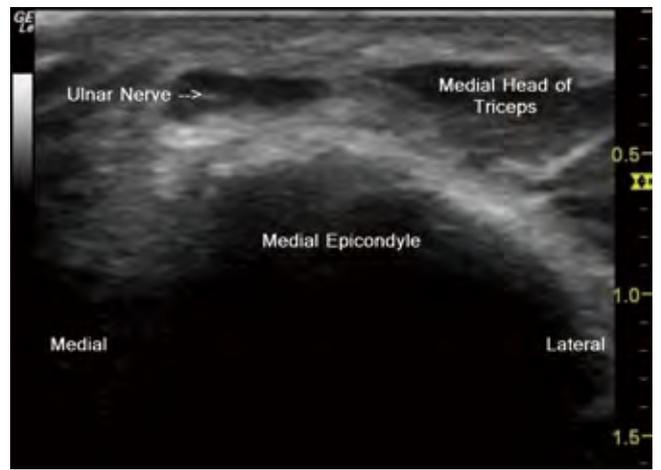
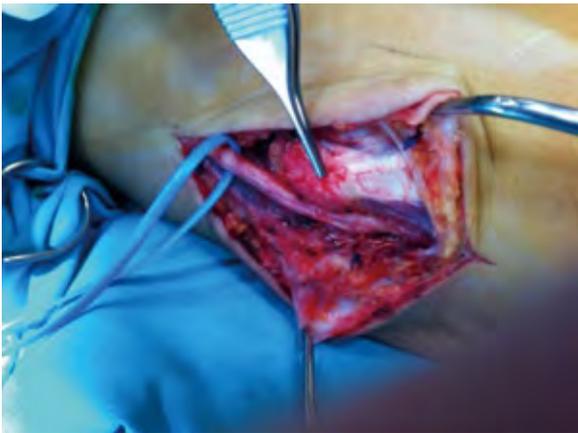
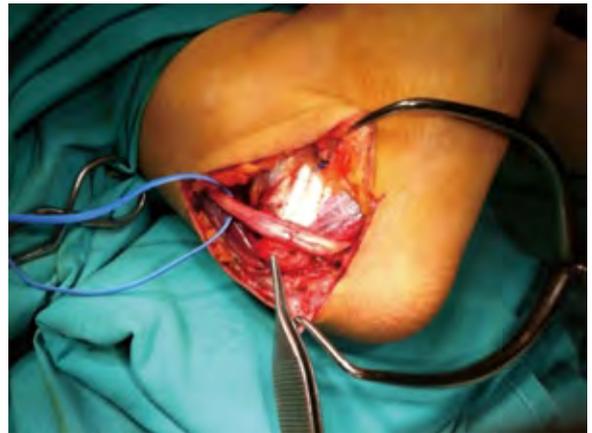


Figure 7: Transverse sonograph showing the ulnar nerve dislocated over the medial epicondyle superficial to the common flexor tendon insertion, carrying with it part of the medial head of the triceps.

Figure 8: Intra-operative findings of medial snapping elbow of patient NLF.



A. With elbow in extension. The forceps is pointing at the medial epicondyle and the nerve is in the normal position posterior to it.



B. With elbow in flexion. The ulnar nerve is definitely dislocated in front of the medial epicondyle.



C. Post-operative picture showing the nerve placed underneath the repaired common flexor origin and the cubital tunnel subsequently spacious. The forceps behind the elbow is pointing towards the medial head of the triceps which is re-routed to the lateral aspect to prevent associated subluxation.

Active and passive ROM of the left elbow was full in all directions. No associated clicking or locking could be demonstrated. Further clinical examination showed positive ulnar Tinel’s sign at the cubital tunnel. When the elbow was passively flexed and extended, the ulnar nerve could be felt dislocating from its groove (cubital tunnel) at the posterior aspect of the humeral epicondyle during elbow flexion. Otherwise, no ligamentous laxity or joint instability could be found.

The clinical diagnosis was snapping medial elbow caused by the ulnar nerve subluxating out of its cubital tunnel during flexion. A musculoskeletal ultrasonography of his left elbow was then arranged to confirm the pathology of the snapping structure (Figure 5).

Sonographic examination demonstrated that the ulnar nerve was in the cubital tunnel when the elbow was fully extended (Figure 6). On elbow flexion, the ulnar nerve subluxed over the medial epicondyle carrying with it part of the medial head of the triceps (Figure 7). When the elbow returned from flexion to extension, the ulnar nerve reduced back to the cubital

tunnel over the tip of medial epicondyle. Such reduction was associated with a visible snapping on the screen (Video clip 3).⁶ The sonographic diagnosis was ulnar nerve dislocation with subluxation of the medial head of triceps. The diagnosis was later confirmed by findings at surgery (Figure 8, Video clip 4).⁷

Discussion

In 1970s, the terms “snapping elbow” has been regarded synonymous to slipping of the ulnar nerve out of the cubital tunnel during elbow flexion.⁸ Reports in recent several decades identified some other structures or conditions that can contribute to snapping over the elbow. Extra-articular causes include ulnar nerve dislocation with or without associated subluxation of the medial head of the triceps^{9,10,11}, and snapping brachialis muscle.¹² Intra-articular causes include intra-articular loose bodies¹³, hypertrophic synovial plica impingement at radio-humeral joint¹⁴⁻¹⁶ and torn annular ligament.¹⁵⁻¹⁶ Other possible causes include tumors, previous surgery or trauma, articular degeneration and inflammatory processes.

Table 1: Ulnar nerve dislocation

<ul style="list-style-type: none"> ■ The ulnar nerve reaches the elbow between the medial intermuscular septum and the medial head of the triceps. It then crosses the elbow joint and enters the cubital tunnel on the medial side below the medial epicondyle, embedded in the bony ulnar groove, roofed by cubital tunnel retinaculum. The nerve then passes to the volar side between the 2 heads of the flexor carpi ulnaris and run beneath that muscle to the wrist. ■ Ulnar nerve dislocation is defined as abnormal movement of the ulnar nerve out of the cubital tunnel over the medial humeral epicondyle during elbow flexion.⁸ ■ The friction caused by the snapping will give rise to nerve irritation. And the abnormal nerve position during subluxation will subject it to further injury.
<p>Prevalence</p> <ul style="list-style-type: none"> ■ Reported to be between 16% and 47% among healthy individuals.^{8,17} ■ The condition is bilateral in almost 75% of affected individuals.
<p>Causes & association</p> <ul style="list-style-type: none"> ■ Congenital or acquired absent or deficient cubital tunnel retinaculum¹⁸ (A fibrous band between olecranon process and the medial epicondyle which forms the roof of the cubital tunnel) ■ Shallow cubital tunnel groove¹⁰
<p>Clinical presentations</p> <ul style="list-style-type: none"> ■ It has a spectrum of clinical presentations with or without the following three problems: <ul style="list-style-type: none"> ● Snapping or catching at the medial side of the elbow ● Ulnar neuropathy ● Pain over the medial side of the elbow ■ Clinically, it is difficult to distinguish it from snapping triceps syndrome. ■ Typical ulnar nerve dislocation gives only one snap on elbow flexion at 70°-90° over the medial elbow²⁰ ■ Snapping can be accentuated by eccentric elbow flexion or extension.

Table 2: Subluxation of the medial head of the triceps

<ul style="list-style-type: none"> ■ Triceps brachii muscle consists of 3 heads: the lateral, long and medial heads. The 3 heads join together and insert as a single tendon distally onto the olecranon process. The muscle at the level of humeral epicondyle is thin and wide where it broadens and compresses over the epicondyle during elbow flexion, rendering it easy to dislocate over that bony prominence.¹⁹ ■ During elbow flexion, the medial head subluxes over the medial humeral epicondyle during elbow flexion.²⁰ It can occur in combination with ulnar nerve dislocation.
<p>Prevalence</p> <ul style="list-style-type: none"> ■ It is unknown, but not uncommon.¹¹ ■ It is considered under-diagnosed because many cases are asymptomatic and unrecognized by patients and clinicians.²⁰ ■ The condition is more common in men, athletes, manual workers and those with post-traumatic cubitus varus deformity.²¹
<p>Causes & Associations</p> <ul style="list-style-type: none"> ■ Osseous abnormality <ul style="list-style-type: none"> ● Cubitus varus deformity²² <ul style="list-style-type: none"> – Can be developmental or post-traumatic e.g. supracondylar fracture of humerus – Alters the triceps' line of pulls and facilitates both medial head and ulnar nerve dislocation. ● Medial epicondyle hypoplasia¹⁰ <ul style="list-style-type: none"> – Makes both the medial head of triceps and the ulnar nerve position less securely behind the medial epicondyle, predisposing to subluxation. ■ Abnormal triceps configuration <ul style="list-style-type: none"> ● Different kinds of abnormal configurations are observed in patients with snapping medial head of triceps: <ul style="list-style-type: none"> – Prominent / hypertrophied medial head²³ – Accessory triceps tendon²⁴ – Supernumerary bands of medial head²⁰ – Abnormal extension of musculotendinous portion of triceps in the ulnar groove²⁵ – Thickened fascial edge of medial head of triceps²⁰ ● These abnormal configurations are postulated to facilitate or exaggerate anteromedial displacement of the ulnar nerve by its very position at the cubital tunnel. ■ Altered firing mechanism of triceps²⁶ <ul style="list-style-type: none"> ● It is postulated though not yet proven that an altered triceps firing mechanism resulting from its abnormal nervous innervations could predispose to snapping. ■ Hereditary <ul style="list-style-type: none"> ● Snapping triceps with ulnar nerve dislocation has been described in patients with the phenotype of Waardenburg syndrome²⁷ which runs in families.
<p>Clinical presentations</p> <ul style="list-style-type: none"> ■ It has a spectrum of clinical presentations with or without the following three problems: <ul style="list-style-type: none"> ● Snapping over the medial side of the elbow ● Ulnar neuropathy ● Pain over the medial side of the elbow ■ Clinically, it is difficult to distinguish it from isolated ulnar nerve subluxation as they share similar clinical symptoms. Symptoms usually occur in adolescence or early adulthood²⁰ and can be exacerbated by activities which require eccentric loading of the triceps during resisted elbow flexion beyond 90° and resisted extension^{14,28}. <ul style="list-style-type: none"> ● Overhead pitching activities ● Push up ● Weight lifting ● Curling ● Bench pressing ■ Typical snapping triceps give two snaps on elbow flexion²⁰ <ul style="list-style-type: none"> ● 1st snap at 70°-90°: ulnar nerve dislocation. ● 2nd snap at 115°: dislocation of medial head of triceps. ● Snapping can be accentuated by eccentric elbow flexion or extension.

Table 3: Snapping Brachialis Muscle

<ul style="list-style-type: none"> ■ Brachialis muscle is a flattened fusiform muscle that lies posterior to the biceps brachii. It originates from the anterior surface of the distal humerus and inserts on the coronoid process and the ulna tuberosity. ■ The condition is defined as translation of the most medial edge of the brachialis muscle over the medial trochlea of the distal humerus on elbow extension.
<p>Prevalence</p> <ul style="list-style-type: none"> ■ Uncommon. Only 2 case reports documented snapping brachialis muscle over the anteromedial elbow.^{12,29}
<p>Causes & Associations</p> <ul style="list-style-type: none"> ■ Previous trauma with elbow hyperextension ■ Other possible causes include muscle rupture and infection.
<p>Clinical presentations</p> <ul style="list-style-type: none"> ■ It has a spectrum of clinical presentations with or without the following 3 problems: ■ Snapping over the anteromedial elbow ■ Median neuropathy ■ Pain over the anteromedial side of the elbow ■ The most medial edge of the brachialis muscle will snap as the elbow extends past the last 20° over the anteromedial elbow. The translated part of the muscle will snap back over the trochlea laterally on elbow flexion.

Table 4: Synovial plica impingement

<ul style="list-style-type: none"> ■ It is a condition where snapping at the lateral elbow is attributed to the interposition of a lateral synovial fold or plica in the radiocapitellar joint.³⁰ ■ Synovial plica is the remnant embryonic septae formed during elbow joint development. The elbow joint is formed during mesenchymal cavitation at the embryonic stage where three cavities (radiohumeral, ulnohumeral and radioulnar) merge together to form the whole elbow joint.
<p>Prevalence</p> <ul style="list-style-type: none"> ■ Rare³¹ ■ Reports showed that the condition is more common in throwing athletes, tennis players and golfers where repetitive microtrauma and overloading at the radiocapitellar joint pertains.³²
<p>Causes & Associations</p> <ul style="list-style-type: none"> ■ The presence of synovial plica is physiological. It causes symptoms when pathological processes intervene.^{33,34} Arthroscopic findings of symptomatic cases showed that the synovial plica becomes hypertrophied and inflamed with enlargement of villi or becomes thick white fibrotic from chronic inflammation. The pathological plica dislocates into the radiohumeral joint posterior to and just above the olecranon during elbow motion. ■ The condition is associated with radiocapitellar chondromalacia³⁵ at the radial head margin and the capitallum humeri. It is postulated that the mechanical snapping over the radiocapitellar joint may accelerate its cartilage degeneration.
<p>Clinical presentations</p> <ul style="list-style-type: none"> ■ Pain and swelling at the posterolateral aspect of the elbow ■ Snapping at posterolateral elbow during elbow extension with supination (posterior plica folds and the anterior plica extend and taut) or flexion with pronation (posterior plica extend and taut and the anterior plica folds). ■ Locking or limitation to full extension due to plica impingement. ■ Flexion pronation test: snap reproduced by passively flexing a pronated arm at 90° -110° flexion.³⁵ ■ Aconeous soft spot tenderness is also advocated to be a helpful clinical sign.³²

Table 5: Torn Annular Ligament

<ul style="list-style-type: none"> ■ It is a condition where snapping at the lateral elbow is attributed to the slippage of the separated annular ligamentous band out of the radial head on elbow flexion; and the separated band slips over and covers the radial head again on extension.¹⁵
<p>Prevalence</p> <ul style="list-style-type: none"> ■ Unknown.
<p>Causes & Associations¹⁶</p> <ul style="list-style-type: none"> ■ Hereditary factor contributing to loose annular ligament. ■ Repetitive microtrauma from throwing motion of the arms.
<p>Clinical presentations¹⁶</p> <ul style="list-style-type: none"> ■ Pain in the lateral aspect of the elbow. ■ Snapping over the lateral elbow when the elbow is in pronation and passively flexed to 110°. The snapping reoccurred when the pronated elbow is passively extended to 70°. The range of motion at the elbow is usually not affected. ■ Interposition of a torn or loose annular ligament in the radiocapitellar joint may occasionally lead to catching sensation or locking at the elbow.

Table 6 Posterolateral rotatory instability of the elbow

<ul style="list-style-type: none"> ■ It is a condition where the radial head and the proximal ulna rotate as a single unit off the distal humerus with intact proximal radioulnar joint.³⁶ ■ The main static stabilizer of the posterolateral elbow are the followings: <ul style="list-style-type: none"> ● Lateral ligament complex (radial collateral ligament, the lateral ulnar collateral ligament and the annular ligament) ● Radial head ● Coronoid process of the ulna Insufficient constraints from these structures may result in posterolateral rotator instability of the elbow.
<p>Prevalence</p> <ul style="list-style-type: none"> ■ The most common type of symptomatic chronic instability of the elbow.³⁷
<p>Causes & Associations</p> <ul style="list-style-type: none"> ■ Trauma³⁸ <ul style="list-style-type: none"> ● Dislocation or subluxation with inadequate ligamentous healing ● Fall on outstretched hand with combined force towards the elbow: <ul style="list-style-type: none"> – Axial loading – Supination – Valgus moment ■ Chronic attenuation of lateral ligament complex <ul style="list-style-type: none"> ● Primary congenital³⁹ or secondary to overuse⁴⁰ ● Long standing cubitus varus will lead to <ul style="list-style-type: none"> – Lateral ligament stretches and loses its normal tension – Altered pull of triceps exerting an external rotator moment on ulna ■ Iatrogenic <ul style="list-style-type: none"> ● Follow open or arthroscopic release of lateral epicondyle ● Follow surgery to the head of radius^{41,42} ● Generalized ligamentous hyperlaxity
<p>Clinical presentations</p> <ul style="list-style-type: none"> ■ A spectrum of presentations ranging from vague symptoms to frank recurrent posterolateral dislocation: <ul style="list-style-type: none"> ● Lateral elbow pain ● Clicking, snapping, popping ● Locking elbow ■ Attenuated by activities which place the forearm externally rotated with valgus and axial loading of the elbow. <ul style="list-style-type: none"> ● Pushing up from a chair ● Doing press-ups ■ Specific tests trying to reproduce symptoms or displacement of the radial head by a combination of external rotation of forearm, valgus and axial loading.⁴³ <ul style="list-style-type: none"> ● Lateral pivot shift (apprehension) test ● Stand up test / chair sign ● Posterolateral rotator drawer test ● Table-top relocation test ● Active floor push-up sign

Table 7: Comparisons between different snapping medial elbows

Clinical entities	Dislocation of ulnar nerve	Snapping medial triceps	Snapping Brachialis
Site of pain	Postero-medial elbow	Postero-medial elbow	Antero-medial
Associated neuropathy	Ulnar	Ulnar	Median
Snapping angles	1 snap on elbow flexion At 70°-90°	2 snaps on elbow flexion: 1 st snap at 70°-90° 2 nd snap at 115°	1 snap on elbow extension At 160°
Accentuated activities	Eccentric elbow flexion or extension	Eccentric loading of triceps with phase of resisted elbow flexion >90° and resisted extension	Eccentric elbow flexion or extension

Table 8: Comparisons between different snapping lateral elbows

Clinical entities	Synovial plica impingement	Torn annular ligament	Posterolateral rotatory elbow instability
Site of pain	Postero-lateral elbow	Lateral elbow	Lateral elbow
Associated neuropathy	Nil	Nil	Nil
Snapping angles	Snap by passively flexing a pronated arm at 90°-110°	Snap by passively flexing a pronated arm at 110° Or extending a pronated arm at 70°	Non-specific
Accentuated activities	Extension with supination or flexion with pronation	Flexion with pronation	Forearm externally rotated with valgus and axial loading of the elbow

This case report demonstrated a case of medial snapping elbow caused by ulnar nerve dislocation associated with subluxation of the medial head of the triceps. It is one of the commonest causes of snapping elbow syndrome. Three differential diagnoses for **MEDIAL SNAPPING ELBOW** are commonly quoted from literature:

1. Ulnar nerve dislocation (**Table 1**)
2. Subluxation of the medial head of the triceps (**Table 2**)
3. Snapping brachialis muscle (**Table 3**)

From literature, snapping elbows are most frequently related to medial anatomical structures. Here, we also presented a case of lateral snapping elbow, where the ECU tendon flicked over the hypertrophic synovial plica from the radiocapitellar joint, resulting in snapping. Several recent reports brought **LATERAL SNAPPING ELBOW** into the spotlight. Differential diagnoses include:

1. Synovial plica impingement (**Table 4**)
2. Torn annular ligament (**Table 5**)
3. Posterolateral rotator instability of elbow (**Table 6**)

To approach a patient with snapping elbow, a detailed pain history of how and when the snappings occur would give hints on the cause of the snapping. Once the snapping phenomenon is clinically determined, its anatomical diagnoses should then be sought as it is crucial for successful treatment.

Our case studies have demonstrated that musculoskeletal ultrasonography is a powerful tool

for making the anatomical diagnoses. Since the snapping elbow syndrome is a dynamic phenomenon, musculoskeletal ultrasonography has the advantage of real-time imaging as physicians can put the patients' elbows in motion to reproduce the snapping and focus on that particular region under real-time scanning to find out the causative structure or mechanism. MRI on the other hand has an inherent limitation as a static cross-sectional examination and therefore may be difficult in assessing the transient snapping phenomenon.

The limitations of this study include the limited number of subjects as snapping elbow syndrome is in general uncommon. In case 2, the sonographic diagnosis was finally confirmed by intra-operative findings. However, as the case 1 patient refused surgery, the sonographic diagnosis could not be confirmed operatively but the sonographic findings of that case were further verified by one of the world experts in musculoskeletal ultrasonography to ensure accuracy.

Conclusions

This article highlights 2 cases of snapping elbow syndrome, one snapping on the lateral side from hypertrophic synovial plica abutting on ECU, another one snapping on the medial side from dislocation of ulnar nerve with subluxation of medial head of triceps. Upon clinical examination of the elbow, snapping was evident in both cases but the precise snapping structures could not be confidently delineated clinically. Musculoskeletal ultrasonography was able to display real-time images of the causative snapping structure(s) disputing that they are transient when

the elbows were put into motion. It is considered that musculoskeletal ultrasonography can be the investigation of choice to evaluate snapping elbow syndrome.

Acknowledgements

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What's in the web for family physicians – Ophthalmology update

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National Eye Institute (NEI)

<http://www.nei.nih.gov/>

NEI, of the U.S. National Institutes of Health, is established to co-ordinate research, training and health education of various eye diseases. The website is very resourceful in eye disease conditions. A series of Youtube educational videocasts, *Photo, Images, and Video* on various eye problems are available for sharing with patients. Through their NEHEP program, (<http://www.nei.nih.gov/nehep/programs/index.asp>), training materials for health workers, including recorded seminars online are available. A medical symposium "Translational Research and Vision", recorded in June 2010, is hosted at the website. (<http://videocast.nih.gov/summary.asp?Live=9419>).

The Eye Digest

<http://www.agingeye.net>

The Eye Digest provides information on diseases of the eye as patient education. The content of the website, all written by qualified ophthalmologists, is maintained by the Eye & Ear Infirmary of the University of Illinois. The intention of this website is to provide easy and free access to unbiased and non-commercial information on eye disease conditions, an attempt to empower the public to take control of the vision health, while educating them on the importance and need for further medical advances. Apart from information on vision basics, there are also credible information on different aspects of laser vision correction. Some of the topics covered include *Macular Degeneration, Vision and Ageing, Cataract, Dry eye, Diabetic Retinopathy, and Glaucoma*. At the website, there are also useful links and health video (<http://www.agingeye.net/mainnews/>

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[videos.php](#)) in keeping the public updated on the treatment and prevention of various eye problems.

OphthoBook

<http://www.opthobook.com/>

The website is a free online version of the ophthalmology textbook, with video-lectures for each chapter. The videos correlate closely with the book chapters, and the full-motion video/animation segments helps understanding of the different eye disease conditions. Some of the chapters of the book include *History and Physical, Basic Eye Anatomy, Glaucoma, Retina Eye Infections, Neurology, Pediatrics, Trauma, Optics, Lens & Cataract*. At the website, there are also other educational modules like *Online Flashcards*, and *Recommended Ophthalmology Books*, and *Other Online Resources to Ophthalmology*.

Thieme E-Book Library: Ophthalmology

<http://ebooks.thieme.com/catalog/show/ophthalmology/33>

Thieme E-Book Library is an online collection of downloadable and fully illustrated textbooks from Thieme's Color Atlases and Flexibook series. Textbook titles include *Color Atlas of Ophthalmology, Neuro-Ophthalmology Illustrated, Ophthalmology, Ophtho Notes, Retina in Systemic Disease*. It has a user-friendly interface with high-quality illustrations. Searching tools are available for conducting field and full-text searches within individual books, or throughout the entire E-Book Library.

EyeRounds.org - Ophthalmology cases indexed by condition

<http://EyeRounds.org>

The website is published by the Department of Ophthalmology & Visual Sciences of the University

of Iowa. It harbors a huge inventory of well illustrated case studies. These cases were presented during grand rounds at the department in its ophthalmology forum for review or study purposes. Some of the features include *Ophthalmology cases indexed by condition*, *Ophthalmology Grand Rounds*, *Ophthalmology atlas*, *Ophthalmology tutorial*, and *Video atlas*. A library of surgical videos of different eye procedures is hosted under Video Atlas.

Wills Eye Knowledge Porta

<http://www.willseyeonline.org/>

All CME materials and courses at the website are free of charge. A good way to start at the website is by taking the very helpful *Virtual Video Tour*, which outlines all essential features of the website. There are surgical videos, CME courses, and online lectures, available at the website. Browsing at the website requires registration to the website, which

is free of charge. Some of the titles of recent CME courses include: *Choroidal Nevus*; *Patient Selection and Expectation for Cataract Surgery*; *Thyroid ophthalmopathy*; *Herpes Anterior Segment Disease*; *Macular Degeneration*; *Diplopia Danger Signs*; and *OCT scan etc.*

Medscape Ophthalmology

<http://www.medscape.org/ophthalmology>

Medscape Ophthalmology website has their educational materials presented in different formats. The formats include *Conference Coverage*, *Clinical update articles*, *CME-LIVE*, *Clinical briefs*, *Journal CME articles*, *Special report CME*, and *CME CIRCLE*. The *CME-LIVE* comes with online streaming video, synchronized visuals, and interactive questions and answers. The *CME CIRCLE* includes multimedia content from live symposia or monographs from other providers, which were then posted onto Medscape. ■



Hong Kong
Primary Care
Conference
The Hong Kong College
of Family Physicians

Hong Kong Primary Care Conference 2012

UNITED WE CARE - FORGING PARTNERSHIP IN HEALTH

Following the success of the 1st Hong Kong Primary Care Conference (HKPCC), the Hong Kong College of Family Physicians is honoured to host and organize this landmark conference again, to be held on June 2 and 3, 2012.

This year, the organizing committee has chosen “*United We Care : Forging Partnership in Health*” as the main theme of the conference, with a focus on strengthening collaborations among health care professionals across different sectors to enhance primary care provision to our community.

With increasing global and local emphasis on the development of primary care in recent years, this conference serves as an impetus for bringing together experts, healthcare providers including family physicians, dentists, nurses and allied health practitioners to promote collaborative and networking opportunities in addressing present and future challenges. We hope to provide a stimulating platform for open exchange of experiences and views on latest developments and trends in primary care among different disciplines in addition to sharing of latest scientific updates and research activities.

This conference will feature exciting blends of plenary sessions, workshops, seminars, paper and oral presentations. Furthermore, this year, we have added a “Clinical Case Presentation” competition to highlight interesting and challenging cases managed in primary care including multi-disciplinary team involvement.

We warmly invite you all to submit abstracts for free paper presentations and posters, to participate in our full paper competition and to register for the conference.

Furthermore, we also encourage you to join our “Clinical Case Presentation” competition. Instructions for abstract submission, full paper competition and clinical case presentation competition are available on subsequent pages and at our College website.

More details about the conference will follow soon in Hong Kong Practitioner, FP Links and our College website. We are looking forward to your participation and contribution. Get involved and let’s work together to enhance primary care in Hong Kong.

Dr. Lorna NG

Chairlady

Organizing Committee

Hong Kong Primary Care Conference 2012

Announcement for the Clinical Case Presentation Competition of HKPCC 2012

Do you find that you have encountered lots of interesting cases among your daily practice?
Do you want to share your personal experience with the others?

HERE COMES THE CHANCE!

The Organizing Committee of the upcoming Hong Kong Primary Care Conference is now holding a **"Clinical Case Presentation Competition"** and all are welcome to participate!

Format:

Clinical cases encountered in primary care especially cases illustrating the benefit of multidisciplinary care are welcomed. Doctors, nurses, physiotherapists, clinical psychologist, occupational therapists, dietitians, podiatrists and all allied health members are all welcomed to join the competition.

You will have around 15 minutes to do your presentation. It can be in the form of individual presentation, group presentation (up to 5 people per group), role playing, drama etc.

Judges and Prize:

The Organizing Committee of the HKPCC as well as the floor audience will vote for the Best Presentation and \$1000 Cash will be awarded to the team / individual.

CPD / CNE / CME points will be granted for the speaker as well as the group members.

The judging criteria will be based on the content, the presentation skills, as well as the ability to demonstrate multi-disciplinary collaboration in clinical management in primary care.

Submission details:

- The presentation should be the original work of the participants.
- Deadline will be on 31st March 2012.
- The entry should be submitted together with the completed submission form (please download the form from www.hkcfp.org.hk), which includes the name of the presentation, your name, mailing address, email address and telephone number.
- All entries will be acknowledged upon receipt.
- Entries should be emailed to "the email add provided by HKPCC".

If you have any questions concerning the **"Clinical Case Presentation Competition"**, please do not hesitate to contact Mr. Partick Wu or Ms. Crystal Yung, the HKPCC 2012 Secretariat, by phone at 2861 0220 or by email: "hkpcc@hkcfp.org.hk"

HONG KONG PRIMARY CARE CONFERENCE PROGRAMME BOOK COVER COMPETITION

THE organizing committee of the upcoming Hong Kong Primary Care Conference (HKPCC) is looking for artistic talent to illustrate the front cover of the its conference programme.

The conference is now in its second year and the theme of the HKPCC 2012 is 'United We Care: Forging Partnership in Health'.

We are seeking original artwork to set the tone of the conference in depicting both the theme and the spirit of the conference – afterall a picture is worth a thousand words! The winning entry will be proudly displayed on the front cover of this year's conference programme Book.

We cordially invite everyone to have a go and receive recognition for their artistic abilities whether the medium is in pencil, charcoal, paint or photography !!! Astound your colleagues with your talent!

WINNER:

Artwork will be displayed on front cover of HKPCC programme.

Complimentary entry to HKPCC.

FINALIST:

Artwork will be displayed for viewing at the HKPCC.

TIMELINE:

Submission deadline **31st January 2012**.

Announcement of result: as soon as possible on HKCFP Website.

The winner will be contacted by our staff at the conclusion of the competition.

SUBMISSION DETAILS:

The submitted entry must be the artist's original work.

Entries must be submitted on paper or by electronic format.

Please note that entries may be copied and enlarged/reduced to A4 size. Supplementary written explanation of your idea is welcome, although not mandatory.

The entry should be submitted together with the completed submission form, which includes the artist's name, mailing address, email address, and telephone number.

All entries will be acknowledged upon receipt.

All winning and finalist entries will become property of the Hong Kong College of Family Physician.

Entries will not be returned.

Entries should be sent to the Hong Kong College of Family Physician or emailed to: hkpcc@hkcfp.org.hk.

JUDGING PANEL:

The organizing committee of the upcoming HKPCC 2012.

JUDGING CRITERIA:

The Organizing Committee will be basing their decision on:

The originality of the work in reflecting the theme of the 2012 Conference.

The 'wow' factor.

Please note there is no limit to the number of entries per entrant so get busy sketching, painting, snapping.....

If you have any questions concerning this Competition, please do not hesitate to contact Mr. Patrick Wu or Ms. Crystal Yung, the HKPCC 2012 Secretariat by phone at 2861 0220 or by email 'hkpcc@hkcfp.org.hk'.





UNITED WE CARE - FORGING PARTNERSHIP IN HEALTH

FULL PAPER COMPETITION

We cordially invite your participation in the Full Paper Competition of the HKPCC 2012. The Competition is a long-standing tradition of HKCFP for promoting and recognizing well-designed, innovative research, which bears potential to exert impact in clinical practice or development in the field of primary care.

The HKPCC 2012 Organizing Committee will invite renowned scholars to review the participating papers. Judge(s) appointed by the Organizing Committee will determine the final awardees based on qualities of the paper.

The winner will be awarded the Best Research Paper Award, which will be presented at the opening ceremony of the HKPCC 2012. The winning team will also be featured in our college newsletter – Family Physicians Links (FP Links).

Awards

The **Best Research Paper Award** winner will receive **HK\$5,000** and a certificate.

Eligibility Requirements and Author Guidelines

To be eligible for participation in the full paper competition, **the first author of the paper must meet ALL of the following conditions:**

- (1) The author must register at the Conference.
- (2) The author completes the majority of the research and writing for the paper;
- (3) The author has not used the paper to apply for other awards.

The participating paper should be a full-length article. It should include a structured abstract of no more than 250 words. The text should contain 2,000 - 3,000 words, organized as INTRODUCTION, METHOD, RESULTS and DISCUSSION. It should consist of no more than 5 illustrations (tables/figures).

Only electronic version is accepted. The full paper should be typed in 12 point size in Microsoft Word format.

Award Selection Criteria

Each paper will be evaluated against the following criteria:

1. Academic rigor of the paper (e.g. originality, methodology, organization and presentation).
2. Relevance to primary care (e.g. importance of the topic and the impact of the findings on the practice or development of primary care).

How to Submit

By Email – Attach the full paper with the completed “Full Paper Submission Form” and send to hkpcc@hkcfp.org.hk.

IMPORTANT: Please download the Full Paper Submission Form from our College’s Website www.hkcfp.org.hk and submit the paper with the form.

Submission Deadline

30th March 2012 (Friday)



For enquiry, please contact Mr. Patrick Wu / Ms. Crystal Yung at 2861 0220 or by email: hkpcc@hkcfp.org.hk.

We look forward to receiving your research articles!



UNITED WE CARE - FORGING PARTNERSHIP IN HEALTH

ABSTRACT SUBMISSION INSTRUCTIONS

ABSTRACT FORMAT

- Electronic version is preferred. Abstract should be typed in 12-point size in Microsoft Word format. Handwritten abstracts will NOT be accepted.
- The abstract must not exceed 250 words, and should be organized as follows: **TITLE, AUTHOR(S), INTRODUCTION, METHOD, RESULTS and DISCUSSION**. Commentaries and discussion papers need not follow the above format apart from the TITLE and AUTHOR(S).
- All presenting authors must register at the Conference.
- Authors' full names and affiliations must be specified. Surnames should be printed in bold.
- All abstracts must be submitted in English. All accepted abstracts must be presented in English.

HOW TO SUBMIT

By **Email** – Attach the abstract with the completed “Abstract Submission Form” and send to hkpcc@hkcfp.org.hk

IMPORTANT: Please download the Abstract Submission Form from our College's Website www.hkcfp.org.hk and submit the abstract with the form.

PLEASE NOTE

- 1) The submitted abstract must not be **identical** to abstracts submitted to other conferences.
- 2) The Organizing Committee will have the right of final decision on the acceptance of an abstract.
- 3) Only **ONE** designated presenter can present the accepted abstract. Co-authors are welcome to register and attend the session of the conference.
- 4) Acknowledgement will be sent by email upon receipt.
- 5) The deadline for abstract submission is **30th March 2012 (Friday)**.
- 6) For enquiry, please contact Mr. Patrick Wu / Ms. Crystal Yung at (852) 2861 0220 or by email hkpcc@hkcfp.org.hk.

Advertisements	<p>Personal advertisements by members are calculated at a cost of \$100 per 30 words or part thereof. Advertisements by non-members, institutions, hospitals or companies are calculated at a cost of \$600 per 30 words or part thereof. Please make cheque payable to 'HKCFP Education Ltd.'</p> <p>Closing dates – copies must be received by the first week of the month for publication in the following month's issue. Format – each advertisement should be typewritten in double-line spacing on a separate page.</p>
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POSITIONS VACANT

FM trainee vacancy at Ma On Shan. Musculoskeletal medicine training with excellent prospect. Flexible working hours, 3 weeks annual leave. Basic salary plus bonus. Tel: 9016 2909.

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FT/ PT/ Locum **Family Physician** (min. 3 years' experience) for practices of United Christian Nethersole CHS in NTW / NTE / Kowloon. Flexible hours. Please e-mail resume with expected salary - Ms. Law : hr@ucn.org.hk.

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Full-time GP/ Locum/ Specialists wanted 九龍商場舖, Welcome Joint Investment. Transparent & generous Bonus + Excellent Prospect. Dr Kam 3165 1460 profgp2004@yahoo.com.hk.

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Looking for an opportunity? Exclusive Central practice looking for a doctor for partnership. Mainly expat clientele in established family practice working with 12 integrative healthcare specialists. Further information available from: admin@holistic-central.com (www.holistic-central.com).

**** **** **** ****

G/F Clinic near North Point MTR with 2 consultation rooms, elegantly furnished with computerization for rental / ± take-over, walk-in-and-practice. Available Immediately. Contact enquiry@adecmed.com / Ms. Amy Chan 9212 6654.

**** **** **** ****

FT/ PT GP, Various SP & Locum wanted by UMP Healthcare Group. Attractive remuneration packages. Interested please email CV to hr@ump.com.hk or call Sandy Ng at 2507 6916.

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Accredited Private FM Centre invites energetic Doctors to join for expanding services. Basic / higher FM Trainee, A&E Officers, specialists welcomed. Basic + Attractive Profit Sharing ± Partnership. Send CV enquiry@adecmed.com (Attention: Amy CHAN)

**** **** **** ****

Accredited Private FM Centre invites Specialists for sessional consultations, 1-2/wk Cardiologists, ENT, Psychiatrists, Ophthalmologists and Gynecologists most welcomed. Profit sharing + Bonus. Send CV enquiry@adecmed.com (Attention: Amy CHAN)

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The Hong Kong Sanatorium & Hospital invites applications for posts of Resident Medical Officers. The Hospital is an accredited centre for both hospital and community based training for Family Medicine by the Hong Kong College of Family Physicians. Such training will be offered to all applicants.

Applicants should be :-

1. Registered with the Hong Kong Medical Council.
2. Fluent in written and spoken English and Chinese

Applications from doctors with FHKAM (Family Medicine) and doctors with Accident & Emergency Medicine experience are also welcome to provide service in our 24-hour Outpatient Department and Family Medicine Centre.

Please forward application including curriculum vitae to Dr Joseph Chan, Hong Kong Sanatorium & Hospital, 2 Village Road, Happy Valley, Hong Kong.

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A multidisciplinary clinic invites (Part-time / Full time) O&G specialist to join for consultation, obstetric and gynaecological check up. Good working hours with excellent prospect. Large customer base. Terms negotiable. Interested please call 9236 0591.

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The Editorial Board would like to thank all readers, contributors, sponsors and the College Secretariat for the tremendous support to the Journal throughout the year.

Wishing you all

**Merry Christmas
and Happy New Year**

The Hong Kong Practitioner

U-TURN away from Vascular Remodeling

Olmotec®

- Achieves near normal BP levels in hypertensive patients¹
- Provides more complete end organ protection with additional data on **Reversal of vascular remodeling¹**:
 - Bringing the measured parameter to values similar to normotensive controls
 - Results independent of the magnitude in BP reduction



Reference:

1. Smith RD, Yokoyama H, Averill DB et al. Reversal of vascular hypertrophy in hypertensive patients through blockade of angiotensin II receptors. JASH 2008; 2 (3):165-172.

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