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The client is injecting drugs through the neck vein.
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21ST CENTURY MEDICAL EDUCATION IN UNIVERSITY OF MALAYA

Over one hundred years ago, Sir William Osler, took up the Chair as the Regius Professor of Medicine at Oxford, after distinguished careers as professor in medicine at McGill University in Montreal, the University of Pennsylvania in Philadelphia, and the Johns Hopkins University in Baltimore. He was a superb clinical and a great teacher, and will be remembered for his contributions to medicine, including the establishment of medical residency programmes. He insisted that students learned from seeing and talking to patients, rather than just from dry didactic lectures as was the traditional teaching method of the time. And in referring to continuing medical education, he said, "The hardest conviction to get into the mind of a beginner is that the education upon which he is engaged is not a college course, not a medical course, but a life course, for which the work of a few years under a teacher is but a preparation (1)."

What does this term medical education conjure up? Does it refer to the teaching and learning of medicine and therefore relates to students and the curriculum? Does it refer to the process of teaching and therefore relates to teachers? Perhaps it is both, since teaching and learning go hand in hand.

The undergraduate curriculum is the first stage of medical education (2). It provides a foundation for future learning and practice as a pre-registration house officer and beyond. Graduates who have gone through this process must be aware of, and meet, the principles of professional practice that make clear to the public the standards of practice and care they should expect.

The General Medical Council of UK first published *Tomorrow's Doctors* in 1993 (3), which provided recommendations on undergraduate medical education. In more recent recommendations in 2003 (2), the emphasis moved from gaining knowledge to a learning process that includes the ability to evaluate data as well as develop skills to interact with patients and colleagues. The recommendations provide a framework that UK medical schools use to design detailed curricula and schemes of assessment. They also set out the standards that are used to judge the quality of undergraduate teaching and assessments when accreditation visits are carried out of respective medical schools.

With increasing interest in medical education as a discipline or specialty, many medical schools have established a medical education department (4). Such departments have various titles. Ones in common use include medical education unit, centre for medical education, centre for educational research, office of research in medical education or centre for educational development. The name of the department or unit suggests its position within the university structure.

The establishment of a department of medical education can also be seen as a response to various pressures, expectations and changes in society, education and medicine (4). These pressures include increased public expectations relating to healthcare, which place increasing demands on health professionals, societal trends towards increased accountability, educational developments that call for increased sophistication on the part of teachers in the health professions, increased scope of and specialisation within medicine that focus attention on what to teach and how to educate doctors, and the need to train more doctors within existing resources.

Medical education in the Faculty of Medicine, University of Malaya, has existed albeit in small pockets, and often as a result of the enthusiasm of individual academic staff. In 2002, the Medical Education Development Unit (MEDU) was first conceived in a working paper, and the final proposal was submitted first to Faculty and then to Senate for discussion and approval in 2005. However, the unit did not take shape until late 2007 when it metamorphosed into the Medical Education & Research Development Unit (MERDU), to incorporate the already existing Health Research & Development Unit (HeRDU).

MERDU has two main arms that cover medical education and medical research development. Some of the scope of work of the unit, under the medical education arm, will include monitoring and development of the curriculum and of assessment (including blueprinting of all examinations, and providing feedback to individual departments on student performance), introducing standard setting, developing eLearning and eTeaching modules, and learning about current trends and innovations in medical education circles from international meetings and to making these more widely known to faculty.

It has long been recognised that faculty development in medical education is crucial for developing and sustaining quality education in medical schools (5,6). MERDU will be responsible for initiating a formal orientation

programme for junior or incoming academic staff on our curriculum and faculty. Teaching the teachers is an important area which needs to be developed, and regular courses will be started to ensure academic staff are equipped with generic teaching skills, and later, to progress to other courses to develop more specific skills such as learning Problem-Based Learning (PBL) tutoring, PBL case writing, writing good examination questions and training to be an Objective Structured Clinical Examination (OSCE) examiner.

The administration of the Clinical Skills Laboratory (CSL) and the PBL tutorial rooms also comes under MERDU. The CSL was first opened in 2000, and has excellent facilities including a wide variety of mannequins and other training equipment for providing a safe environment for students to learn skills and procedures in simulated clinical situations. The PBL tutorial rooms have one-way mirrors and audio-visual equipment, and in addition to being used for PBL tutorials in the first and second years of the undergraduate MBBS programme, are currently used regularly for training workshops for PBL tutor training as well as OSCE examiner training.

The health research development arm of MERDU provides a consultancy service to help academic staff and postgraduate students on research topics and statistical analysis of data. It is also involved in faculty development, providing a wide range of training workshops on various aspects of research methodology and scientific publication. The editorial boards for the Asia Pacific Journal of Public Health and the University of Malaya Medical Centre (UMMC) Research Bulletin are both housed in MERDU.

MERDU is a "virtual" unit, created to support the educational and research activities of academic departments, coordinating training programmes working across department boundaries and encouraging the involvement of all disciplines in the faculty to focus on the quality of the teaching and learning and research processes in the faculty.

These are exciting times for medical education. The scholarly activity of academics is research. When this is based around improving patient care this produces clinical research, for example, clinical trials or laboratory-based research. However, a neglected area of medical academic scholarly activity is the research based around improving teaching and learning of medical students. Internationally, this is now recognised as a field worthy of investigation as manifest by the publication of many journals of medical education and Best Evidence Medical Education reviews. The support that this faculty has shown to the importance of both medical education and medical research development by the creation of MERDU now needs to be rewarded by a broadening of recognised scholarship activities to include those of clinical medical educators.

As Osler said in Aequinimitas (7), "A professor should have three things: enthusiasm, a full personal knowledge of his subject, and a sense of obligation to his students." Surely a sense of obligation to our students in the 21st century must be to embrace the scholarship of education in order to produce the best possible graduates by the best possible methods.

References

1 Osler W. Counsels and Ideals. Boston & New York: Houghton, Mifflin & Co., 1906: 142.

2 Tomorrow's Doctors: Recommendations on Undergraduate Medical Education. London: General Medical Council. 2003

3 Tomorrow's Doctors: Recommendations on Undergraduate Medical Education. London: General Medical Council. 1993

4 Davis MH, Karunathilake I, Harden RM. AMEE Education Guide no. 28: The development and role of departments of medical education. *Medical Teacher* 2005; 27(8): 665-675.

5 Amin Z, Khoo HE, Gwee M, Tan CH, Khoo DR. Addressing the needs and priorities of medical teachers through a collaborative intensive faculty development programme. *Medical Teacher* 2006; 28(1): 85-88.

6 Ramani S. Twelve tips to promote excellence in medical teaching. *Medical Teacher* 2006; 28(1): 19-23.

7 Osler, W. Aequanimitas. London: H.K. Lewis & Co, 1946.

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A FIFTY-YEAR CHALLENGE IN MANAGING DRUG ADDICTION IN MALAYSIA

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Introduction

The history of substance abuse in Malaysia can be divided into pre- and post-independent era. In pre-independence, the main drug of abuse was opium which was initially consumed by immigrants from China who were introduced by the British colonialist to work in Malaya. The post-independence era began in the 1960s when young adults were influenced by the "Hippy" subculture. At this time, consumption patterns changed where more Malays were involved in drug abuse compared to other ethnic groups (1, 2).

By the early 1980s, the prevalence of drug addiction increased and this increasing trend made the Malaysian government consider heroin addiction as a national threat. The national anti-drug task force was formed to control trafficking and to rehabilitate addicts who were involved in heroin addiction (3). Legislation was introduced where mandatory death sentence was implemented for those who smuggled more than 15 grams of heroin. Drug addicts found to be positive for heroin were forced to undergo compulsory rehabilitation for two years (4). Nationwide, up to 28 government drug rehabilitation centres were established, and at any particular period, each centre accommodated up to 500 inmates. Approximately RM50 million a year was spent to run these centres (5). The centres were initially managed on a total abstinence philosophy; however this approach produced poor results. The latest survey showed that 85% of drug addicts relapsed after completing their rehabilitation at these centres (4, 6). In view of the poor results, substitute treatment with methadone was introduced recently to these centres (7).

One of the visions of the Malaysian government was to create a drug addiction free nation by the year 2015. However, the increasing number of drug addicts has caused a surge in demand for rehabilitation centres, resulting in the inability of these centres to cope. For example, the number of drug addicts increased by 1% from year 2001 to 2002, but the number of drug addicts detected in year 2003 was 36,996, a 16% jump from the previous year (31,893). Furthermore, the National Drug Agency reported that 45% of the cases were repeat addicts. As for distribution of new cases, by ethnic group the Malays constituted 71%, Chinese 10.6% and Indian 8.2%. The majority (70%) were in the socially and economically most productive age group (20-39 years) and almost 98% of the addicts who occupied these rehabilitation centres were male. Currently, the number of drug users in the country is estimated to be 250,000 but the number is predicted to reach half a million by year 2015 (3, 8-10). The resulting economic, human resource and social loss is not quantifiable as the vacuum left by these people in various employment sectors are currently being filled by migrant workers. Thus, it is evident that the increasing trend in drug addiction poses a threat to the future of the nation (1, 6, 9).

Challenges to Treating Drug Addiction in Malaysia

Substance abuse is one of the leading and most complicated health and social problems faced by our country. Unfortunately, after three decades of managing these problems, outcomes are unpromising and poor. This could be due to several reasons. Firstly, treatment policy has been confined to a single treatment modality, which is the regimental rehabilitation programme. Secondly, the medical therapeutic approach has been totally ignored by this policy, despite strong evidence that addiction to drugs is a medical condition. It was only recently that the medical profession was called to review the treatment policy and provide input in the management of addiction in Malaysia. Thirdly, it is the

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stigma of the illness and rehabilitation treatment itself, which has resulted in patients being hesitant of seeking early treatment. It was reported that there is the fear of rejection by the community and losing their freedom once they enter a rehabilitation programme in Serenti Centres (6, 7, 9).

As everyone who enters the Serenti Centre is required to undergo rehabilitation and be detained for two years, this causes the inmates to be deprived of work. Most of them have to give up their occupation during detention and by the time they leave the centre, they lose their opportunity to work. This could be one explanation why many of them resort to crime once they are discharged from the Serenti Centre. Some addicts reported that they perpetrated crime in order to support themselves and their families. However, this reason is only part truth as it was found that many did it to support their addictive habit. This is because they abstained from taking drugs while in the Serenti Centre, but the rehabilitation centres do not cure them of the illness. Therefore, once discharged from the centre, they relapse (6, 7, 9).

The types of crimes reportedly done by drug addicts are snatch theft, selling drugs, fraud, house breaking, homicide and suicide. The involvement of drug addicts in crime could lead them to be imprisoned. Imprisonment adds another problem as it further stigmatises the drug addict since the community take this as confirmation that drug addicts are hard-core criminals. This leads to a total rejection from their families and the community. The drug addict thus loses hope and eventually becomes depressed. As a result of family rejections the only person they can confide in is other drug addict peers. This is also the time when addicts share needles, thus worsening the addiction problem. This process may explain the whole cycle of addictive behaviour and how it is associated with HIV and AIDS (1,6). It is very unfortunate that in the past, the medical community dealt with these addicts when they have already contracted these horrendous complications. The consequence of past inappropriate policies is a continually increasing number of infectious diseases among people who use drugs and an escalating incidence of HIV or AIDS in Malaysia. It has been reported that the cumulative number of HIV infections reported to the Ministry of Health Malaysia up to December 2005 was 70,559 cases with 8,179 positive for AIDS. Most (81.5%) of the HIV infected persons were young males (age 20-40 years) (1, 6, 7, 9).

The effect of failed treatment in Serenti centres affects the addicts and cause misery to their family members as 50% of drug addicts undergoing rehabilitation programmes are sole breadwinners. The impact of losing their sole breadwinner for two years caused extreme financial and emotional hardship, and stress in the family system leading to family disruption. This could be one explanation why children of drug addicts are at more risk of becoming drug addicts (6, 7, 9).

Due to needle sharing, families of addicts are also at risk from HIV and AIDS. There are reports where drug addict husbands, infected with AIDS, transmit the disease to their spouses and children. This is another disaster, which could have been prevented from the beginning if the addiction cycle that was worsen by the Serenti form of rehabilitation was stopped and replaced (6, 7, 9). Therefore, is it past time that the Serenti rehabilitation programme be reviewed?

There has been much concern expressed by the public as well as by professionals about the failure of the Serenti treatment programme in tackling heroin addiction in Malaysia. It is, therefore, timely for the government to evaluate the cost-benefit of the Serenti rehabilitation programme. Among the first consideration should be the duration and the type of drug addict who needs the treatment. It is suggested that the duration of stay in Serenti should be shortened from 2 years to about 3 to 6 months. There are many advantages of shortening the rehabilitation period (6, 7, 9). Firstly, this ensures that addicts will be able to go back into the community without depriving them of their potential either as workers or breadwinners of the family. Secondly, this is cost-saving for the government. It was reported that the government paid RM3000 to maintain one addict in a Serenti Centre for a month. Reducing the stay to six months will incur only a quarter of the cost incurred currently. Nevertheless, the most expensive cost is still borne by the drug addicts' familieswho suffer financial and emotional loss at being left without anyone to look after needs. This loss is of course unquantifiable in ringgit and cents (6, 7, 9).

The Present

Realising that the occurrence of HIV/AIDS among addicts were out of control, the national drug substitution task force was set up to control the problem. Although the suggestion was introduced in 2000, it was only fully implemented in 2005. The objective of this task force was to review the role of drug substitution treatment in order to prevent the spread of HIV, especially among heroin addicts. The success of its implementation was mainly due to concerted efforts made by the Ministry of Health, Malaysia, the Universities and non-governmental organisations (NGOs) who lobbied for it to be implemented quickly (6, 7, 9). The matter was urgently lobbied to ensure minimal bureaucracy or red tape. One of the procedures was a national study on methadone maintenance treatment. The study involved 1200 hard core drug addicts who were given free

methadone treatment from selected government and private clinics. While on methadone, the patients were also requested to attend regular counselling session by the national anti-drug task force (AADK). This was the first arrangement at the national level where doctors, NGOs and AADK officers met and delivered a very comprehensive treatment programme for addicts (1, 6, 7).

The result of the study showed that methadone maintenance therapy improved compliance to treatment programmes. In many centres, the level of compliance reached 80%. The advantage of this study was not only confined to improved retention rate but it also offered patients normal functionality and a good quality of life. For example, a case of Mr ZM, a 40-year-old single man who had been involved in drug addiction for 20 years and had undergone many rehabilitation programmes, but still failed to stop taking drugs; he had been through the rehabilitation programme in Pengasih, which claimed to cure many addicts. He visited the centre more than twice to get treatment but was unsuccessful. He only managed to stop taking heroin after he joined the methadone maintenance programme at the University of Malaya Medical Centre (UMMC) Addiction Clinic. A few months after the programme, he managed to get a job as a clerk and was no longer supporting himself through illegal activities. He also managed to go back to his family and even to contribute his income to their financial needs; though unfortunately by this time he was tested positive for HIV and hepatitis C. This is not the only story where patients like Mr ZM had to go through ineffective programmes before they came into our centre to get treatment. It is also very unfortunate that many of these patients were already HIV and hepatitis C positive by the time they sought treatment at the Addiction Clinic. The worst horror was when Mr ZM informed the team how he had been sharing needles, which were probably contaminated with this virus, with more than 20 addicts. Imagine how many among them are now potential virus carriers, and how many of them have transmitted the disease to others! If this pattern of transmission continues, there will be a time when Malaysia will share a similar fate with some Western African countries where HIV has almost eradicated their young productive population (6, 7, 9).

The experience at the UMMC Addiction Clinic also shows that many of the drug addicts managed to resume their social and family responsibilities. The team highlights another case of Mr R, a 40-year-old man who after chronic involvement with drugs became a burden to his family. He was never employed and his family always sent him to rehabilitation centres each time he went back on drugs. Fortunately one of his family members knew about the methadone maintenance programme, and he was referred for treatment. It only took him six months before he managed to overcome his craving and "cured" himself finally of drugs. Although he is still on treatment, he is now able to manage his family business and no longer steals his parent's money.

The cost of treating heroin addicts using a medical-based approach is also cheaper. For example, patients only need about RM 400 per month if they are undergoing drug substitution therapy. This is in contrast to long-term rehabilitation, which costs about RM3000 per month. If we include the quality of life and other indirect costs like the family burden, the cost of managing drug addicts in rehabilitation will definitely be much more than the direct costs (6, 7, 9).

A major cost will be incurred if they have already contracted hepatitis or AIDS. For example, the cost of treating drug addicts who have hepatitis C is about RM 15,000 per month. Imagine the burden of cost to the addicts if they had contracted the virus. Since most of them will not be able to afford to pay, there is a possibility that the cost will be financed by the government and this may place a financial burden to the nation.

The other advantage of allowing drug addicts to be treated under a drug substitution programme is the opportunity for training (e.g., job-placement training) and counselling (psychological counselling or spiritual-based counselling). During drug substitution treatment, the drug addicts are free from withdrawal or intoxicating effects due to heroin. This is advantageous as it puts them in a better position to participate and concentrate on rehabilitation and training (6, 7, 9).

The Future

There have been many claims made about the ability to cure addiction, but in reality evidence show even the most elaborate forms of treatment produce minimal success (less than 10% effectiveness). This is because addiction is a chronic relapsing disorder and requires multiple treatment programmes and long-term treatment modalities. Most often, treatment approach require psychological and social intervention with additional pharmacological treatment. It has been reported that treatment programmes which confine only to rehabilitation programmes like those in Serenti centres, produce poor results and inefficient use of public funding (6, 7, 9). As mentioned above, in Malaysia, after many years of experimenting with social treatment and ignoring medical input, the drug addiction problem has not only escalated but has exposed our society to the danger of the HIV and AIDS epidemic.

Thus, the 50th year of our Independence is, therefore, timely for us to rethink of a new approaches forward by combining the medical and psychosocial approach in managing the addiction problem in Malaysia. It is the hope for present and future generations to continue enjoying an independent Malaysia without succumbing to drug addiction. Otherwise, a situation may arise in which the next generation will die prematurely or lose their potential to maintain what we currently enjoy. This is because addiction to drugs is like a silent virus that, once established, can make our whole generation be enslaved by their addicted brain.

Conclusion

The way we handle addiction problems in Malaysia has gone through various processes. Rehabilitation programmes involving detention centres were first introduced, and it was only towards the late 1990s when it was realised that the success rate was almost negligible and analysis showed that monotherapy like rehabilitation produced poor success rate. The Malaysian government has now opened up policies involving new ideas in dealing with drug addiction. Drug substitution therapy, a new approach to dealing with drug addicts is the future of managing drug addiction in Malaysia.

References

1. Chawarski, MCM, Schottenfeld, RSM. Heroin dependence and HIV infection in Malaysia. *Drug Alcohol Depend* 2006; 82:39-42.
2. Navaratnam, VF. Natural history of heroin addiction and adjunctive use, in Research Report Series. 1988; 16, National Drug Research Centre, University Science Malaysia: Penang, Malaysia.
3. *National Narcotics Report*. Ministry of Health, Malaysia. National Narcotic Agency: Kuala Lumpur; 1998.
4. Navaratnam, VF, Kulalmoli, SK. An evaluative study of the drug treatment and rehabilitation programme at drug treatment centre in Centre for Drug Research UN/WHO/IFNG Research and Training Centre, University Science Malaysia: Penang; 1992.
5. National Anti-Drug Agency. Ministry of Home Affairs, Malaysia. Available from: www.adk.gov.my. 13 January 2008.
6. Chawarski, MCM, Schottenfeld, RSM. Behavioural drug and HIV risk reduction counselling (BDRC) with abstinent-contigent take-home buprenorphine: A pilot randomised clinical trial. *Drug Alcohol Depend* 2007.vol: pp?
7. Mazlan, MS., RS. Chawarski, MC, New challenges and opportunities in managing substance abuse in Malaysia. *Drug Alcohol Depend* 2006; 25(473-78).
8. Prison Statistics Report. Prison Department of Malaysia; 1996.
9. Habil, H. Managing heroin addicts through medical therapy. Kuala Lumpur: University Malaya Press, 2001.
10. Karofi, UA Drug abuse and criminal behaviour in Penang, Malaysia: A multivariate analysis. *Bangladesh e-journal of Sociol* 2005; 2(2):1-26.

REVIEW OF RESEARCH IN LEARNING ENVIRONMENT

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ABSTRACT:
Educational environment of an institution is the environment experienced or perceived by students and teachers. Individual students and teachers will respond differently to these subtle elements in their learning experience. Curriculum's most significant manifestation and conceptualisation is the environment. There is a proven connection between the environment and the valuable outcomes of students' achievement, satisfaction and success. If one wants to describe, assess or get a handle on the curriculum in a medical school, then the educational and organisational environment or total milieu associated with the curriculum and the medical school needs to be studied. Educational environment is one of the most important determinants of an effective curriculum. Educational environment fosters scholarly or intellectual activities; it encourages friendliness, co-operation and supportiveness. It also fosters the learning, growth and development of students. Students' perceptions of their educational environment are a useful basis for modifying and improving the quality of educational environment. Several research groups over the years have attempted to identify and quantify the presence and impact of rather intangible aspects of a learning environment. Each study has used different survey questionnaires to solicit student reactions. (*JUNMEC 2008; 11 (1): 7–11*)

KEYWORDS: Learning environment, curriculum, climate, medical school

Introduction

What is Learning Environment?

Learning environment or 'climate', 'ethos', 'ambiance' and 'atmosphere' of an institution is the environment experienced or perceived by students and teachers. Individual students and teachers will respond differently to these subtle elements in their learning experience. An educational environment has a 'personality'; studying this unique personality enables faculty, administrators and students to answer the main question, "What is medical education here really like?" Climate could easily be judged as a somewhat vague and ethereal concept. The climate of an educational environment, like the concept itself, is rather intangible, unreal and insubstantial, yet climate, in its effects, is pervasive, substantial and very real and influential (1).

Genn (2001) explained educational environment as follows:

"Curriculum's most significant manifestation and conceptualization is the environment, educational and organizational, which embraces everything that is happening in the medical school. There is a proven connection between the environment and the valuable outcomes of students' achievement, satisfaction and success. If one wants to describe, assess or get a handle on the curriculum in a medical school, then the educational and organizational environment or total milieu associated with the curriculum and the medical school needs to be studied. Educational environment is one of the most important determinants of an effective curriculum." (2)

"The university is a habitat, a society, a community, an environment, an ecosystem. It should be judged by the quality of life that it fosters, the opportunities for growth and experiment and exploration it provides, the concern for growth and enrichment and for culture that it exemplifies. The question is not just: 'What does your machine produce?' but also: 'How does the garden grow?" (3).

Educational environment/climate can be divided into three parts (4):

1. The physical environment (facilities, comfort, safety, food and accommodation)
2. The emotional climate (security, positive methods and reinforcement)
3. The intellectual climate (learning with patients, follow-through, evidence-based and up-to-date knowledge and skills)

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Why is Learning Environment important?

The General Medical Council (GMC) has initiated major innovations in the undergraduate medical curriculum and improvement of the learning environment is one of the major goals of the changes (5).

The United Kingdom (UK) Standing Committee on Postgraduate Medical Education stated that:
"A working environment that is conducive to learning is critically important to successful training." (6)

Entwistle (1995) explained that: "Learning is a process that is not easy to comprehend. Learning is influenced by the way in which the student goes about learning and studying as well as the conduciveness of the learning environment." (7)

Besides having a beautiful, modern and up-to-date infrastructure, a school or institution of higher learning must also have a modern and up to date learning environment. Emotional and social conditions of the institution which make up the psychological environment are extremely important because these affect the well being of the students and also the staff of the institution or universities. A calm and supportive environment is an essential prerequisite for successful learning. It was reported that students who perceived their learning environment as positive are more likely to develop effective learning strategies. Satisfaction with learning environment can encourage desirable approaches to learning – deep learning – vice versa (8).

Students' perceptions of their educational environment are a useful basis for modifying and improving the quality of educational environment. Continuous quality improvement and innovation are very essential in a medical school (9).

Educational environment research has shown that there is a high price to be paid for a dysfunctional learning environment. The adverse effects include stress, academic failure and dropout, and the cultivation of undesirable behaviour and attitudes. The potential benefits of an enhanced educational environment include comfort, confidence, responsibility, skills, knowledge, reinforcement, learning opportunities and models for practice (10).

Educational climate strongly affects student achievement, satisfaction and success. It is important to get regular feedback from students on how they experience the educational environment. Information obtained will provide a useful basis for strategic planning and resource utilization. Institutional remedial action should follow student's indication of areas of concern (11).

Research that has been done on learning environment

Several research groups over the years have attempted to identify and quantify the presence and impact of rather intangible aspects of a learning environment. Each study has used different survey questionnaires to solicit student reactions.

In order to develop an environment that is conducive to learning there are two prerequisites. One, what are the major elements that contribute to the particular learning environment? Two, what is the best available instrument that is needed to measure the learning environment to allow accurate assessment of the learning environment and to identify those areas that require immediate attention? The same instrument could subsequently be used to monitor the effect that any changes implemented have made.

Research began in 1930s with an interest in educational environment. Pace and Stern in 1958 developed an instrument to study educational environment by developing the MEI (Medical Environment Index) (12).

Levy *et al* (1973) surveyed the learning environment in a Georgia Medical School in the context of assessing curriculum change. Dimensions measured are desirability of learning situation, academic enthusiasm, goal direction, authoritarianism, breadth of interest, student interaction, and intellectual maturity (13).

Marshall in 1978 developed the MSLES (50-item) (Medical Schools Learning Environment Survey) to measure aspects of the learning environment relevant to student stress. Analysis from first administration to 93 first-year students at the Chicago Medical School indicated acceptable levels of reliability and validity (14).

Huebner (1981) designed and used the Medical School Environmental Stress Inventory (61-item) (MSESI) to measure student-reported stress. A total of 220 students at the University of Missouri-Columbia School of Medicine completed the questionnaire. Students described the major stressors as information – input overload, shortage of time, inadequate feedback regarding performance, and poor quality of interpersonal relationships (15).

Moore-West *et al* (1989) compared the perceptions of distress and attitudes toward the learning environment of students in innovative curricula and the traditional curricula using the Symptom questionnaire (SQ) and the Learning Environment Questionnaire (LEQ). The SQ was designed to measure dimensions of perceived

distress and the LEQ evolved from Marshall's medical School Environment Inventory consists of 5 subscales (1. The emotional climate subscale, 2. The nurturance subscale, 3. The student-student interaction, 4. The meaningful learning experience, 5. The flexibility subscale measuring an individual's perception of the learning environment). She found that the innovative-track students' perceptions of distress were significantly lower than those of the traditional-track students. Their expectations and perceptions of the learning environment were more positive, and they found their curriculum more meaningful and flexible than did traditional-track students. These findings suggest that a student-centered, problem-based approach may more effectively help students handle the stress associated with mastering a large body of information and coping with distressing situations such as those encountered by the practising physician (16).

Strayhorn and Frierson (1989) conducted a longitudinal study of first-year medical students at the University of North Carolina (UNC) School of Medicine to assess the correlations between the students' perceptions of the medical school learning environment and both their academic performances and their perceptions of well being using the 99-item questionnaire. They found that both the black and white students had similar perceptions of the learning environment's quality. Black students experienced more stress but found more support from faculty, class advisors, and administrators (17).

Mosley *et al* (1994) used the Medical Education Hassles Scale-R to assess stress, Coping Strategies Inventory (CSI) (85-items) to assess coping thoughts and behaviours in response to stress, Center for Epidemiologic Studies-Depression scale (CES-D) to assess well-being, and the Wahler Physical Symptoms Inventory (WPSI) to measure somatic complaints to 69 third-year students completing a psychiatry clerkship at the University of Mississippi School of Medicine. They reported that clinical level of depression was found in 23% of the students (18).

Dunn and Burnett (1995) used the Clinical Learning Environment (CLE) scale (23-items) to identify factors that characterize a clinical learning environment. This instrument has five subscales: staff-student relationships, nurse manager commitment, patient relationships, interpersonal relationships and student satisfaction. This scale provides the educator with a valid and reliable instrument to evaluate relevant factors in the CLE, direct resources to areas where improvement may be required, and nurture those areas functioning well (19).

The Center for Medical Education (CME) in Dundee, Scotland has developed an instrument or a diagnostic tool to assess learning environment. It is called the The Dundee Ready Education Environment Measure (DREEM). It is a very useful and flexible tool in that it is not culturally specific and can be used in a wide range of health professions institutions. It has been validated and tested in a range of settings and has proved to be a very useful 'diagnostic tool'. The (DREEM) instrument is a robust, 'culture free' and renowned tool which measure the quality of the educational environment and has been used by many researchers masters and doctoral students for the study of learning environment in their institutions (20–27). It has been validated and tested and has proven to be a very useful and easy to apply tool. Table I summaries the research utilising the DREEM as a diagnostic tool for the educational environment.

Sobral (2004) used the Course Valuing Inventory (CVI) to appraise how medical students perceive the meaning and value of their first-year experiences in medical studies and to identify the relationship between the CVI responses and the learners' attributes and expectations. The study involved 282 second-year students of a six-year medical programme over a four-year time frame (University of Brasilia, Brasilia, Brazil). Higher CVI scores related positively and significantly to female gender, stronger self-confidence as a learner, greater motivation to learn, meaningful orientation and reflection in learning. A separate test done showed that there was a significant relationship between the dimensions of CVI responses and the DREEM score (30).

Conclusion

Positive learning environment must be maintained and nurtured. In a supportive learning environment, the teacher encourages independence with learning, promotes critical thinking, promotes students' freedom to explore, and accepts differences among students in their approaches to solving problems. Regular evaluation and feedback will provide further valuable input for institution strategic planning. Institutional resources can be focused on those areas that urgently require remedial actions. Medical Schools must inculcate in our students the benefit s of lifelong learning and critical thinking.

Table 1 summarises the research utilising the DREEM as a diagnostic tool for the educational environment

No	Medical Institutions/Schools	Students surveyed	Total Mean Score (Reference)
1	UK Medical Schools	Undergraduate medical students	132/200 (6)
2	Arab Gulf University Arab United Emirates University		127/200,125/200 (21)
3	Nigerian Medical School	Undergraduate medical students (Years 4, 5 & 6)	118/200 (22)
4	Nepalese Health Professions	Undergraduate medical students (Years 1, 2 & 3)	130/200 (22)
5	University of Sao Paulo School of Medicine Faculty of Medical Sciences in Trinidad	First-Year medical students	124.4/200 (28)
6	Kasturba Medical College, India	Clinical years medical students	107.4/200 (29)
7	Canadian Memorial Chiropractic College (CMCC) Toronto, Canada	First, second and third year students	113/200 (27)
8	Medical School at King Abdul Aziz University; Saudi Arabia Umm Al-Qura University, Saudi Arabia; Sana'a University, Republic of Yemen; Dundee University Medical School, Scotland	Undergraduate medical students	102/200 107/2001 100/2001 139/200 (25)
9	Faculty of Medicine, University of Brasilia, Brazil	Second year medical students	123/200 (30)
10	Dental Training College, Malaysia	Dental nursing and dental Technology first and second year students	122/200 (61%) (26)
11	Birmingham University, England	Final year medical students	139/200 (70%) (31)
12	Faculty of Medical Sciences, University of Sri Jayewardenepura, Sri Langka	Pre-clinical, para-clinical year medical students	108/200 (32)

DREEM = The Dundee Ready Education Environment Measure

References

1. Genn JM, Harden RM. What is medical education here really like? Suggestions for action research studies of climates of medical education environments. *Med Teacher* 1986; 8(20):111–124.
2. Roff S, McAleer S. What is educational climate? *Med Teacher* 2001; 23(4): 333–334.
3. Genn JM. AMEE Medical Education Guide No. 23(part 1): Curriculum, environment, climate, quality and change in medical education-a unifying perspective, *Med Teacher* 2001; 23(4):337–344.
4. Pace CR. Thoughts on Evaluation in Higher Education, Iowa City: The American College Testing Program; 1971.
5. Wall D. Educational Concepts: The theory behind the practical aspects of Teaching and Learning, in: Chambers, R & Wall, D. *Teaching Made Easy: A Manual for Health Professionals*. Oxford: Radcliffe Medical Press Ltd; 2000.
6. Roff S, McAleer S, Harden RM, *et al*. Development and validation of the Dundee Ready Education

environment measure (DREEM), *Med Teacher* 1997; 19(4): 295-299.
7. Standing Committee on Postgraduate Medical Education (SCOPME), Good Practice in SHO training; 1991.
8. Entwistle NJ. Supporting Effective learning: A Research Perspective. Edinburgh: Centre for Research on Learning and Instruction, University of Edinburgh; 1995.
9. Pimparyon P, Roff S, McAleer S, *et al*. Educational environment, student approaches to learning and academic achievement in a Thai nursing school. *Med Teacher* 2000; 22(4):359-365.
10. Mulrooney A. Development of an instrument to measure the Practice Vocational Training Environment in Ireland. *Med Teacher* 2005; 27(4):338-342.
11. Till H. Climate studies: can students perceptions of the ideal educational environment be of use for institutional planning and resource utilization? *Med Teacher* 2005; 27(4):332–337.
12. Pace CR, Stern GG. An approach to the measurement of the psychological characteristics of college environments. *J Educ Psychol* 1958; 49(5):269–277.
13. Levy M, Morse PK, Liebelt RA *et al*. Use of the learning environment questionnaire to assess curriculum change. J *Med Educ* 1973; 48:840-440.
14. Marshall RE. Measuring the medical school learning environment. *J Med Educ* 1978; 53(2):98-104.
15. Huebner LA, Royer JA, Moore J. The assessment and Remediation of dysfunctional Stress in medical school, *J Med Educ* 1981; 56:547-558.
16. Moore-West M, Harrington DL, Mennin SP *et al*. Distress and attitudes toward the learning environment: effects of a curriculum innovation. *Teaching and Learning In Medici*, 1989; 1(3):151–157.
17. Strayhorn G, Frierson H. Assessing correlations between black and white students' perceptions of the medical school learning environment, their academic performances, and their well-being. *Acad Med* 1989; 64(8):468–473.
18. Mosley TH, Perrin SG, Neral SM, *et al*. Stress, coping and well-being among third-year medical students. *Acad Med* 1994; 69(9):765–767.
19. Dunn SV, Burnett P. (1995) The development of a clinical learning environment scale. *J Adv Nurs* 1995; 22:1166–1173.
20. Al-Zidgali L. Students' approaches to studying at the Institute of Health. Sciences, Sultanate of Oman. Masters of Medical Education Dissertation. Centre for Medical Education, Dundee University, Scotland; 1999.
21. Al-Qahtani MF. Approaches to study and learning environment in medical schools with special reference to the Gulf countries. PhD thesis, Centre for Medical Education, Dundee University; 1999.
22. Roff S, McAleer S, Ifere OS, Bhattacharya S. A global diagnostic tool for measuring educational environment: comparing Nigeria and Nepal. *Med Teacher* 2001; 23(4):378-382.
23. Zaini, R. Use of Dundee Ready Education Environment Measure (DREEM) for curriculum needs analysis in the Faculty of Medicine and Medical Sciences at Umm Al-Qura University, Saudi Arabia. Masters Thesis, Centre for Medical Education, Dundee University; 2003.
24. Bassaw B, Roff S, McAleer S *et al*. Students' perceptive on the educational environment, Faculty of Medical Sciences, Trinidad. *Med Teacher* 2003; 25(5):522-26.
25. Al-Hazimi A, Zaini R, Al-Hyiani A, et al. educational environment in traditional and innovative medical schools: A study in four undergraduate medical schools, *Educ Health*, 2004; 17(2):192-203.
26. Zamzuri, AT, Azli, NA, Roff, S, McAleer S. Students' perception of educational environment in Dental Training College Malaysia, *Malaysian Dental J* 2003; 25:15-26.
27. Till, H. Identifying the perceived weaknesses of a new curriculum by Mean of the Dundee Ready Education Environment Measure (DREEM) Inventory. *Med Teacher* 2004; 26(1):39–45.
28. Viera JE, Nunes, MPT, Martins MA. Directing student response to early patient contact by questionnaire. *Med Educ*, 2003; 37:119–125.
29. Mayya S, Roff S. Students' perceptions of educational environment: a comparison of academic achievers and under-achievers at Kasturba medical College, India, *Education for Health 2004*; 17:280–291.
30. Sobral, DT. Medical students' self-appraisal of first-year learning outcomes: use of the course valuing inventory. *Med Teacher* 2004; 26(3): 234–238.
31. Varma R, Tiyagi E, Gupta JG. Determining the quality of educational climate across multiple undergraduate teaching sites using the DREEM inventory. *BMC Med Educ* 2005; 5 (8):1–4.
32. Jiffry MTM, McAleer S, Fernando S, Marasinghe RB. Using the DREEM questionnaire to gather baseline information on an evolving medical school in Sri Lanka. *Med Teacher*, 2005; 27:348–352.

DO MEDICAL LECTURERS NEED TO BE SPECIALLY TRAINED IN TEACHING?

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ABSTRACT:
Over the years, the emphasis on research practices in healthcare has received more recognition than the emphasis on teaching practices. Also, in contrast to the strong focus on aligning care-giving practices with evidence of effectiveness; aligning educational practices with evidences of effectiveness has continued to be neglected. This creates a chasm that hinders the delivery of effective health practices. Many challenges in the current healthcare delivery system warrant a call for a revamp of health professionals' education, and for a greater focus in effective teaching, assessment and supervision.

This paper highlights the current challenges in health professional education (as revealed by the Institute of Medicine, IOM, 2003). It focusses on five key issues for promoting teaching excellence, and supports the move for new lecturers to be educationally trained so that 'teaching for learning' becomes current, effective and enjoyable. More importantly, the vision for health professional education that "*all health professionals are educated to deliver patient-centred-care as members of an interdisciplinary team, emphasising evidence-based practice, quality improvement approaches, and informatics*" can be attained. This vision has important implication for medical lecturers as it means they have to be better educated to teach in order to be prepared to meet the demands of a reformed healthcare system.
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KEYWORDS: Medical education, teaching-learning theory, healthcare professionals

Introduction

Teaching excellence is dependent on, "not only the activities of individual teachers, but also on matters that affect this experience at department and institutional levels" (1) and perhaps at the international level too to stay abreast with the needs of this globalisation era. In contrast to the well regarded research-excellence, teaching-excellence has not received its due recognition. Gale and Grant (2) lamented that "medical education at post-basic level has always lacked recognition". Indeed, evidence-based clinical practice has received more attention than the lukewarm and unequivocal attention given to evidence based teaching practices (3).

In the year 1997, the Malaysian Ministry of Education made a call for a study on the needs of university lecturers to undergo teaching training. The call generated more resistance than support from various professionals including the Malaysian Academic Movement, National Association of Private Educational Private Institutions (*New Straits Times*, 12 March; *The Star*, 28 March 2007). The argument against this call was that undergoing a teaching course is a waste of time, as university lecturers need the time to update their expertise in their own discipline. However, the argument for such move was driven by the challenges faced in the field of education and perhaps a socio-political agenda towards ensuring quality and safety with regards to health-related education.

There is a dire need to study this issue in more depth, particularly in reference to health professional education, to promote a new culture in our healthcare system. Clinical practices, research practices and teaching practices are given due emphasis, as in reality, their values and functions are interrelated. As a matter of fact, it was argued that health professionals who continue to use an outdated procedure because of convenience, despite availability of newer and proven effective ones, would be guilty of unethical behaviour and this may also constitute medical malpractice. (4) An example is the persisting practice of traditional

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axillary-dissection practice, even though sentinel lymph-node biopsy which has been proven less invasive and less damaging, has been introduced for sometime. Although, this matter has serious ethical-legal implications for clinical practices, it does not seem to have any impact at all on lecturers who persistently and unreflectively use the traditional ways of teaching and do not challenge the processes in the light of influential contemporary issues such as modern technological advances, demographic shift in healthcare, and/or the influx of non-traditional students.

Establishing the need to change: Challenges facing the health professional education

The emerging and ongoing criticism against the education of healthcare providers had pressurised some developed countries to review teaching excellence. Two rationales for the move are presented here.

Firstly, there is a prevailing culture that regards teaching as a routine duty of academic staff, whilst research, and clinical work, are seen as an excellent duties. This prevailing culture of expecting academics to be competent in teaching, but to strive for excellence in research, has hindered the advancement of teaching excellence.

Secondly, the effectiveness of the health system in responding to patient-needs depends on various inputs (including facilities, supplies, state of knowledge, and information technology). Universities must recognize these inputs are meaningless without appropriately 'educated' professionals, competent in their teaching and professional expertise in the health system. In short, this leads us straight into the debate on how to establish standards for teaching. The Institute of Medicine (5) cautioned that, "Education for health professionals is in need of major overhaul". In 2003, one hundred and fifty interdisciplinary experts collaborated for an educational reform, published in the IOM report, "*Health Professions Education: A Bridge to Quality*" (6). The report warned that there is inadequate preparation of health professionals (doctors, nurses, pharmacists and others) to provide the highest quality and safest medical care possible (which reflect gaps/limitations in how learning-teaching may have taken place leading to non-attainment of learning outcomes.

For any proposed change, Gale and Grant (1) assert, "it is vital to establish the need". The unfavourable and alarming IOM's 2003 report (6) presented an opportune impetus for policy makers to review the way the University lecturers, particularly those teaching in medical/health disciplines. This paper presents five key issues as the educational focus for supporting the call for preparing lecturers to teach in line with the critical need for an educational revamp in health professional education.

1) Trends in higher education: 'a place of instruction' versus 'a place to produce learning'

Today, university is no longer '*a place of instruction*' but rather '*a place to produce learning*'. The educational trend has shifted from an 'instruction-paradigm' to a 'learning-paradigm' (7), forcing a new role for higher education institutions. Proactive changes to accommodate this shift can be seen in the UK, where the University of Wales and the University of Dundee were amongst the first few universities to innovatively offer the post-graduate medical-education course to train medical educators from amongst their senior medical professionals of various health disciplines. The course prepares the health professionals, not just on the micro-teaching skill of their specific health/medical disciplines, but on theories of teaching and learning, curriculum development and assessment, technological aids, and the changes and contemporary issues influencing medical education.

Apart from this apt movement, greater awareness and more innovations are called for. The reason being, there were several significant changes in healthcare delivery which were not being met by the current education (5). Medical universities in Malaysia should consider this warning as a potential impetus to ensure all lecturers are trained to better facilitate their students' learning processes. Current delivery changes as outlined by the Institute of Medicine should be taken aboard and addressed.

Lecturers must be trained so that there is a conscious paradigm shift in their definition of learning. This ensures their effort is not just targeted at "learning as acquisition of accumulated facts, with a quantitative flavour', but is balanced by "learning as understanding, where the learner takes active role in interpretation and reinterpretation of experience to construct understanding" (8). In our Malaysian system, there seems to be a preoocupation in the lecturers' role to overload the students with facts, reinforcing learning with a quantitative flavour. In addition, the scheduling of all major examinations at the end of each academic year send a potent message to the student that the examination is an end to learning, and learning ceases to be active once the 'job ticket' is issued.

Therefore, for a medical university to facilitate educational reform it is vital that its key workforce (i.e., the lecturers) are trained systematically, (not via ad-hoc training), in order to stay relevant and effective. A conscious act to teach learners to meet the current unmet health-care needs is a sensible step forward toward crossing the quality chasm in medical education.

2) Trend in lecturers' role: 'Facilitating-learning' vs 'Giving-of-information'

The strong argument that university lecturers have to teach much more than school teachers, proportionate to its much higher level of education, is an erroneous assumption. Today, lecturers' role is as a facilitator—the 'driver of learning', working towards the ultimate goal of nurturing life-long learners. Thus, a teacher-centred style that promotes the teacher as the powerful 'knowledge giver' is ineffective as it tends to nurture dependency, and an unreflective 'pundits' whho are skilled at collecting large quantities of notes for regurgitation/reproduction in tests that focused on lower cognitive levels (8).

A visit to Bloom's Taxonomy of Educational Objectives (1956) (9) orientates new lecturers on "deep" (that uses higher order cognitive thinking skills, e.g., analysis and synthesis), versus "surface" learning, (reproducing knowledge via rote learning), so that meaningful learning, better retention and lifelong learning can be facilitated. Effective teaching is mastery of the instructional methods beyond content expertise. Knowing what to teach is crucial but knowing how to teach is equally, if not more important. Empirical evidence suggests that, optimal learning is a combination of 40% teaching and 60% self-study (10) whereby beyond this 40% of instructional activity, learning decreases. Scheck (8), an authority in learning style, asserted that good teaching does not just involve delivering content, it "helps the student to improve his/her approach to learning". For example, if we are to teach students how to use empathy to diffuse anger in angry, sick patients (which is very common), we need to understands three implications on the learning domains; (i) cognitive – to be able to enter into the patients' perspectives (without losing your own), (ii) affective – to be able to feel/put yourself in the patient's place, and (iii) skill (action domain) – to be able to verify emotions so that patients can connect or feel listened to. It is easy to neglect the affective and skill domains, which have perpetuated the current inadequacy in clinical competency.

Orientations to learning are changeable and responsive to the context of teaching, evaluation and curriculum. For example, studies found a strong correlation between high workloads, inappropriate assessment and surface approach (11), and changes in learning-outcomes with just minor changes in the evaluation methods (12) desirable learning approaches dropped significantly as the examination date approaches.

In addition, to stay effective, lecturers need to be socially, not just educationally responsible (13), to reach out to students with a caring attitude (14). Bond's (15) explanation of "*a respect for the other person's value, personal resources and capacity for self determination*" is intricately related. A positive attitude of the lecturer, create an environment that encourages student's effort in problem-solving and risk-taking. It challenges the health professional students to see the bigger picture in their profession, to want to make a difference in their own live, their patients and in the larger communities. Lecturers today must adapt along the paradigm-shift from a focus on instructional to a focus on learning in order to stay relevant.

3) Trend in adult learning: 'Constructivism and the Role of Prior Knowledge'

During the last few decades, the influx of mature learners in the health profession brings along with them characteristic features which Knowles (16) listed as including; a purposive behaviour driven by needs, self-direction, readiness to learn and orientated to learn. This affirms the need for medical lecturers to be exposed to the theory of adult learning or 'andragogy' (16), which has now been greatly expanded to incorporate life-wide (versus life-long) learning (17).

Can lecturers facilitate the learning of adults towards this current trend of a more analytical-reflective perspective? Certainly, and I would think understanding of the theoretical approaches can provide lecturer with much insights. Understanding of the constructivist' theory that portrays the active, engaged and self-regulated learner as deploying meta-cognitive skills in solving problems, and utilising prior knowledge to make sense of new experiences (18, 19) is a relevant example. Lecturers must be equipped on how to 'collaborate' with this new breed of learners more effectively. Managing teaching based on the 'learner-centered' principles (19) ensures that students are active in solving problems, practising learning strategies, making choices, and discovering important ideas.

4) Transfer of learning – implication for reform by healthcare provider

Transfer of learning in educational psychology is defined as 'the ability to apply knowledge or procedures learned in one context to new contexts' (20). It is critical for all lecturers to appreciate the role of 'transfer in learning' because, (i) all new learning involves transfer that is also

influenced by prior experience, and (ii) measures of transfer play an important role in assessing the quality of people's learning experiences (21).

Can teaching skills facilitate transfer? It was suggested that we can, by helping students learn about themselves as learners and develop the skill to monitor and regulate their own understanding, change their original conceptions through making their thinking visible (so that misconceptions can be corrected) and encouraging thinking, beyond the specific problem or about variations on the problem. Lecturers should also learn how best to facilitate in order to increase receptivity. Among other adult educators, provided some useful tips on how people retain. People retain 20% of what they hear, 30% what they see, 50% of what they hear and see, 70% of what they hear, see and say (e.g., discuss, explain) and 90% of what they see, hear, say and do. Therefore, lecturers would need to know how to drive learning with opportunities for learners to do something with the new information and skills.

A 'context-specific' (versus isolated, fragmentary) learning where knowledge-acquisition and knowledge-application ideally take place at the same time, is also crucial as it can maximize transfer of learning. Distance-learning and e-learning, assessment of prior learning, learning in non-traditional forms, life-situations as learning opportunity, and other non-school-oriented forms and situations where adults learn has widened the perception that the education of adults happen in more situations (17). Whilst knowledge (cognitive domain) is essential, lecturers must be consciously aware that "giving of information" or 'imparting of knowledge" in care giving is grossly inadequate. Neglecting the affective-domains aggravated by the increasingly fragmented and technological world of modern medicine, has lead to the perception that health professionals are 'cold' and insensitive (22). In asserting that empathy should characterize all health care professions, it was recommended long-term regular training that includes conscious efforts to develop medical students' empathic abilities (23). As empathy is a process that encompasses affective, cognitive, and behavioral activities; understanding the fundamental theory of learning-domains (24) helps ensure lecturers are teaching and consciously assessing their students holistically, to prepare them to better take care of people who are in crises.

Lecturers in health and medical profession should be amongst the first to proactively lead health educational changes. Oddly, despite the enormous changes in the healthcare delivery system, educational practices in healthcare have in fact changed very little. Unfortunately, in medicine, it has never been a traditional norm to train doctors in the art and science of teaching. As such, those expected to teach may do so in the same manner that they were taught, reinforcing the entrenched outdated, hierarchical medical model practice which perpetuates the findings that health professionals are distant, autocratic, unresponsive to demographic changes and the rise in patient-empowerment. The Institute of Medicine calls educators and accreditation-organisations to ensure that students and working health professionals be educated to deliver patient-centered care as members of an interdisciplinary team (6), with a greater call for interdisciplinary cooperation (5).

5) Ethics, professionalism and teaching

In this era, university lecturers must recognised that the increasing awareness of the ethical dimensions and responsibilities of teaching is essential for both enhanced teaching professionalism and, more significantly, improved teaching practice. It was argued that the failure to distinguish between teaching and learning also leads to increasing public disenchantment with public universities, and a decline in support and resources extended to academic institutions (4). This has important implications for teaching training because, a good clinician is not necessarily a good lecturer and vice versa. Related to this are two issues to be discussed.

Firstly, the need to update professional-knowledge and expertise should not be confused with the need to improve teaching practice; often the former is used as an excuse for negating the need for the latter (25). Updating professional knowledge is intricately linked to maintaining professional standards as outlined in the individual professional's code of ethics. Enrolling in a teaching-course can only lead to further improvement in one's profession, as the current adult-learning strategy in most teaching courses encourages reflection on one's respective subject-area and background.

Secondly, in terms of ethics, the entrenched hierarchical institutional practice of using doctors who are not trained in medical education to design medical and the other health professional curriculum should be viewed as unethical behaviour and constitutes professional malpractice. Teaching is a profession. For this very reason, education, as part of any university task, must be upgraded, and employees with a teaching task need to be trained.

Conclusion

In conclusion, teaching is both an art and a science. Whilst the art of teaching relates to the skillful delivering of the instructional objectives; the science of teaching

is in essence, the skillful integration of the educational theories with contemporary issues and challenges, so that the teaching of health professionals is consistent with the principles of the 21st-century health system. Indeed, 'to restructure clinical education to be consistent with the principles of the 21st-century health system' (5), there must be a system of reward and recognition to lecturers who embrace the art and science of teaching. In line with the notorious catchphrase, 'published or perished' for research excellence; perhaps a similar concerted effort for teaching-excellence should be promoted along a similar tagline. This will help to promote the ultimate aim of health education, i.e., towards generating and/or nurturing a generation of caring, reflective, theory-led health practitioners who are able to identify and respond appropriately to the needs of the people they serve in order to provide high-quality, relevant, effective, and equitable care and services.

References

1. Elton L, Partington P. Teaching standards and excellence in higher education: developing a culture for quality CVCP, Sheffield, staff development and training unit; Oct 1991. Available from: www.emeraldinsight.com/Insight/html/Output/Published/Emerald/ FullTextArticle/Pdf/1200020205_ref.html. Accessed 8 Aug 2007.
2. Gale R, Grant J. Managing change in a medical context: guideline for action. MT [serial on the Internet] 1990; 19 (4): [10 pages]. Available from: http://www.medev.ac.uk/resources/features/AMEE_summaries/guide10summary.pdf March. Accessed 8 Aug 2007.
3. Stuart GW, Tondora J, Hoge MA. Evidence-based teaching practice: implications for behavioural health. JAPMH [serial on the Internet]. Nov 2004; 32(2): [24 pages]. Available from: http://www.springerlink.com. Accessed 8 Aug 2007.
4. Saperstein AM. Research vs. Teaching: an ethical dilemma for the academic physicist. Paper presented at the Eastern Michigan University, July 1996 ethics workshop. Available online: http://www.physics.emich.edu/mthomsen/sape.htm. Accessed on 20 Aug 2007.
5. IOM. Crossing the quality chasm: A new health system for the 21st century [homepage on the Internet]. Washington DC: National Academies Press. Available from: http://www.iom.edu/ Object.File/Master/27/184/Chasm-8pager.pdf. Accessed 28 Aug 2007.
6. Greiner AC, Knebel E. Health professions education: a bridge to quality [homepage on the Internet]. Washington DC: National Academies Press. Available from: http://www.nap.edu. Accessed 8 Aug 2007.
7. Barr R, Tagg J. A new paradigm for undergraduate education from teaching to learning. PEJ [serial on the Internet].November1995; 27 (6): [13 pages]. Available from: http://proquest.umi.com/pqdweb?index. Accessed 23 Dec 2007.
8. Schmeck RR. *Learning strategies and learning styles*. NY: Planum Press; 1988.
9. Bloom, BS (ed).Taxonomy of Educational Objectives: The Classification of Educational Goals. Susan Fauer Company, Inc; 1956.
10. Gijselaers W. Schmidt H. Effects of quantity of education on time spent on learning and achievement. JERE [serial on the Internet] 1995; 1(2): [18 pages]. Available from: http://www.informaworld.com.dbgw.lis.curtin.edu.au. Accessed 8 Aug 2007.
11. Ramsden P. Context and strategy- situational influences on learning. In: Schmeck, (Ed). *Learning strategies and learning style*. NY: Plenum Press; 1998.
12. Newble DI, Jaeger K. The effect of assessment and examinations on the learning of medical students. JME [serial on the Internet]. Available from: www.blackwell-synergy.com/doi/1983; 17: [7 pages]. Accessed 8 Aug 2007.
13. Duignan P. Educational leadership: key challenges and ethical tensions [book on the Internet]. Melbourne: Cambridge University Press; 2007. Available from: www.cambridge.org/9780521685122. Accessed 8 Aug 2007.
14. Starratt R. *Ethical leadership*. San Francisco: Jossey-Bass Publishers. Quoted in Crippen C . The Democratic School: First to serve, then to lead. *Canadian Journal of Educational Administration and Policy*, December 5, 2005, Issue 47. Available from: http://www.umanitoba.ca/ publications/cjeap/articles/crippen.html. Accessed 29 Aug 2007.
15. Bond T. Counselling, counseling skills and professional roles. In: Swain J, ed. *The use of counseling skills: A guide for therapists*. Oxford: Butterworth-Heinemann; 1995.
16. Knowles M. Cited in Stuart GW, Tondora J, Hoge MA. Evidence-based teaching practice: Implications for behavioural health. *J Adm Policy Ment Health Ment Health Serv Res* Nov 2004; 32(2).
17. Reischmann J. Andragogy. History, Meaning, Context, Function. 2007. Available online http://web.uni-bamberg.de/ppp/andragogik/andragogy/index.htm. Accessed 12 Aug 2007.
18. Etkina E, Mestre JP. Implications of learning research for teaching science to non-science majors; 2007. Available from: http://www.sencer.net/Resources/pdfs/Backgrounders/ImplicationsofLearningResearch forTeachingScience.pdf . Accessed 31 Aug 2007.

19. APA. APA's learner-centered psychological principles. 1995. Available from: http://www.coe.ohio-state.edu/ahoy/Handouts%201.pdf. Accessed 31 Aug 2007.
20. Mestre J. Transfer of Learning: issues and research agenda. Report of a Workshop held at the National Science Foundation. Available from: http://www.nsf.gov/pubs/2003/nsf03212/nsf03212 _1.pdf. Accessed 2 Aug 2007.
21. Bransford JD, Brown AL, Cocking RR, ed. Learning and transfer in how people learn: brain, mind, experience, and school [book on the Internet]. Washington: The National Academy of Science; 1999. Available from http://www.nap.edu/html/howpeople1/ch3.html. Accessed 8 Aug 2007.
22. Ginburg S, Regehr G, Lingard L. The disavowed curriculum: understanding student's reasoning in professionally challenging situations. JGIM [serial on the Internet] 2003; 18: [7 pages]. Available from: www.blackwellpublishing.com. Accessed 8 Aug 2007.
23. Larson EB, Yao X. Clinical empathy as emotional labour in the patient-physician relationship. JAMA. Available from: http://jama.ama-assn.org/cgi/content/full/293/9/1100. 2005; 293: [6 pages]. Accessed 8 Aug 2007.
24. Bloom BS. *Cognitive Domain*. In: Bloom BS, (ed). *Taxonomy of educational objectives: the classification of educational goals handbook* 1. NY: McKay; 1956.
25. *New Straits Times.* Dons can reap benefits from course in teaching - Letter of the day. Letters. 8 April 1997; Col 1.
26. STAR. Lecturers do need teaching training. Letters/Opinion. March 28 1997; Col 1.
27. National Cancer Institute. Trainer's guide for cancer education; 1991. Available from: http://www.cancer.gov/clinicaltrials/resources/trainers-guide-cancer-education/page2. Accessed 18 Oct 2007.

COMPARATIVE STUDY OF ACUTE PANCREATITIS IN DIFFERENT ETHNIC POPULATIONS IN A MALAYSIAN PUBLIC HOSPITAL

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ABSTRACT:
Malaysia is a country consisting of people of Malay, Chinese and Indian ethnic origin and also of some Indonesian and Thai population. In this study of acute pancreatitis, the age group, sex incidence, clinical features, complications and treatment were compared between different ethnic groups. A total of fifty-four consecutive patients admitted in Sungai Petani Hospital, Kedah, Malaysia with acute pancreatitis from 2002 to 2004 were taken for this study. There were 29 males and 25 females. The 40–60 years age group was more commonly involved. The common factors associated with acute pancreatitis were alcohol intake in males and biliary disease in females. Two females suffered from acute pancreatitis following endoscopic retrograde cholangiopancreatography (ERCP). One of the 54 cases died due to multi-organ failure. (*JUNMEC 2008: 11(1) 18–21*)

KEYWORDS: Acute pancreatitis, alcohol intake, gall stones, serum amylase

Introduction

Acute pancreatitis (AP) is an uncommon disease encountered by a surgeon in the emergency room practice. Acute pancreatitis is usually a self-limiting disease caused by gallstones, alcohol intake, hyperlipidemia, or sometimes of unknown causes. However, it may progress to multiple organ failure due to the initiation of inflammatory mediators that have local and systemic effects (1). A careful review of the patient's history and appropriate laboratory studies can help the physician identify the etiology of the condition and guide management (2). The etiological factors are common conditions like alcohol intake and gall stone disease and rarely following ERCP and acute parotitis of viral origin (mumps). As the incidence of gall bladder disease is increasing, acute pancreatitis is also becoming more common. The etiology and clinical presentation of the disease are varied among Malays, Indians, Chinese and other races due to differences in cultural practices particularly related to alcohol consumption, and food habits. This study was undertaken to understand the demographic pattern, clinical presentation and outcome of AP cases in our hospital population. This was a retrospective study based on the clinical data collected from the hospital case records.

Patients and Methods

The study was conducted in Sungai Petani Hospital in the state of Kedah, Malaysia. It is a 300-bedded hospital catering to the population of Sungai Petani and surrounding villages. A total of 54 patients admitted consecutively from March 2002 to October 2004 with acute pancreatitis were taken for the study. There were 31 Malay patients, 21 Indian patients and two Thai patients; however, there were no Chinese patients in the study population. The history of recent alcohol consumption was elicited. Gall bladder disease was considered when ultrasonically demonstrable cholecystitis or gall stone was present. Most of them were presented with epigastric pain, vomiting and jaundice. The diagnosis of acute pancreatitis was based on the clinical symptoms and signs and also the laboratory values of serum amylase, urine amylase,

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diastase, LDH and ultra sonogram features. The diagnostic values were as follows: serum amylase more than 800 units, urine diastase more than 800 units, LDH more than 600 u/l. Ultrasonogram was done for all the patients and the presence of pancreatic edema, peripancreatic fluid collection, and pancreatic necrosis were noticed in some patients. All the patients were advised to undergo computer tomography of the abdomen. However, only 10 patients reported back and in all of them the findings confirmed the ultra-sonographic features.

Results

The incidence of acute pancreatitis by age and gender is shown in Table 1. The etiological factors for acute pancreatitis are listed in Table 2. Out of 54 patients admitted for acute pancreatitis, gall stone disease was observed in 17 patients. Alcohol consumption was noted in 18 cases. One patient was admitted for recurrent acute pancreatitis due to gall stone. A boy aged ten years suffered from acute pancreatitis due to mumps. Post-ERCP acute pancreatitis occurred in one female patient who had gall stones. Malays had more symptoms compared to Indians (Table 3). Serum enzymes like amylase and LDH and urine diastase were elevated more commonly in Malays than in Indians. Blood urea, sugar and total WBC count were elevated in Malays. Serum albumin and $P0_2$ were elevated more commonly in Malays than in Indians (Table 4).

Most of the patients were treated in the general ward while four patients required the use of the high dependency ward. Severe acutely ill patients (as per Ranson's score) were initially treated conservatively with antibiotics and intravenous fluids. There was one death due to multi-organ failure. Those patients having gall stones underwent elective cholecystectomy and three patients underwent ERCP and CBD stone removal and sphincterotomy. Four patients underwent laparotomy for either cystogastrostomy, removal of phlegmon or drainage of abscess.

Both local and systemic complications were more common in Malays. The local complications included pseudocyst of pancreas, pancreatic necrosis and peripancreatic collection, and the systemic complications recorded were pleural effusion, shock and sepsis (Table 5). One Malay lady aged 43 years died due to multi-organ failure.

Discussion

The incidence reported in literature varies from 21 to 283 cases per million population. In Japan, the reported estimate is that of 121 cases per million population. The disease may occur at any age, with a peak in the young male and the older female. The mortality has remained unaltered at 10-15% over the past 20 years. About one-third of patients die in the early phase of an attack from

Table 1. Age by sex incidence of acute pancreatitis.

Age group	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70 above	Total
Male	1	4	3	12	2	4	2	1	29
Female	1	2	1	8	9	3	1	0	25
Total	2	6	4	20	11	7	3	1	54

Table 2. Etiological factors of acute pancreatits.

Etiology	Malay	Indian	Total
Alcohol	1	17	18
Biliary disease	14	3	17
Viral	0	1	1
ERCP	2	0	2
Others	1	0	1
Unknown	13	0	13
Total	31	21	52

(Out of 2 Thai patients, one was due to alcohol intake; etiology was not known in the other)

Table 3. Clinical presentations of acute pancreatitis.

Clinical presentation	Malay	Indian
Shock	1	1
Epigastric pain	31	20
Abdominal distension	6	6
Vomiting	30	17
Fever	10	5
Jaundice	9	3

Table 4. Investigations of acute pancreatitis.

Investigations	Malay	Indian
Serum amylase >800 U/L	29	8
Urine diastase >800 U/L	30	14
Total WBC Count >15000	13	5
Blood Urea >16 mmols / L	4	0
$P0_2$ <60%mm/Hg	4	0
Serum Albumin>3.2 g/dl	10	2
LDH >600U/L	10	1
Serum Calcium <2mmols/L	12	2
Blood Sugar >10 mmols/L	10	5

Table 5. Complications of acute pancreatitis.

Complications	Malay	Indian
Respiratory	5	1
Cardiovascular	2	1
Infection/sepsis	3	1
Renal	4	1
DIVC(Disseminated intravascular coagulation)	1	0
Pancreatic pseudocyst	2	0
Pancreatic necrosis	6	2
Peri Pancreatic collection	7	2
Total	30	8

multiple organ failure, while deaths occurring after the first week of onset are due to infective complications. Eighty per cent of patients will have a mild attack of pancreatitis in which the mortality is around 1%, while in those who have a severe attack of pancreatitis, the mortality varies from 20 to 50% (3).

Out of 54 patients admitted for acute pancreatitis, gall stone disease was observed in 17 of them and alcohol consumption was noted in eighteen cases. One patient was admitted for recurrent acute pancreatitis due to gall stone. A boy aged ten years suffered from acute pancreatitis due to mumps. Post-ERCP acute pancreatitis occurred in one female patient who also had gall stones. In other patients, the etiology could not be found.

It has been reported that biliary disease and alcohol consumption account for 80% of cases (4). In Indians, the history of alcohol consumption was 81% in our study. Recent reports suggest alcohol consumption as the most common etiological factor but in Malaysia, alcohol consumption is not practised among Malays due to religious reasons. It was further reported that alcohol-related pancreatitis was particularly excessive among the Indians and was observed in 73.3% of their cases (15). It is an established fact that alcohol dependence is higher among Indians when compared to the other races in the country (6, 7, 8).

In our study, the incidence of gall stone was 1.4% in Indians and 41% in Malays. In a study by Frey *et al* (9) 32.6% had biliary tract disease alone, 20.3% had alcohol abuse alone, and 36.6% were idiopathic. In our study, it was found that both alcohol and biliary disease were equally significant causative factors for producing acute pancreatitis. However, alcohol intake was common in Indian patients where as biliary disease in Malays. One pregnant woman suffered from acute pancreatitis. One child developed acute pancreatitis due to mumps.

In Europe and other developed nations, such as Hong Kong, more patients tend to have gallstone pancreatitis, whereas in the United States, alcoholic induced pancreatitis is more common (10). Since Malaysia has a multi-ethnic population, both alcohol and gall stones are equally important causes.

Malays are more symptomatic in having a higher incidence of vomiting, epigastric pain and abdominal distension than Indians. The serum enzymes, blood urea and blood sugar were elevated more frequently in Malays. Similarly, the complication rate was also higher in Malays. One Malay patient died as a result of multi-organ failure. Severe acute pancreatitis (SAP), a multi-system disease, is characterized by multiple organ system failure and additionally by local pancreatic complications such as necrosis, abscess or pseudocyst (11).

Biliary disease is known to be a chronic process, which can be complicated by infection leading to severe problems. This fact probably explains our observation that AP becomes severe and complicated in Malays. Excessive alcohol intake is an acute insult to pancreas and AP due to alcohol can be better managed without serious complications. Hence, Indian patients showed better prognosis with lesser complications.

There were no Chinese patients in this study. We presume that they might have been admitted to private hospitals. There were two Thai nationals as the state of Kedah, Malaysia, is nearer to the Malaysian-Thai border.

Conclusion

Our study highlights the striking differences in the etiological factors for acute pancreatitis among the two different ethnic groups in Malaysia. This is most likely due to the differences in alcohol consumption among the ethnic groups. The clinical features and complications were found to be more severe in Malays as compared to Indians.

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References

1. Rahhal A. Management of acute pancreatitis: An outcome study. *Internet J Surg 2005*; 6(2): 1528–8242/website http://www.ispub.com/ostia/index.php?xmlFilePath=journals/ijs/vol6n2/pancreatitis.xml.
2. Munoz A, Katerndahl DA. Diagnosis and management of acute pancreatitis: Brief article. Am Fam Physician July 2000, website: http://www.aafp.org/afp/20000701/164.html
3. Russell RCG. *The Pancreas*. In: Bailey & Love's Short Practice of Surgery 23rd ed. London: Hodder Arnold; 2000.
4. Mergener K, Baillie J. Fortnightly review: Acute pancreatitis. *BMJ 1998*; 316:44–48.
5. Kandasami P, Harunarashid H, Kaur H. Acute pancreatitis in a multi-ethnic population. *Singapore Med J 2002*; 43(6):284–288.
6. Saroja KI, Kyaw O. Pattern of alcoholism in the General Hospital, Kuala Lumpur. *Med J Malaysia 1993*; 48(2):129–134.
7. Alcohol—A National Hazard. The Consumers Association of Penang, Penang: *CAP, Bulletin*; 1988
8. Hughes K, Yeo PP, Lun KC, *et al*. Alcohol consumption in Chinese, Malays and Indians in Singapore. *Ann Acad Med Singapore* 1990; 19(3):330–32.
9. Frey C, Zhou H, Harvey, D, *et al. Pancreas 2006*; 33(4):336–44.
10. Gardner TB, Berk BS, Yakshe P. Pancreatitis, Acute e-Medicine. 2006. Website: http://www.emedicine.com/MED/yopic1720.htm
11. Pitchumoni CS, Patel NM, Shah P. Factors influencing mortality in acute pancreatitis: Can we alter them? *J Clin Gastroenterol 2005*; 39(9): 798–814.

ROAD TRAFFIC INJURIES AMONG PATIENTS WHO ATTENDED THE ACCIDENT AND EMERGENCY UNIT OF THE UNIVERSITY OF MALAYA MEDICAL CENTRE, KUALA LUMPUR

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ABSTRACT:
A retrospective cross-sectional study of injury patients who attended the Accident and Emergency Unit was conducted at the University of Malaya Medical Centre. Demographic data with regards to age, sex, race, occupation and the relevant data such as type of accident, type of injury sustained and also severity seen during the month of January 2005 were selected retrospectively from medical record. The objectives were to review road traffic accidents and their severity of injuries among the patients. There were two hundred and forty-three (197 males and 46 females) patients involved: 60% Malays, 16% Chinese, 21% Indians and 3% other ethnic groups. Peak accidents occurred among the 21 to 30 years age group. Among the type of accidents, 65.8% involved motorbike riders, 10.3% car drivers, 8.6% pillion riders, 7.8% car passengers, 5.8% pedestrians and 1.6% were bicycle rider injuries. About 57.6% sustained minor injuries and 42.4% major injuries. There was no significant association between outcome of road traffic accidents and sex, age group and race. However, there was a significant association between type of accidents and severity of injuries ($p = 0.014$). Males sustained more major injuries and motorbike accidents were the highest among road injuries. Therefore, further prevention and control with emphasis on behavioural changes, education and law enforcement may reduce the number of road traffic accidents in the future. (*JUNMEC 2008; 11(1) 22–26*)

KEYWORDS: Road traffic injuries, road traffic crashes, disability adjusted life years

Introduction

Road traffic accident injuries, one of the most common injuries sustained from a road traffic crash, are defined as fatal or non-fatal injuries incurred as the result of road traffic crashes. The crash is defined as a collision or incidence that may or may not lead to injury, occurring on a public road and involving at least one moving vehicle (1).

With over millions of people killed every year on the world's roads, and ten million more injured, road traffic crashes are one of the leading causes of death and the ninth leading cause of disability adjusted life years (DALYs) lost worldwide (2). In the year 2002, nearly 1.2 million people worldwide died as a result of road traffic crashes. This represents an average of 3,242 persons dying each day around the world. In addition to these deaths, between 20 and 50 million people globally are estimated to be injured or disabled every year (1). In America, it has become the single greatest killer between the age of one and 44 years (2)

There are several types of road traffic accidents which include motor vehicle accidents involving drivers, motorcyclists, pillion riders and passengers in the car, cyclists and pedestrians. In Malaysia, cars are most commonly involved, followed by motorcycles, lorries and vans (3). According to the Ministry of Health (MOH), injuries including road traffic accidents are the third cause of admission and fifth cause of death in Malaysian government hospitals and clinics (4). According to statistics produced by the Malaysian Road Safety Council, there are fourteen causes of road

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accident in Malaysia. The common causes are speeding (32.8%), careless driving (28.2%) and careless overtaking (15.1%). It showed that the driver's behaviour is the main cause of road accidents, contributing to 76.1% of all the causes of road accidents. Other factors are tailgating (driving too closely behind another vehicle) (3.8%) and road condition (3%) (5).

The objective of this study is to have an overview of the road traffic users involved in road traffic accidents and patients attended to at the Accident and Emergency Unit of the University of Malaya Medical Centre (UMMC) in January 2005. It is also aimed at identifying the socio-demographic characteristics of patients, description of the types of road traffic accidents and injuries, and the severity of outcome for further prevention and control.

Material and Methods

A retrospective cross-sectional study on patients who were attended to at the Accident and Emergency Unit of the University of Malaya Medical Centre (UMMC) due to road traffic accident injuries was conducted based on case records of their injury status and other information. This involves the patients who came to casualty before the Trauma Centre was opened at this tertiary level hospital in Malaysia. Permission to conduct this study was obtained from the relevant hospital authorities. All records of patients seen in the Emergency Department for road traffic injuries from 1 to 31 January 2005 were selected for this study.

From the registration number, the records were traced at the Medical Record Department of UMMC. The demographic data with regard to age, sex, race, occupation and other relevant data such as the types of accidents, types of injuries by the patients and also the severity of outcome were obtained retrospectively. There were 250 cases identified originally. However, seven cases were excluded because the records could not be traced. Finally, 243 subjects were included comprising 142 Malays, 39 Chinese, 52 Indians and 7 from other ethnic groups. All the data was processed and analysed by appropriate statistical tests using SPSS software.

Results

Among 243 patients, 157 (64.6%) registered their occupation while 86 (35.4%) did not. Of the registered workers, 22 (9.1%) were professionals, 6 (2.5%) were skilled workers, 9 (3.7%) were semi-skilled workers, 14 (5.8%) were unskilled workers and 17 (7.0%) were housewives. The largest proportion of registered patients was students 89 (36.6%). (Table 1).

Table 1. Distribution of occupations of accident victims

Occupation		Frequency (%)
Registered	Professional	22 (9.1%)
	Skilled worker	6 (2.5%)
	Semiskilled worker	9 (3.7%)
	Unskilled worker	14 (5.8%)
	Housewife	17 (7.0%)
	Student	89 (36.6%)
Not registered		86 (35.4%)
Total		**243 (100%)**

Not registered = not mentioned in the registration card.

Table 2. Mode of transport among patients in January 2005

Type of accident	Frequency	Percentage
Car (driver)	25	10.3
Car (passenger)	19	7.8
Motorbike (rider)	160	65.8
Pillion rider	21	8.6
Bicycle (rider)	4	1.6
Pedestrian	14	5.8
Total	**243**	**100**

Table 3. Severity of injuries sustained during accidents by sex

	Severity of injury		
Gender	**Minor**	**Major**	**Total**
Male	112 (57)	85 (43)	197
Female	28 (61)	18 (39)	46
Total	**140 (57.6%)**	**103 (42.4%)**	**243**

Table 2 shows the type of road traffic accidents that happened in January 2005, with accidents involving motorbike riders registering the highest number (65.8%), followed by car drivers (10.3%), pillion riders (8.6%), car passengers (7.8%), pedestrians (5.8%) and bicycle riders (1.6%).

Regarding severity of injuries sustained in January 2005, the majority of the patients were treated in the casualty and discharged and considered as minor injuries

Table 4. Severity of injuries sustained during road traffic accident by age groups

	Severity of injury		
Age group	**Minor**	**Major**	**Total**
Young 1–20 yrs old	40 (58)	29 (42)	69
Adult 21–50 yrs old	99 (59)	69 (41)	168
Elderly > 50 yrs old	1 (16.7)	5 (83.3)	6
Total	**140 (57.6)**	**103 (42.4)**	**243**

(140, 57.6%). The remaining had to be admitted to the wards for further treatment and only one patient died. These were considered as major injuries (103, 42.4%) (Table 3).

Severity of the road traffic injuries among patients was compared by gender. Of the 197 males, 112 had minor and 85 had major injuries. As for the 46 female patients, 28 of them had minor and the remaining 18 experienced major injuries (Table 3). However, statistical analysis did not show any significant difference between the sex of the patients and the severity of the road traffic injuries (χ^2 = 0.246, df = 1, p = 0.62).

Severity of the road traffic injuries was compared by the age groups. Among them, the majority (59%) occurred in the adult age group 18–60 years old with minor injuries. Out of 69 patients from the young age group, 40 (58%) experienced minor while the other 29 (42%) patients sustained major injuries. There were elderly patients with one minor injury while five had major injuries. The differences in severity of the road traffic injuries by age group were not significant (χ^2 = 4.242, df = 2, p = 0.12) (Table 4).

Table 5. Severity of injuries sustained by ethnicity

	Severity of injury		
Age group	**Minor**	**Major**	**Total**
Malay	80 (55.2)	65 (44.8)	145
Chinese	24 (61.5)	15 (38.5)	39
Indian	31 (59.6)	21 (40.4)	52
Others	5 (71.4)	2 (28.6)	7
Total	**140 (57.6)**	**103 (42.4)**	**243**

Others = Bangladeshi, Vietnamese and Caucasian. (p = 0.745).

Table 6. Severity of injuries sustained in road traffic accidents by type of accidents

	Severity of injury		
Age group	**Minor**	**Major**	**Total**
Car	33 (75)	11 (25)	44
Motorbike	101 (55.8)	80 (44.2)	181
Bicycle	2 (50)	2 (50)	4
Pedestrian	4 (28.6)	10 (71.4)	14
Total	**140 (57.6)**	**103 (42.4)**	**243**

Car = Car driver and car passenger,
Motorbike = Motorbike rider and pillion rider. (p = 0.014)

Severity of the road traffic injuries among patients were compared by ethnicity. Out of 243 patients, 145 were Malays. Among Malays, 80 (55.2%) had minor while 65 (44.8%) had major injuries. Among the 39 Chinese, 24 patients had minor and 15 patients had major injuries. Among the 52 Indians, 31 of them had minor and the remaining 21 had major injuries. Among the other ethnic groups, five patients had minor and two patients had major injuries. There was no significant difference between races and the severity of the road traffic injuries (χ^2 = 1.232, df = 3, p = 0.745) (Table 5).

Severity of the road traffic injuries were compared with the modes of transports. Of all the patients, the majority numbering 181 involved motorbikes. Among them, 101 (55.8%) cases had minor, while 80 (44.2%) had major injuries. This was followed by car with 44 cases. Among them, 33 had minor while 11 had major injuries. Accident involving bicycles comprised two patients with minor and two patients with major injuries. On the other hand, 4 of the pedestrians had minor and the remaining 10 sustained major injuries. The findings were shown in Table 6 and statistical analysis showed that there was significant difference between the type of transport and the severity of injuries (χ^2 = 10.620, df = 3, p = 0.014).

Discussion

This study shows that most of the road traffic injuries occurred in the age group between 21 to 30 years, followed by 11 to 20 years. A national study done in 1996 reported that majority of road injuries occurred among 10 to 19 years followed by 20 to 29 years. Deaths are more common among the young adults and adolescents (6). A report by the Royal Malaysian Police showed that the majority of the road traffic accidents

were among adolescents aged between 16 to 20 years (3). This could be because the adolescents and young adults were major road users and thus prone to get injuries. There is also limited information on safety practices particularly among adolescents, in this country. This represents a great loss in the productivity among the young adult age group.

This study also revealed that most patients who attended the Accident and Emergency Unit due to road traffic accidents sustained minor injuries. Most of them had soft tissue injuries, multiple abrasion and minor lacerations. However, the figures did not show much difference between minor and major injuries. This might be because of short study period. The cases were not enough to reveal the true picture of road injuries in the area.

In almost one third of patients, the occupation was not known. One of the reasons could be because some patients were brought in by passer-by who did not know about the patients. It could also arise from incomplete data collection at the registration counter of Accident and Emergency Unit. Proper investigation and follow up are needed to overcome these problems.

There was a significant association between the mode of transport and the severity of road traffic injuries. Accidents involving motorbikes gave the largest proportion of all types of accidents. This could be due to a higher risk factor for those who ride motorcycles compared to other road users. Many motorcyclists do not use the correct lane for the motorcycles. They tend to ride the main road and weave between cars. Furthermore, young adults nowadays like to race and ride their motorcycles at high speed. This makes them more prone to accidents. Some of the motorcyclists were still students who were under age and some of them did not have driving licences. Therefore, they lacked driving skills and experience that led them to sustain more injuries. For those who were involved with car accidents, the majority (75%) of them sustained minor injuries, but the rest sustained major injuries. The reason for this could be due to the improper or lack of use of seat belts. Seat belt effectively reduces serious injuries and death. A study done in US showed that teenage drivers and front seat passengers were likely to use seat belts compared with the older drivers (7). Another study done in New Zealand reported the seat belt usage among drivers were 91%, front seat passenger 93% and rear seat passenger 40%. However, some of the car users still refused to use seat belts. The reasons given for not using seat belt were driving for short distance, forgetfulness and were in a hurry. The other reason was 'not in a habit' (8). This could contribute to major injuries sustained.

In this study, it was noted that few cyclists were involved in accidents. Perhaps it is because only a small number of people use bicycles nowadays, especially in the cities like Kuala Lumpur, and they usually do not cycle on the main road. The majorities of them use bicycle for recreational activities and exercise. Pedestrians appeared to sustain major injuries. This might be because of being unprotected. Some pedestrians involved were not at fault.

There are some limitations to consider in this study. This study was done in UMMC only and similar cases from other hospitals were not included. The cases were very limited because of the short study period. Furthermore, some of the records were not available being misplaced in other area e.g. other clinics, or unable to find during the study period. In addition, the author should categorically stress on the quality of data based on the secondary data which warrants cautious interpretation including missing information and other required information not available in such data. Further information is needed to assess the outcome of the patients who survived after road traffic injuries and discharged from the UMMC.

Conclusion

This study describes types of road traffic injuries among patients who attended the Accident and Emergency Unit at UMMC in January 2005. There was a significant association between severities of injuries with types of road traffic accidents. However, there were no significant association between the outcome with sex, age and ethnicity. Many parties should play their roles in reducing the road traffic accidents and injuries. Parents can help to reduce road traffic accidents as they determine when their children are ready to get a driving license and what vehicle they can drive. Schools have a role to play by emphasising the importance of road safety, like the use of seat belts and proper driving practices to the adolescents and young adults as they will eventually become road users. Prevention and control with emphasis on behavioural changes, education and law enforcement may reduce the number of road accidents in the future.

Acknowledgements

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References

1. World Health Organization. Report on injuries and violence prevention: Road traffic injuries. Geneva: WHO; 2002.
2. Binder S, Runge, JW. Road Safety and Public Health: A US perspective and the global change. *Traff Injury Prev* 2002; 7:3-9.
3. Royal Malaysian Police. Statistical report road accident Malaysia 2002. Bukit Aman, Kuala Lumpur: Traffic Police Headquarters; 2002.
4. Ministry of Health Malaysia. Department of Public Health. Annual Report; 2004.
5. Suret S. Road safety issues in Malaysia. Symposium on Road Safety. Road Safety Department. Ministry of Transport Malaysia; 2001.
6. Ministry of Health Malaysia. Epidemiology of injury in Malaysia. Injury Prevention and Control Unit, Disease Control Division, Public Health Department, Ministry of Health Malaysia; 1997.
7. Presser DF, Williams AF, Lund AK. The effect of New York's seat belt use law on teenage drivers. *Acc Anal Prev* 1987; 19:73-80.
8. Begg DJ, Langley JL. Seat-belt use and related behaviours among young adults. *J Safety Res* 2000; 4: 211-20.

CHRONIC MYELOID LEUKAEMIA PRESENTING AS PRIAPISM – HOW SHOULD WE TREAT THESE?

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ABSTRACT: Priapism is a urological emergency. The treatment for ischaemic priapism is usually cavernosal aspiration with or without cavernosal irrigation. Some patients may need surgical intervention -the various shunt procedures. We report a 21-year-old man with priapism secondary to chronic myeloid leukemia who needed a combined medical and surgical management. He underwent a spongio-cavernosal shunt as well as cytoreductive chemotherapy to achieve complete detumescence. Therefore, cytoreductive chemotherapy is an adjunct in difficult to treat priapism associated with chronic myeloid leukemia. *(JUMMEC 2008; 11(1):27–29)*

KEYWORDS: Priapism, chronic myeloid leukemia, combined medical and surgical management, cytoreductive chemotherapy

Case Report

A 21-year-old Chinese man was presented with a 72-hour history of priapism. There was no history of drug use, recent trauma or history of haematological disorders. Cavernosal aspiration done revealed very dark blood, unfortunately blood gas was not obtained. Numerous cavernosal aspirations was done but detumescence was not achievable. He subsequently underwent surgical decompression (Spongiocavernous or Winter's shunt) under general anaesthesia. Despite the shunt, he had partial tumescense (Figure 1).

Clinically, he had splenomegaly and his blood investigations were abnormal: the full blood count revealed a white count of 619 × 10^9/L and a haemoglobin level of 74 g/L. He was referred to the haematologist and subsequently, diagnosed as having a chronic myeloid leukaemia.

He was then treated with cytoreductive therapy with hydroxyurea and the white cell count drastically fell. With these combined approach, he achieved complete detumescence (Figure 2). As expected, due to the long delay in seeking treatment, the patient has subsequently developed erectile dysfunction.

Discussion

The main aim of treating ischaemic priapism aggressively is to prevent erectile dysfunction and corporsal fibrosis. The American Urological Association has given a comprehensive general guideline (1) for the treatment of ischaemic priapism. We hope to add to this body of knowledge by illustrating our case. Our case illustrates the need for a combined medical-surgical approach in treating priapism in patients with haematological malignancy, in this case chronic myeloid leukaemia. Our patient underwent corporal aspiration and Winter's Shunt and achieved partial detumescence. Other surgical methods for achieving detumescence are Al Ghorab shunt and the sapheno-cavernous shunt. These shunts have varying results and technically Winter's shunt is the easiest.

Aspiration and corporal lavage with alpha-1 adrenergic agonist such as methoxamine (3) has been reported to be useful in patients with chronic myeloid leukaemia. Other drugs such as adrenaline or phenylephrine could also be used and the latter is the drug of choice.

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Figure 1. Picture of the penis following Winter's Shunt

Figure 1. Picture of the penis about 2 weeks later following cytoreductive chemotherapy

Duration of priapism is an important factor in determining if corporal fibrosis would occur. Generally, the risk of corporal fibrosis is about 60% when the duration of priapism is more than 48 hours (4, 5). Our patient presented late (72 hours) and achieved only partial detumescence with corporal aspiration and Winter's shunt, we, therefore, opted for medical treatment, that is, cytoreductive chemotherapy to achieved complete detumescence. For more rapid treatment, if the duration of priapism is less than 48 hours, leukapheresis is an option. (The duration of less than 48 hours is purely arbitary as studies (4, 5) have quoted a high risk of corporal fibrosis, as noted above). Leukapheresis results (instead of hydroxyurea) in prompt reduction of the white count to reduce viscosity and achieve detumescence after failed corporal aspiration (6).

Conclusion

Cytoreductive chemotherapy is an adjunct in difficult to treat priapism associated with chronic myeloid leukaemia.

References

1. Montague DK, Jarow J, Broderick GA, *et al*. American Urological Association Guideline on the management of priapism. *J Urol* 2003; 170:1318-24.
2. Chang MW, Tang CC, Chang SS, *et al*. Priapism – A rare presentation in chronic myeloid leukemia: case report and review of the literature. *Chang Gung Med J* 2003; 26: 288-92.
3. Cruz Guerra NA, Ramos LC, Linares Quevado A, *et al*. Priapism secondary to chronic myeloid leukemia: value of initial treatment with cavernous lavage plus adjuvant methoxamine. *Arch Esp Urol* 2002; 55(3):320–321.
4. El-Bahnasawy MS, Dawood A, Farouk A, *et al*. Low-flow priapism: risk factors for erectile dysfunction. BJU Int 2002; 89(3): 285–290.
5. Kulmala RV and Tamella TL. Effects of priapism lasting 24 hours or longer caused by intracavernosal injection of vasoactive drugs. *Int J Impot Res* 1995; 7(2): 131–136.
6. Ponniah A, Brown CT, Taylor P, *et al*. Priapism secondary to leukemia: effective management with prompt leukapheresis. *Int J Urol* 2004; 11(9): 809–810.

SUDDEN VISUAL LOSS IN ACUTE LEUKAEMIA

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ABSTRACT: The presenting signs of acute leukaemia occur as a result of bone marrow failure and organ infiltration. Increased bleeding tendencies are seen on the skin, gums and mucosal lining. Bleeding in the posterior segment of the eye, namely the retina and vitreous, may occur, but do not usually cause any visual disturbances. This case demonstrates visual loss as a result of premacular subhyaloid haemorrhage in acute leukaemia. *(JUMMEC 2008; 11(1): 30–32)*

KEYWORDS: Sudden visual loss, subhyaloid haemorrhage, acute leukaemia

Case Report

An Nd:YAG posterior hyaloidotomy was given on two separate occasions to the right submacular haemorrrhage, but failed to drain the blood effectively into the vitreous cavity. Despite this, her right vision improved to 1/60. She was commenced on high-risk UK ALL protocol regime with minimal other complications, and achieved complete remission a month later. The retinal haemorrhages in the left eye were absorbed within six weeks, while the right dense subhyaloid haemorrhage took about four months to completely resolve. Her best corrected vision on right eye steadily improved to 6/9, while vision on her left eye was never affected.

Discussion

Subhyaloid haemorrhage is defined by its location between the vitreous and the retina. Separation of vitreous from the retina by a collection of blood in the macula region, otherwise known as premacular subhyaloid haemorrhage, may cause sudden loss of vision. Aetiologies include proliferative diabetic retinopathy, retinal venous occlusion, rupture of retinal macroaneurysms, valsalva retinopathy and hematological malignancies. Rennie and colleagues reported that resolution of premacular subhyaloid haemorrhage may occur from 3 to 18 months, depending on the aetiology (1). In this case, submacular haemorrhage most likely occurred following bouts of non-productive cough in this patient with bleeding tendencies secondary to thrombocytopenia. Reddy and Jackson reported a significant association between intraretinal haemorrhages and thrombocytopenia in patients with acute lymphablastic leukaemia (ALL) (2). In their study, approximately half of the patients with ALL have retinal manifestations, of which intraretinal haemorrhages and white-centred haemorrhages were the most common. In their earlier study, Reddy and colleagues had demonstrated that the presence of intraretinal haemorrhage was a poor prognostic factor for survival in acute leukaemia (3).

Haemorrhages occurring in the macula lead to visual disturbance, and may cause visual loss if the size of bleed is large. Different techniques have been described to treat premacular haemorrhages. Among these are pars plana vitrectomy (4), intravitreal injection of gas and tissue plasminogen activator (5), and laser posterior hyaloidotomy. Puncturing the posterior hyaloid face with Nd:YAG provides a safe, yet non-invasive and effective treatment (6). This method was first described by Faulborn in 1988 for an eye with diabetic retinopathy (7). Nili-Ahmadabadi and colleagues reported a 100% success rate with this method, with best improvement noted in patients with Valsalva retinopathy (6, 8). Complications are uncommon, and include macular hole and retinal detachment (8).

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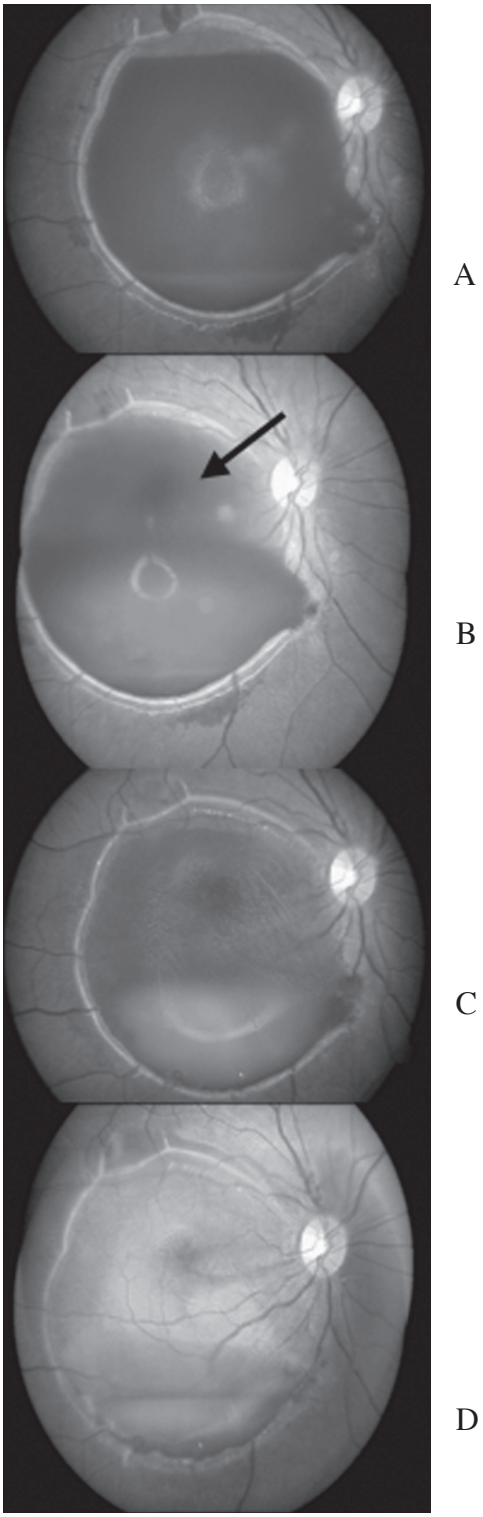

Figure 1. Serial photographs of the right fundus. A. A fresh premacular subhyaloid haemorrhage on presentation with visual acuity of couting fingers. A denser level of blood clot was seen as the inferior aspect. B. Partial clearing of the haemorrhage with visualization of the macula (arrow) immediately after posterior hyaloidotomy with Nd:YAG laser performed four days later. C. Slow resolution with formation of blood clot two months later. D. There was almost complete absorption of the blood clot three months after presentation.

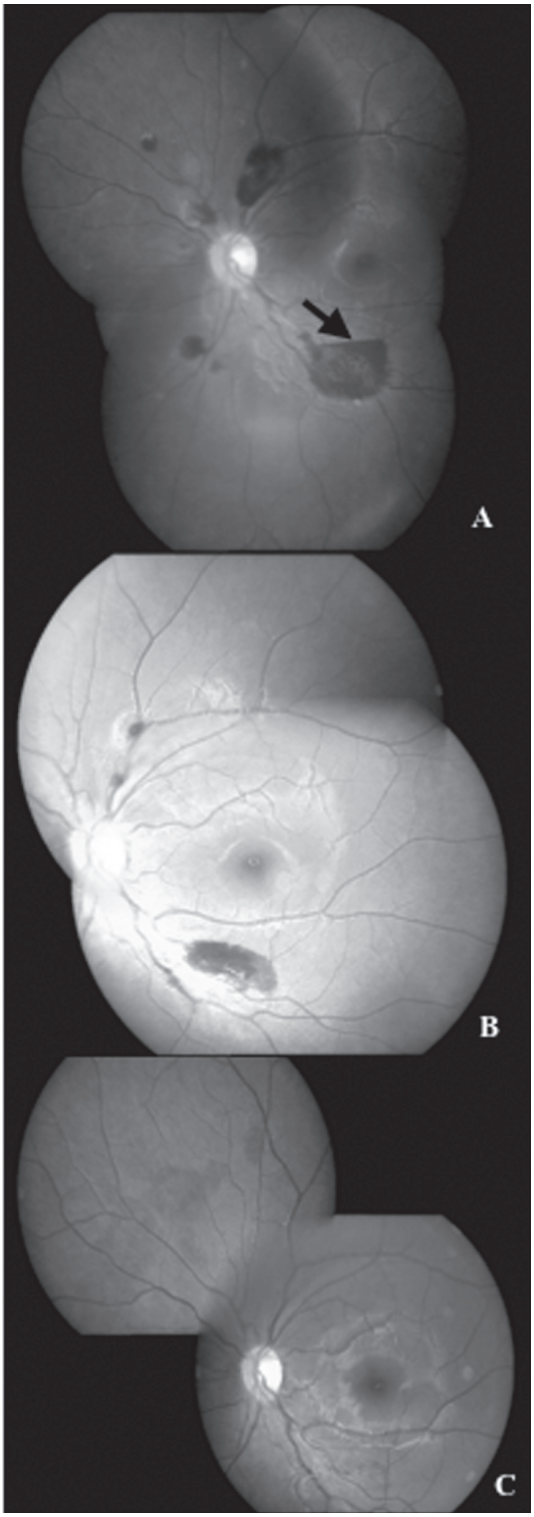

Figure 2. Serial photographs of the left fundus. A. On presentation, there were multiple intraretinal haemeorrhages with a small area of subhyloaid haemorrhage (arrow) inferotemporal to the macula. Fovea was spared and visual acuity was 6/6. B. Two weeks later, the subhyaloid haemorrhage was absorbed leaving residual retinal haemorrhage. C. Complete resolution of retinal haemorrhages occurs about six weeks after presentation.

In summary, this case illustrates visual loss as part of the presenting symptoms of acute leukaemia, caused by premacular subhyaloid haemorrhage. Laser posterior hyaloidotomy provides a good and safe alternative mode of treatment.

Acknowledgements

The authors would like to thank Cik Faizah Othman from the Ophthalmology Clinic, University of Malaya Medical Centre, for providing the fundus photographs.

References

1. Rennie CA, Newman DK, Snead MP, *et al*. Nd-YAG laser treatment for premacular submacular haemorrhage. *Eye* 2001; 15:519–524.
2. Reddy SC, Jackson N. Retinopathy in acute leukaemia at initial diagnosis: correlation of fundus lesions and haematological parameters. *Acta Ophthalmol Scand* 2004; 82:81–85.
3. Reddy SC, Quah SH, Low HC, *et al*. Prognostic significance of retinopaty at presentation in adult acute leukaemia. *Ann Hematol* 1998; 76:15–18.
4. O'Hanley GP, Canny CL. Diabetic dense premacular hemorrhage. A possible indication of prompt vitrectomy. *Ophthalmology* 1985; 92:507–511.
5. Conway MD, Peyman GA, Recasens M. Intravitreal tPA and SF6 promote clearing of premacular subhyaloid hemorrhages in shaken and battered baby syndrome. *Ophthalmic Surg Lasers* 1999; 30:435–441.
6. Nili-Ahmadabadi M, Lashay A-R, Karkhaneh R, *et al*. Nd-YAG laser application in premacular subhyalod hemorrhage. *Arch Iranian Med* 2004; 7(3):206–209.
7. Faulborn J. Behandlung einer diabetischen premaculaeren Blutung mit dem Q-switched Neodym: YAG laser. *Spektrum Augenheilkd* 1988; 2:33-35.
8. Ulbig MW, Mangouritsas G, Hermann-Rothbacher H, *et al*. Long-term results after drainage of premacular subhyaloid hemorrhage into the vitreous with a pulsed Nd:YAG laser. *Arch Ophthalmol* 1998; 116:1465-469.

ANTEROLATERAL THIGH FREE FLAP IN RECONSTRUCTION OF ORAL CAVITY MALIGNANCY: UMMC EXPERIENCE

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ABSTRACT: : Oral cavity malignancy reconstructive surgery has advanced from pedicle flaps to microvascular free tissue transfer. Previously, reconstruction of these defects were done using radial forearm free flap in this centre. We report our experience using anterolateral thigh free flap in a 49 year old lady with squamous cell carcinoma of the tongue. Excision of tumour left a defect which was later reconstructed using microvascular free tissue transfer using the right anterolateral thigh free flap. The flap was well taken up at the recepient site and no evidence of flap failure noted post operatively and on completion of radiotherapy. She was able to maintain comprehensible speech and swallowing ability. (*JUNMEC 28; 11(1): 33–36*)

KEYWORDS: Anterolateral thigh free flap, head and neck reconstructive surgery

Introduction

Oral cavity malignancy has been difficult to manage in the past with regards to closure of defect post oncological resection, which requires a large surgical margin within the small confines of the head and neck region. Recent advances using free tissue transfer has revolutionized the surgical management of such cancers. We would like to highlight the use of the anterolateral thigh free flap, where this was the first successful case to be done in our centre.

Case Report

A 49-year-old lady was referred from Seremban to the University of Malaya Medical Centre (UMMC) with a non-healing ulcer on the left side of the tongue of six months duration. The ulcer was painful, especially during eating. It gradually increased in size. She did not recall having a whitish patch on her tongue before the onset of the ulcer. She denied chewing betel nut and smoking.

Examination revealed an ulcer on the left lateral border of the tongue measuring 4 cm at the widest diameter. It was foul smelling. Surrounding margin was indurated and extended to the floor of the mouth. Tongue movement was restricted. No cervical lymph node was palpable.

Incision biopsy of the lesion revealed a moderately differentiated squamous cell carcinoma. On Computed Tomography scan, it was noted that the tumour was at the left lateral border of the tongue approaching midline but not crossing the raphe of tongue. There were also multiple cervical lymph nodes of varying sizes: left Level I – 5mm, left level II – 8 to 10 mm and bilateral Level III shotty lymph nodes.

Clinically though, she was staged as T4N0Mx. She was then planned for left hemiglossectomy, lingual corticotomy of left mandible, left radical neck dissection, right supraomohyoid neck dissection and tracheostomy to be done by the Otorhinolaryngology and Oral Maxillofacial Surgery teams. As the defect post-hemiglossectomy was not suitable for primary closure, decision for flap reconstruction was made. Referral was made to the Plastic Surgery team and she was worked up for free flap reconstruction using anterolateral thigh free flap.

Intraoperatively, the ulcer base was noted to extend inferiorly towards the hyoid bone in the midline. It was

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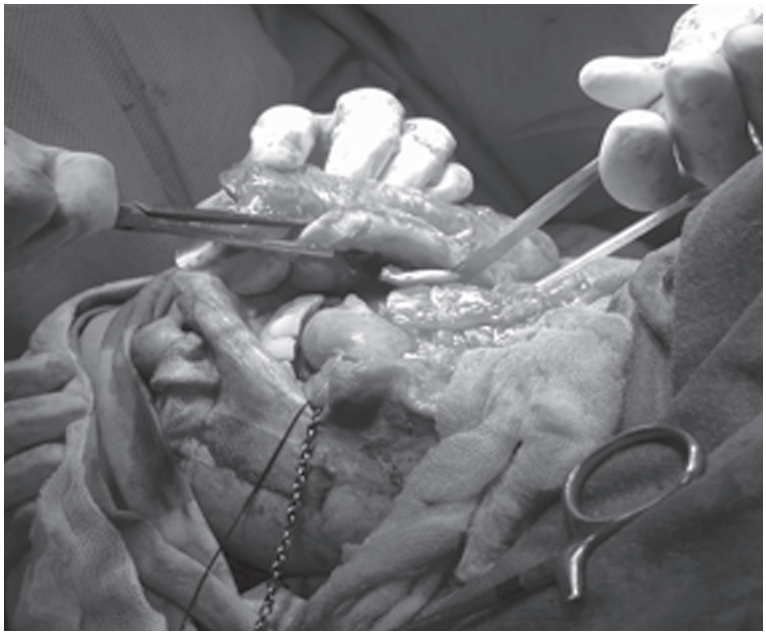

Figure 1. Access for tumor excision via mandibular split

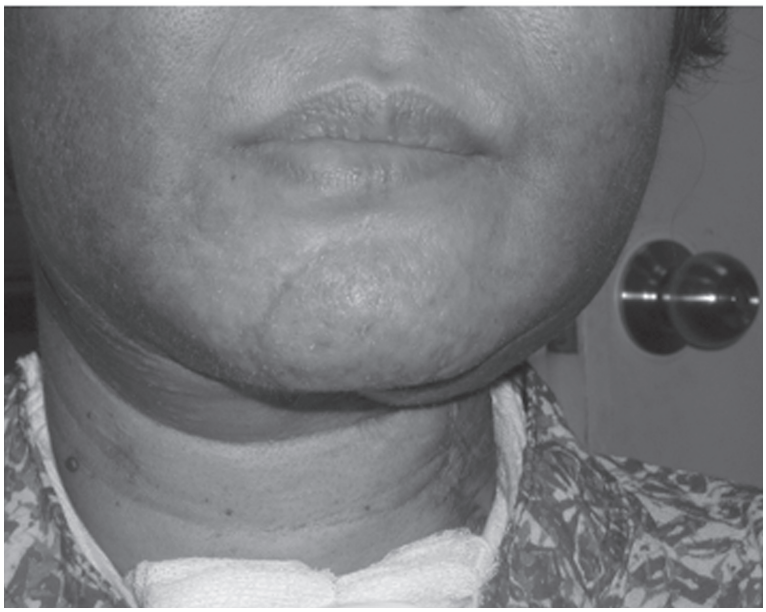

Figure 2. Neck scar after 20 fractions of radiotherapy

excised with a 2 cm margin (Figure 1). Only ¼ of the right tongue remained post excision. Neck dissection was done and the anterior jugular vein was preserved for anastamosis of flap. Simultaneously, harvesting of flap from the right thigh was done.

The flap was inserted intraorally to cover the left tongue defect medially. The remaining part of the flap was laid laterally to cover the buccal mucosa overlying the left mandible. Subcutaneous tissue from the flap was trimmed minimally to fit the defect. It was left slightly bulky to allow post-operative atrophy and further shrinkage post-radiotherapy.

The artery supplying the flap was anastamosed end-to-end with the left superior thyroid artery under microscopy. Ischaemic time from flap elevation was 1 hour 50 minutes. Subsequently single vein end-to-end anastamosis was performed using a tributary of the anterior jugular vein. The flap was viable at the end of the procedure. The donor site defect was closed primarily.

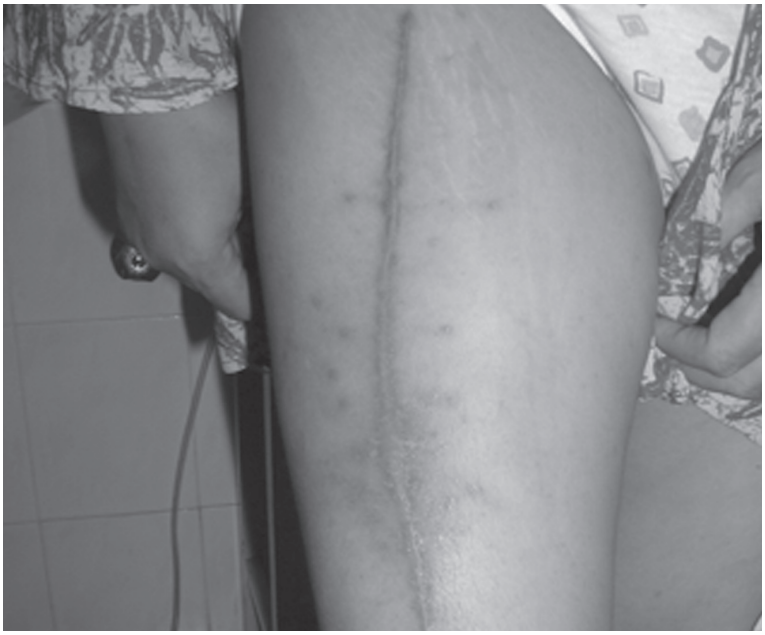

Figure 3. Donor scar on the right thigh

Figure 4. Dissection scaron on left side of neck

She recovered very well post-operatively. She was put on subcutaneous heparin for three days and covered with intravenous cefuroxime and metronidazole. Post-operative histopathological examination correlated with the initial biopsy which was moderately differentiated squamous cell carcinoma. All surgical margins were clear and no malignancy noted on the cervical lymph nodes. Tracheostomy and gastrostomy feeding was maintained until radiotherapy was commenced and completed (Figure 2).

She did not show any evidence of residual tumour. There was no evidence of breakdown or gap noted on her tongue. It had adequate mobility and she had adapted her speech to be mostly comprehensible. No regurgitation was noted. She was able to walk well with no significant complaint regarding her donor site on the right thigh (Figure 3). The neck did not show evidence of recurrence (Figure 4). Her only complaint was trismus, attributed to radiotherapy.

Discussion

Head and neck malignancy has taken a leap forward in its management with the advent of free tissue transfer. Previously, relying on pedicled flaps from deltopectoral and pectoralis major, we have moved on to free flaps for reconstruction. This was the first successful reconstruction using the anterolateral thigh (ALT) flap in the University of Malaya Medical Centre.

Microsurgical free tissue transfer has revolutionized head and neck reconstruction, where it allows function and aesthetics to be preserved without compromising the principles of oncologic surgery. Currently, the ALT flap has recently gained increasing popularity. It is versatile for reconstructing a wide range of complex head and neck defects. The unique anatomy of the thigh allows unparalleled flexibility in flap design, useful for reconstructing defects of the tongue, buccal region, midface, scalp, and through-and-through defects of the cheek (1).

Previously for oral cavity reconstruction, the radial forearm flap and the free lateral arm flaps were frequently used. However, the radial forearm flap in the donor area requires hand immobilisation during grafting and leaves a cosmetically unfavorable scar with long healing time in cases with complications caused by tendon exposure (2). In contrast, the ALT donor site can be closed without much residual morbidity. Primary closure of the defect can be performed comfortably when the defect is 6 to 9 cm or less. Any defect greater than 6 to 9 cm in width requires a skin graft (3).

The ALT flap is one of the fasciocutaneous flaps in the thigh based on the septocutaneous or musculocutaneous perforators derived from the lateral circumflex femoral system (4). Patient is laid supine, then a line is drawn between the anterior superior iliac spine to the superolateral border of the patella. This line represents the muscular septum between the rectus femoris and the vastus lateralis muscles. The cutaneous vessels are mapped by Doppler probe placed over the midpoint of this line, with the majority of skin perforators located within a 3-cm radius of this midpoint. The flap is centered over these vessels, with the long axis designed parallel to that of the thigh (5).

Dissection is started at the medial border of the flap over the rectus femoris muscle. Incision is made through the deep fascia and the flap is raised laterally for a short distance until the intermuscular septum is reached. The descending branch of the lateral circumflex femoral artery is then identified in the groove between the rectus femoris and vastus lateralis, and a septocutaneous vessel may be identified to facilitate further dissection. The flap is then raised suprafascially with a small cuff of fascia maintained around the perforator. Microvascular anastomosis of the pedicle is then performed using the suitable recipient vessels described above (5).

In this setting, the ALT flap offers much versatility in offering adequate bulk, thickness or thinness for reconstruction of head and neck defects, post oncological resection or from other causes. In addition, it offers minimal donor site morbidity as compared to other free flap options. We, therefore, recommend this flap for future similar cases.

References

1. Zaretski A, Wei FC, Lin CH, *et al*. Anterolateral thigh perforator flaps in head and neck reconstruction. *Semin Plas Surg* May 2006; 20(2):64-72.
2. Cipriani, R, Contedini, F, Caliceti, U *et al*. Three-dimensional reconstruction of the oral cavity using the free anterolateral thigh flap. *Plast Reconstr Surg*, Jan 2002; 109(1):53-57.
3. Rodriguez ED, Rosson GD, Bluebond-Langner R, *et al*. The utility of the anterolateral thigh donor site in reconstructing the United States Trauma Patient. *J Trauma* April 2007; 62(4):892-897.
4. Shieh SJ, Chiu HY, Yu Jui-Chin, *et al*. Free anterolateral thigh flap for reconstruction of head and neck defects following cancer ablation. *Plast Reconstr Surg* June 2000; 105(7):2349-57.
5. Pusic A, Chen C, Patel S *et al*. Microvascular reconstruction of the skull base: A clinical approach to surgical defect classification and flap selection. *Skull base* Jan 2007; 17(1):5-15.