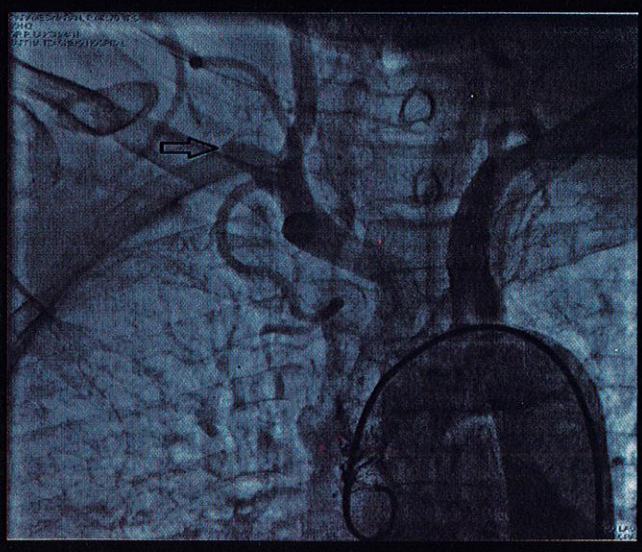
# BATTICALOA MEDICAL JOURNAL

*Established in 2005*

Volume 7, September 2016

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# BATTICALOA MEDICAL JOURNAL

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**BATTICALOA MEDICAL JOURNAL**

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## 'Arogya Parama Labha'

'Arogya parama labha, santhutti paraman danam'
(Health is the greatest gift!)

The first sentence of this verse from the Dhammapada etched on a plaque greets all those who visit the newly constructed Cancer Unit of the Teaching Hospital Batticaloa. With two 35 bed wards and a state of the art theatre, this unit which was ceremonially opened on the 13th of November last year strives to fulfill a long awaited need of the people of the Eastern province – a unit exclusively designated for the treatment of cancer.

Once the radiotherapy machine is installed it will be a fully fledged unit where all the types of cancers can be treated under one roof; without patients having to be transferred to Colombo, Jaffna or Badulla as was the practice due to the unavailability of some treatment modalities.

This was undoubtedly the high point of the past year that also saw the foundation stone laid for an Accident & Emergency Unit.

The once 'Provincial Hospital Batticaloa' has gone from strength to strength to be one of the Teaching Hospitals in the country with both medical and nursing students in training.

The Teaching Hospital Batticaloa is home to the Batticaloa Medical Association, which is informally referred to as the 'BMA'. Since its inception in 1972, the BMA has striven to improve the quality of medical knowledge of the medical fraternity of the Eastern province.

Now every year the BMA organizes various activities to fulfill that aim.

When you are reading this, the Annual Sessions of the Batticaloa Medical Association would have begun.

Mahathma Gandhi is supposed to have said that you should live as if you were to die tomorrow and learn as you would live for ever! Medicine would be a classic example for the latter sentiment.

It is a continuously evolving discipline. What is accepted as the gospel truth today, maybe discarded tomorrow. Sessions like these give us a chance to remember what is forgotten, to reinforce what is still remembered and to learn what is new. With concepts like continuous medical education a permanent fixture and new ones like revalidation becoming a reality not so far away, it is of paramount importance that we are not left behind, in this vocation that we all love.

This year too, the council has organized an interesting program with lectures, symposia etc.to educate us and to promote discourse where it should occur. Spanning over one and a half days it will not be too much and hopefully not too little.

In addition, this year we have been able to publish the 7th edition of the Batticaloa Medical Journal. We must thank all those who submitted manuscripts, the reviewers who went through them, and all those who helped in so many ways to bring this about. From an overview of the 'health care' education in Batticaloa, we have a curious mix of articles dealing with various topics including domestic violence. We hope that this journal will become a permanent part in the medical education system of Batticaloa.

Medical journals are difficult to read, dull, filled with complicated statistics and are difficult to grasp. We are sure this is no exception( except for the complicated statistics part). But, if you take the time and the trouble to read them the benefits are many.

You realize what a beautiful, logical study medicine is... once again.

A journal's success depends on the satisfaction of its readers. Regardless of whether this has fallen into your hands by design or accident, dear readers, read on...

The Editors.

# Health-Care Education in Batticaloa; Ten years on

KE Karunakaran

*Batticaloa Medical Journal 2016; 7: 3 – 6.*

## Overview

Modern Medical Education in Sri Lanka has been traced to have begun in the early 19th century, with the inauguration of a Medical School by the American Medical Missionaries headed by Rev. Dr. Samuel F Green (1,2). However, the official documentation of the beginning of Medical education is dated with the establishment of a Medical School in Colombo, in 1870 and is said to be the forerunner in the country (3).

The Faculty of Health-Care Sciences (FHCS) at Eastern University Sri Lanka, was established by a Gazette notification in November 2004 (4). The first set of students to read for a MBBS degree walked in, in June 2006. Thus, FHCS completes 10 years of producing graduates in Human Health Sciences, with 154 graduates in Medicine and 34 graduates in Nursing (5).

It is then, appropriate to look into the past with a view to be in the forefront in taking the Medical Education forward in the 21st century. This becomes essential as University Education is in a phase of transformation which has already begun in the world arena and is also happening in the present decade in Sri Lanka.

At the beginning of the 20th century, widespread reforms in Health professional education started to occur around the world. The Flexner report which focused on Medical Education (6), the Welch Rose report on Public Health Education, and the Goldmark report on Nursing, had a significant impact on these reforms (7) that led to the science-based curriculum. Around the mid-20th century, problem-based instructional innovations began to occur. Accordingly, major curriculum changes have been undertaken in most medical schools in Sri Lanka since 1990 (8).

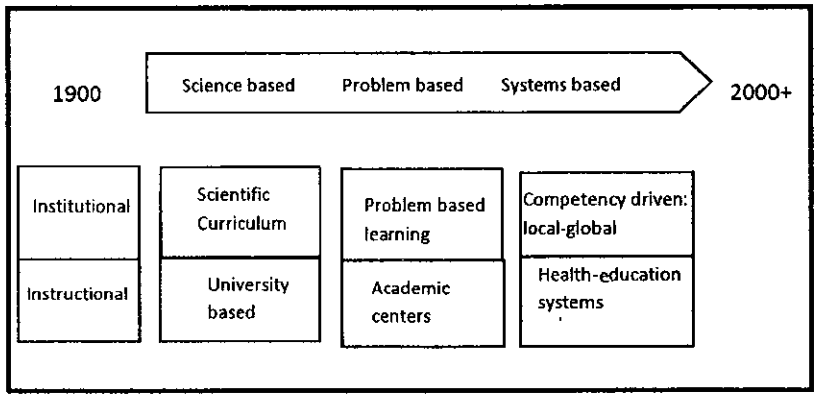
It was however, reported that glaring gaps and striking inequities had been persisting as noted during the first decade of the present century (7). Across the globe there is maldistribution of Healthcare personnel, relative to the population and their health needs (7). A similar situation is found in Sri Lanka as well. It is well evident that Health personnel and facilities are more abundant in the urban areas than in certain rural villages. Therefore, there is a great need incumbent upon us, the 'producers' of Health professionals, in moulding them to serve even in the most remote situations.

Health is about people. There is a group of people who are being trained, either professionally or otherwise, to provide health care to all the people (7). Therefore, the need for the tertiary education in health sciences in our Higher Education System has to be streamlined to cater to the needs of the population.

Thus, through a century and over, there have been changes in the higher education of Health Sciences and now, we are on the road heading towards an education based on competencies, breaking the barriers and forming the integration of the health and educational systems.

The illustration given below [reproduced from the Lancet commissions (7) clearly shows the three generations of reforms in the last century. It is also worthwhile noting that, the higher education system in Sri Lanka acknowledges that, producing 21st century graduates requires a shift towards 'Outcome Based Education' and 'Student Centered Learning' (9).

Three generations of reform (7)

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## Medical Education at Eastern University, Sri Lanka

The formation of the Faculty of Health-Care Sciences at Eastern University Sri Lanka had been a long and planned process. This process allowed the incorporation of the latest developments in the Health Sciences education in the global arena and has not been a copy of any existing program of any of the Medical faculties in Sri Lanka.

The following events could be called the noteworthy steps in the formation of the FHCS:

1. Naming the Provincial Hospital Batticaloa as a Teaching Hospital in 1993. Furthermore, the status was upgraded in 2006 after the establishment of FHCS.
2. Post basic diploma in Nursing was begun in 1998 and continued upto 2002.
3. Formation of a Medical Faculty Committee that has comprised of well recognized academics, Medical Educationists, clinicians etc. since early 1990s.
4. An Interim Faculty Board which has functioned since 2003 until the establishment of the faculty.
5. Appointment of a Development Consultant.

In the formation of the faculty several innovative steps have been taken to be on par with the reforms in the health sciences education. The following are worth mentioning:

1. The name 'Faculty of Health-Care Sciences' is unique.
2. Integration of academic disciplines.
3. Formation of Departments with the norm of administration.
4. Incorporation of the MBBS study disciplines in four such Departments.
5. Formation of a Department for other health sciences courses such as Nursing.
6. Formation of a Department of Medical Education and Research.
7. Identification and formulation of student learning objectives.
8. Design of the Curriculum in the form of Modules and Sessions.
9. Incorporation of the latest educational methodologies such as Problem Based Learning.
10. Conducting the compulsory core course 'Peace Medicine'.

Thereby, a new outlook has been provided to the MBBS study program 'which has happened for the first time' in the history of Health Sciences Education in Sri Lanka and has also paved the way to have common sessions to MBBS & B.Sc Nursing study programs.

Categorization of student learning objectives and formation of the curriculum into modules and sessions also paved the way for the faculty to find the best resource persons in the teaching-learning activities and who were able to deliver the best to the students.

It has been observed that 'the main feature' of the FHCS curriculum plan is the integration achieved through an organ-system approach and problem-based learning. The students learn medical knowledge, effective communication, and professional ethics and behavior via complementary co-modules and generic courses. The evaluation is through continuous modular and terminal assessments, where emphasis is placed on feedback and counselling (10).

The faculty (FHCS) has been commenced with an aim of having the different human health sciences degree programmes under 'one roof'. Thus, apart from the MBBS program, other degree programmes such as Nursing, Pharmacy, Public Health etc. can be conducted. Currently B.Sc in Nursing has been conducted since 2008. Inputs from other departments have been provided as scheduled. Whenever possible, attempts have been made to have sessions common to both MBBS and B.Sc Nursing programmes together with success.

Although on the cards, formats new to Sri Lanka have been incorporated into the academic administrative set up and also into the study programmes of the Faculty of Health-Care Sciences: their implementation was no smooth sailing. The major challenge faced is the lack of infrastructure and in particular the lack of staff. The faculty has been able to overcome this situation by incorporating the facilities and the extended faculty of the Teaching Hospital Batticaloa into its degree programmes and also remarkably the resources in the peripheral Hospitals including the District General Hospital Ampara and the Base Hospital Kalmunai, which are situated in the neighboring Ampara District.

Furthermore, the arrangement of modules and sessions enabled the faculty to choose academics from other universities and organization such as the World Health Organization, who were readily willing to assist in conducting the Teaching/ Learning program.

The Consultant Specialists at the Teaching Hospital, Batticaloa, who comprised the extended faculty has been supportive not only in conducting the clinical aspects of the study programme, but also involved in the teaching of Basic Sciences and pathophysiology modules. This arrangement has an added advantage, that clinical inputs and facts of importance too are stressed while delivering the lessons.

Credit for the major successes the FHCS achieved should go to the following:

1. Former Chancellor, Eastern University, Sri Lanka Prof T Varagunam.
   He was a well known and respected Medical Educationist, Professor in Medicine at University of Peradeniya and was the live-wire of the Faculty of Health-Care Sciences during its initial period. He introduced new concepts in the structural and curricular design of this faculty, continued to give leadership and a helping hand in engaging the resources with the use of new technology such as video conferencing.
2. The staff recruited in the initial years.
   Staff recruited in 2005, 2006 and 2007 should be given credit. During these three years a handful of academic and non academic staff were recruited to function at the Faculty when students began to get enrolled. It was their unprecedented dedication and application that initiated the success of this faculty.
3. Planning of Infrastructure.
   Infrastructure planning and development of the FHCS at its initial stage had to be reformulated form an already dismantled infra-structure development plan, which was painstaking. It was on this initial work done by a few staff that formulated a strong template for the infrastructure development at its permanent location and the construction has already commenced.
4. Formulation of credits to the MBBS program.
   The task of allocating credits to the modules, instructional, practical and especially clinical components of the study programme was undertaken by the Department of Medical Education and Research and completed successfully. This was one of the significant achievements with regard to the MBBS degree program. This has been commended by the University Grants Commission also.
5. The graduates.
   It is hereby placed on record that the entire batch of students (27 in number) recruited as the first MBBS batch of this faculty, got through the Phase III (Final) MBBS examination in their first sitting itself. Furthermore, the students had to sit the common MCQ paper with which the graduates were ranked by the University Grants Commission to formulate the common merit list. One of our students was ranked 12$^{th}$ and three more students were within the first 40. The performance of the 2$^{nd}$ batch of students too were almost at the level of 1$^{st}$ batch except that, two students had to complete the Phase III (Final) in their 2$^{nd}$ attempt, in the same academic year.
6. The Extended Faculty.
   The unprecedented support given by the Consultant Specialists of Teaching Hospital, Batticaloa contributed significantly. The academic staff from other Medical faculties too was much supportive.

## The Future

The higher education system of Sri Lanka in the current century is on the track of ensuring the formation of high quality and employable graduates. However, great challenges still exist, in achieving this goal. Thus, our focus should be on forming the correct mindset in the students towards this goal. The academic faculty too should be geared up to transform themselves according to the present trends in higher education.

The future of Health Sciences education depends chiefly on formulating and implementing educational policies appropriate to the present century. Thus, Departments or Disciplines of Medical Education should be strengthened to meet this focus. Its scope should be broadened to incorporate other human health sciences as well.

This outlook is already in place as Medical Faculties are in the process of upgrading their Medical Education units into Departments. The Faculty of Health-Care Sciences of the Eastern University is the forerunner in this regard.

## Conclusions

Modern Medical Education is in the third century in Sri Lanka. Transformation of medical education from the form of Apprentice and Teacher centered instructional modes to Student centered, problem based, outcome oriented form is evident. The Faculty of Health-Care Sciences of the Eastern University has recorded its success in this transformation in its history of ten years of functioning, by sustaining its integrated, system based undergraduate degree program in Medicine, with incorporation of problem based learning approaches successfully and conducting the BSc in Nursing almost in a similar fashion. The faculty also records that the future of the undergraduate degree programmes in health sciences lies chiefly on the umbrella purview of the Educational policies formulated and implemented by the Department/ Discipline of Medical Education.

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# Alcoholic Hepatitis

B Ganaikabahu

*Batticaloa Medical Journal 2016; 7: 07 - 10.*

## Introduction

Alcohol ingestion is the third leading preventable cause of death in USA. Excessive alcohol consumption is associated with short and long term liver damage, several types of cancer, unintentional injuries, domestic and social violence, broken marriages and damaged social and family relationships. Thirty years of life is considered to be lost per alcohol associated death.

The risk of cirrhosis increases with the regular consumption of 30g/day of alcohol use. Even a few days of alcohol use can lead to fatty liver, which resolves with abstinence. Fatty liver predisposes to cirrhosis and cirrhosis eventually to hepatocellular carcinoma. Forty percent alcoholic hepatitis patients die within 6 months, though the condition is treatable.

## Prevalence of alcohol use in Sri Lanka

Males 26% - 36.57%.

Age - usually those in the 17 - 64yrs age group.

Sex ratio – approx. 26% male: 1.% female.

(Illicit liquor and toddy was not included in this study.)

| Dependence | | | |
|---|---|---|---|
| Male | 5.6% , | Alcohol dependence | 4.9. |
| Female | 0.6% , | Alcohol dependence | 0.6. |

| Type of alcohol use in Sri Lanka | |
|---|---|
| Kasippu, toddy | 65% |
| Sprites | 28% |
| Beer | 3% |

## Clinical presentation

History - typically a person of 40 - 60yrs who had been taking alcohol for years, with abstinence for few weeks. The type of alcohol is immaterial.

There is usually a rapid onset of jaundice, fever, ascites with proximal muscle loss. May have encephalopathy.

Examination - typically the liver is enlarged and tender. Other features of chronic liver disease may be present. None is specific.

Investigations - White cell count (WBC) is increased with a neutrophils leucocytosis, serum bilirubin is elevated, Aspartate transaminases (AST) more than twice the normal and usually exceeds 300, Alanine Transaminases (ALT) is lower , AST/ALT >2 and the INR is increased.

If the serum creatinine is increased the patient can develop hepato-renal syndrome and even die.

Biopsy – ballooned hepatocytes with Mallory bodies. Surrounded with neutrophils and intra-sinusoidal fibrosis is characteristic. Characteristically perivenular fibrosis, periportal fibrosis and cirrhosis may co-exist with alcoholic hepatitis.

## Assessment

### CAGE –screen for alcohol dependence or abuse.

One point is given to each positive answer. If two or more points are scored - Alcohol Abuser.

Have you ever felt you should **C**ut down on your drinking?

Have people **A**nnoyed you by criticizing your drinking?

Have you ever felt **G**uilty about your drinking?

Have you ever had a drink as the first thing in the morning (**E**ye opener)?

*General Hospital Trincomalee. Correspondence should be addressed to BG ( email – bahu2009@yahoo.com)*

## Differential diagnosis

- Non alcoholic steatohepatitis
- Amoebic liver abscess
- Acute or chronic viral hepatitis
- Drug induced hepatits
- Wilson's disease
- Auto immune liver disease
- Alpha 1 antitrypsin deficiency,
- Pyogenic liver abscess
- Ascending cholangitis
- Decompensated hepatocellular carcinoma

As these patients are prone for infection, all should be screened for spontaneous bacterial peritonitis, Urinary Tract Infection, Pneumonia with urine / blood culture etc. USS is also helpful. Doppler flow may show elevated peak systolic velocity or increased diameter of hepatic artery.

## Assessing the severity of Alcoholic hepatitis

The Glasgow score helps to decide whether to start steroids or not and the Lille score is used to decide whether to stop steroid after one week or to continue for a full course - one month.

## Assessing the severity of Alcoholic hepatitis

| Scoring system | Calculation[a] | Severe disease score |
|---|---|---|
| **MDF** (Maddrey Discriminant Function)[8] | (4.6 × [patient's prothrombin time in seconds – control prothrombin time in seconds]) + (serum bilirubin in mg/dL) | ≥ 32 |
| **MELD** (Model for End-Stage Liver Disease)[23] | (3.8 × $\log_e$ serum bilirubin level in mg/dL) + (11.2 × $\log_e$ international normalized ratio) + (9.6 × $\log_e$ serum creatinine level in mg/dL) + 6.4 | ≥ 21 |
| **GAHS** (Glasgow Alcoholic Hepatitis Score)[26] | See table below | ≥ 9 |
| **ABIC** (Age, Serum Bilirubin, INR, and Serum Creatinine)[27] | (0.1 × age in years) + (0.08 × serum bilirubin in mg/dL) + (0.3 × serum creatinine in mg/dL) + (0.8 × international normalized ratio) | ≥ 9 |
| **Lille score**[28] | 3.19 – (0.101 × age in years) + (0.147 × albumin on day 0 in g/L) + (0.0165 × the change in bilirubin between day 0 and day 7 of corticosteroid treatment in μmol/L) – (0.206 if renal insufficiency is present) – (0.0065 × bilirubin on day 0 in μmol/L) – (0.0096 × prothrombin time in seconds) | > 0.45 |

| | Points | | |
|---|---|---|---|
| | 1 | 2 | 3 |
| Age (years) | < 50 | ≥ 50 | — |
| White blood cell count (× $10^9$/L) | < 15 | ≥ 15 | — |
| Urea (mmol/L) | < 5 | ≥ 5 | — |
| Prothrombin time ratio | < 1.5 | 1.5–2.0 | > 2.0 |
| Bilirubin (μmol/L) | < 125 | 125–250 | > 250 |

Sum the points assigned for each of the 5 variables

## Treatment

Includes general measures for patients with decompensated liver disease and specific measures directed at the underlying liver injury.

General approaches include treatment of ascites (bed rest, salt restriction, diuretics) , treatment of encephalopathy (low protein diet , lactulose), antibiotics to treat infections.

Nutritional support

All are malnourished. Parenteral and enteral feeding as pts are anorexic.

Daily protein intake is about 1.5g preferably vegetables, thiamine and other vitamins.

Specific measures

Abstinence from alcohol. Psychiatrist opinion beneficial. Baclofen and Topiramate promote short term abstinence.

Delirium tremens and alcohol withdrawal syndrome are treated with short acting benzodiazepines.

Hepato-renal syndrome - with albumin and vasoconstrictors.

Corticosteroids – prednisolone 40mg/day for 28days. But, 40% patients are unresponsive.

N-acetylcysteine, an antioxidant that replenishes glutathione stores in hepatocytes, was evaluated in a randomized clinical trial in combination with prednisolone. Although the 1-month mortality rate was significantly lower in the combination group than in the prednisolone-only group (8% vs 24%, P = .006), 3-month and 6-month mortality rates were not. Nonetheless, the rates of infection and hepatorenal syndrome were lower in the combination group. Therefore, corticosteroids and N-acetylcysteine may have synergistic effects, but the optimum duration of N-acetylcysteine therapy needs to be determined in further studies.

No other drug treatment benefits these patients.

MDF score >22 or encephalopathy re- assess after 1week.

Lille score > 2 start Pentoxyfylline 400mg tds for 28days

Anti – TNF therapy: Infliximab; Etarnercept increases short term survival.

Liver transplantation.

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# Maxillo-facial Injuries in Domestic Violence Against Women (DVAW)

KWMI Kulatunga[1], ANK Abayajeewa[2] and NSS Jayasooriya[1]

*Batticaloa Medical Journal 2016: 7: 11 – 14.*


## Abstract

Introduction - Domestic violence (DV) is a global phenomenon. It is defined as violence i.e. physical, psychological or sexual, between individuals within the family unit, including elders, children and siblings. The commonest violence is against women.

In any inter-personal violence maxillo-facial injuries are the most common injuries. These injuries have not been properly appraised in DV in Sri Lanka, in a study.

Objectives

1. Prevalence of maxillo-facial injuries in DVAW
2. Pattern of maxillo-facial injuries

Method - A prospective study was carried out with female patients who were admitted for treatment because of domestic violence in a level 1 trauma centre (ASU, NHSL) for a 5 month duration (15 January 2015 to May 31, 2015). The patient records at the ward were used to identify victims of DVAW. A structured form was used to collect information. Information regarding anatomical sites of injury, types of injuries, association with alcohol and the mechanisms of injuries were recorded.

Results - This study included 69 female patients, in whom the most common injuries were of the maxillo-facial region (48.2%). Most of the injured were by their spouses (84.06%), while under the influence of alcohol (59.42%). Commonest injury type was contusions (63.22%).

Conclusions

This study concludes that the majority of patients associated with DVAW and are admitted to the ASU-NHSL are associated with maxilla-facial injuries. Thus primary care givers and Specialists attending young females with facial injuries should be vigilant in detecting domestic violence and initializing the appropriate management.


## Introduction

Domestic violence against women (DVAW) is a global phenomenon (1,2). It is defined as behavior within an intimate relationship that causes physical, psychological or sexual harm to those in the relationship (1,3), although since recently a much broader view has been incorporated (2). It is now defined as interpersonal violence between individuals within the family unit, including elders, children and sibling (2).

Domestic violence against men is rare, especially in Asiatic cultures. On the other hand, violence against women is much more frequent (1,4). Though it's a multicultural problem, reporting of such violence has been minimal.

In Sri Lanka there are no prevalence studies which had included the country as a whole, but several studies exist which have been done on district and provincial level.

These studies quote DVAW as being in the range of 18 - 60% (5). In a study by the World Health Organization (WHO) on 48 different populations, 10 - 69% of women had been physically assaulted by their intimate partner at some point in their lifetime (1). Assault by an intimate partner within the previous 12 months ranged from 3 - 27% (1). In some studies as much as 86% of the victims also had a past history of assault by their partners (6).

Health consequences of DVAW are numerous. Apart from the injury from the assault per se, depression, psychosomatic disorders, chronic pain syndromes, sexual dysfunction and irritable bowel syndrome are predominant (7,8). Some studies have suggested that an abusive relationship that develops from these acts may ultimately end in the female partner being killed. These studies attributed 40 - 70% of female murder victims as to have belonged to such a relationship (9). Considering the injuries sustained by these victims, maxillo-facial injuries are the most frequent – 68 to 81% (6,10).

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Previous studies have shown that a female presenting with a facial fracture had a relative risk of 4.5 - 7.5 of being a victim of DVAW (10,11). Thus maxillo-facial injuries can be used as an essential marker in identification of DVAW victims (10). There are no studies of this nature in Sri Lanka; thus necessitating the importance of detecting the magnitude of maxillo-facial injuries in DVAW victims.

## Objectives

To assess the prevalence, pattern and mechanisms of maxillo-facial trauma in DVAW victims.

## Methodology

A prospective descriptive study was conducted enrolling the consenting patients who had been stated as being victims of DVAW in the bed head tickets, and were admitted to the Accident and Emergency Services of the National Hospital of Sri Lanka, during the period of 15th of January 2015 to the 31st of May 2015.

The data was recorded by interviewing the patients using a questionnaire form. Data was collected at a time when the patients' medical conditions were stable and at a convenient time for the patients.

DATA ANALYSIS

The data was entered and analyzed using Microsoft Excel 2007.

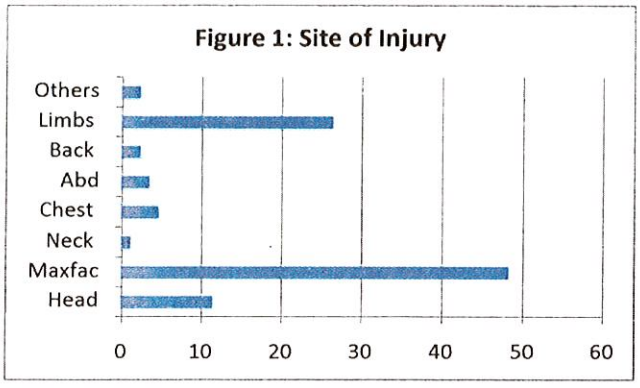
## Results

Sixty nine patients were interviewed in the tertiary care facility. Age distribution of the population was from 13 to 72 years with a median of 33 ± 11 years. Most of the victims were Sinhalese (57.97%), while the perpetrator was most often the husband (84.06%). In 59.42% of the cases the perpetrator was under the influence of alcohol. Out of the victims in our study, 75.36% acknowledged that they had been assaulted on previous occasions by the same assailant.

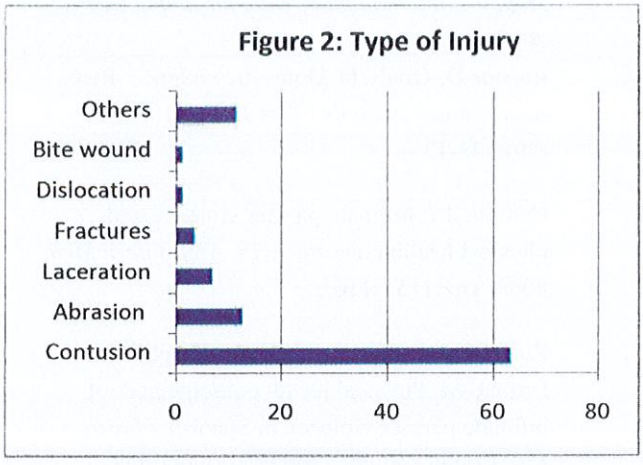
| Table 1: Perpetrator | | |
|---|---|---|
| Perpetrator | No. | Frequency (%) |
| Husband | 58 | 84.06 |
| Children | 3 | 4.35 |
| In-laws | 1 | 1.45 |
| Sibling | 2 | 2.9 |
| Ex-husband | 4 | 5.8 |
| Boyfriend | 1 | 1.45 |

| Table 2: Alcohol Usage and Previous History of DVAW | | |
|---|---|---|
| | No. | Frequency (%) |
| Alcohol | 41 | 59.42 |
| Non-alcohol | 28 | 40.58 |
| Previous DV | | |
| Yes | 52 | 75.36 |
| No | 17 | 24.64 |

Of this DVAW population, the most common injuries were to the maxillo-facial region (48.28%) followed by the limbs (26.44%) (Figure 1).

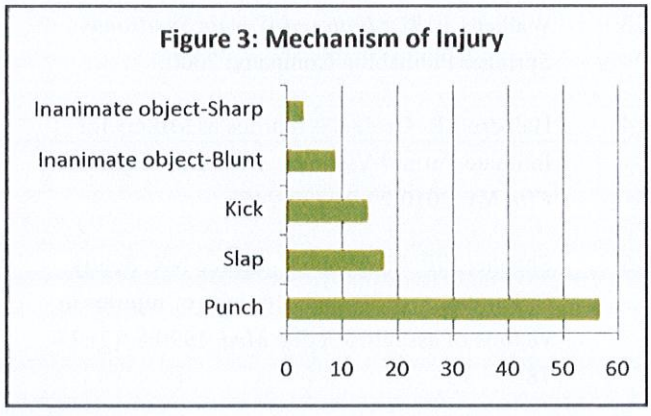



Considering injuries as a whole to all the sites, contusions were much more frequent (63.22%) in our study while the amount of fractures (3.45%) were minimal (3 patients out of 69), stomachache, sprain of joints etc. constituted the 'other' (11.49%) injuries (Figure 2).




Among the maxillo-facial injuries middle third (33.33%) injuries were the commonest, while the left side of the region was injured more (70.11%). Tooth dislocations, epistaxis, and earache were some of the other common injuries to the maxillo-facial region. Apart from the head and neck region, stomach and joint pain (due to sprains) were common complaints.

Punching (39.53%) with the bare fist was the most common method of assault followed by slapping (24.79%) and kicking (10.05%). Sharp instrument (0.67%) usage was the least likely method found in our study while an array of blunt instruments (6.03%) such as sticks, helmets, pans and even radios had been used as weapons. More than one method was used for assault in most of the cases (Figure 3).




## Discussion

DVAW spans a wide age distribution. Most of the victims were of the 31-40 year group with a median of 33 ± 11 years. This correlates well with international data (6,10,12). Ethnic distribution in our study was not similar to the national ethnic proportions; this might be explained by the skewed racial profile of the feeding area of the tertiary facility. These finding suggest violence should be suspected irrespective of age or race.

Repetition is a hallmark in abusive behavior. These forms of abuse occur over a long period of time while increasing in intensity. This mostly arises with the need for domination and control, which can culminate in the death of the victims (13).This explains why most of the women (75.36%) in our study reported of having been assaulted previously. This is consistent with other studies (6,12). Hence, it is important to identify these patients and to encourage them to free themselves from such abusive relationship. But most authors state that these patients cling on to these relationships not only because of fear of the partner but also because of financial dependence, fear for their children, unwavering hope that their partners would change etc. Most importantly, lack of support from their friends and families makes the victims helpless (16). Alcohol plays a critical role in DVAW. In our study 59.42% of the victims reported that their assailants were under the influence of alcohol at that time. This is confirmed in other studies as well (6,14). Alcohol combined with an abusive relationship is powerful concoction which can result in violence.

Most of the injuries in the study were related to the maxillo-facial (48.28%) region. This is on par with other studies (6,10,12,15). The face is targeted by the assailants as it is more prominent than any other area. Some authors have opined that the face is a main determinant in self-esteem and self-image. Thus, assailants may attempt to undermine the victim's self-image and self-esteem (16). The most prevalent site of maxillo-facial region was the middle third of the face (33.33%). This region is the most prominent in the facial region. Periobital and nasal regions offer an attractive target. This again is on par with other studies (12). Another fact is the side of the injury, where in our study 70.11% of the injuries were on the left side. This has been explained by some authors as hemispheric cerebral dominance that leads the victim to turn to the right in a reflexive manner to avoid being punched, thus presenting the left side of the face to the assailant (12).

Of note is the mechanism of injuries. In our study the most common method of inflicting harm was punching with the bare hands (56.52%) while the least used was sharp inanimate objects (2.9%). This correlates with other studies (12,15,16). The choice of a weapon or the lack of one is something of a surprise since the setting for an

altercation in DV is full of "weapons". For instance the kitchen, where plenty of knives, pans etc. are present. In the literature some authors have suggested that male chauvinistic thinking is such that, they do not need a weapon to deal with a female or do not want to do permanent harm(15). This explains the high prevalence of contusions (63.22%) and lesser prevalence of either lacerations (6.9%) or fractures (3.45%).

Many researchers have put forth markers to identify domestic violence (10,14). Age and location of the injury has been identified as a marker with high sensitivity (88.2 - 91%) albeit with poor specificity (59 - 65%). Especially if a female victim presents with a facial bone fracture she is 4.5 - 7.5 times more likely to be a victim of DVAW (10,11). Utilizing these DVAW demographic and injury patterns we can recognize these individuals.

## Conclusions

WHO has recognized women who are victimized by violence as a public health priority (1). Thus it is incumbent on us as health care professional to have a high vigilance when attending traumatized females to identify and direct management as appropriate for victims of DVAW.

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# A Prospective Study on Oral Submucous Fibrosis

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Key words - oral submucous fibrosis, potentially malignant disease, prospective study.

## Abstract

Introduction - Oral submucous fibrosis (OSMF) is a chronic, debilitating, potentially malignant disease of the oral cavity. Use of areca nuts and its commercial preparations is considered as the main cause. Burning sensation with spicy food and progressive limitation of mouth opening are striking clinical features. It is more common in India, Sri Lanka and other south Asian countries.

Sri Lankan data regarding its prevalence and clinical stage at presentation is limited.

Materials and method - We carried out a prospective study of 25 patients with clinically diagnosed OSMF in various clinical stages of the disease. History, clinical examination, haematological investigations - full blood count (FBC) and blood picture were done during the first visit.

Results - In this study of 25 patients with clinically diagnosed OSMF, male to female ratio was 11.5 : 1. Commonest age group at presentation was 30 - 39 years accounting for 32%. Stage II represents the commonest stage of the disease at initial presentation, which accounts for 40%.

Conclusions - OSMF is a male predominant disease. It is common in the young and middle aged, most of whom seek treatment in early stage of the disease. No association was found between low hemoglobin and OSMF.

## Introduction

OSMF is a potentially malignant, chronic, insidious and debilitating disease. It is characterized by fibro-elastic changes of the upper aero-digestive system, atrophy of the epithelium and reduction in vasculature (1). It has a multifactorial etiology, but use of areca nut is the only proven causative agent (1,2). Even in 600BC, the ancient Indian physician 'Sushrutha' described a similar kind of disease named as 'vidari'. In 1952 Swartz described it as 'atrophia idiopathica mucosa oris' and in 1953 Joshi had given the name 'oral submucous fibrosis' (2).

Geographically, it has specific distribution and predominantly affects the population of the Indian subcontinent and South-East Asia. A few cases have also been reported in Europe and in America, among the people who have migrated from Asia. An estimate from 1996 indicate that 2.5 million have been affected with the disease globally. It is also estimated that around 20% of the world population use some form of betel nut so the incidence of OSMF is likely to be much higher than the current estimate (1). Male to female ratio varies with the region and recent data suggest that this is a male predominant disease. It commonly occurs in the 2nd and 3rd decades of life. Generally, younger patients develop clinical features of OSMF within 3.5 years from the start of the habit and in older patients it takes around 6.5 years (1).

Since OSMF is multifactorial in origin, possible etiological factors include capsaicin in chilies, low hemoglobin, zinc, essential vitamins, various autoimmune and genetic causes. Areca nut stands as the only proven and main causative agent (1).Areca nut is the endosperm of the fruit of *Areca catechu* palm tree (1). Not only the betel quid with areca nut but also different preparations of it like Gutkha, pan masala etc. can contribute to the disease (1,2).

OSMF is essentially a disease of collagen metabolism. Areca nut contains alkaloids, flavanoids and copper which interfere with the homeostasis of the extracellular matrix. Among the alkaloids, arecoline is known as the most potent constituent which stimulates fibroblasts to produce more collagen. Flavenoids like tannin and catechins inhibit collagenase and render collagen fibrils resistant to degeneration by collagenase (1). Activated T cells, macrophages, cytokines and tumor growth factor beta (TGF beta) also plays a role inducing the localized inflammation.

Clinical features of OSMF depends on the stage of the disease. Burning sensation, lathery feeling of the mucosa,

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depigmentation, progressive limitation of mouth opening and tongue movement are the most commonly associated clinical features. Development of vertical fibrous bands is the main cause of restriction of mouth opening (1). In severe cases the inter-incisal distance maybe only a couple of millimeters and the patient may also complain of alteration of the voice and dysphagia, indicating the involvement of the pharyngeal mucosa. Since the epithelium of the oral mucosa is atrophic, the underlying tissues are more exposed to carcinogenic substances which increases the chance of dysplastic or malignant changes (3). According to the literature, malignant transformation rate associated with OSMF varies from 7 - 12% (1). Therefore it is important to be identify the risk groups in Sri Lanka and to educate them to prevent the disease. Even though this is fairly common among the Sri Lankan population, no records are available regarding its prevalence, stage of the disease at initial presentation, association with low haemoglobin levels and the response to steroid treatment.

## Aims of the study

Aims of the present study was to assess the demography, stage of the disease at the time of initial presentation, any association with a low haemoglobin level (< 10g/dl ) and the response to steroids.

## Materials and methods

Ethical clearance for the study was obtained from the Ethical Review Committee of Colombo South Teaching Hospital under application number 464.

Subjects of the study were the newly diagnosed patients of OSMF who attended the Oral and Maxillo-facial clinic at Kalubowila for a period of five months from December 2015 to April 2016. In their first clinic visit a thorough history with the presenting complaint, past medical history, social and habit related history was taken. All the patients were examined by experienced dental surgeons and finally assessed by the Registrar in OMF surgery. Examination of the inter-incisal distance and the condition of the oral mucosa was performed with emphasis on clinical staging of the diseases as described by Khanna JN & Andrade NN (1995).

Khanna JN and Andrade NN (1995) classification:

Stage I – early clinical features of OSMF( burning sensation of mouth with spicy food, depigmentation, Blanching leathery mucosa etc. Inter Incisal Distance (IID) >35mm.

Stage II - clinical features + IID 26 - 35mm.

Stage III - above clinical features + IID 15 -25mm.

Stage IVA - clinical features of OSMF with severe trismus, restricted tongue movements, shrunken uvula. IID <15mm.

Stage IVB - clinical features of OSMF with hyper keratotic lesions and ± squamous cell carcinoma.

Diagnosis of OSMF was made with clinical parameters and all the patients who were included for the research work were educated and informed consent was taken regarding research work in the relevant language. Haematological investigations were done for all the patients in their first visit as a part of routine management. Incisional biopsies was planned only in cases with suspicious lesions in the oral mucosa. The treatment protocol included patient education, habit intervention, jaw exercises and the use of steroid preparations.

Regarding the haematological investigations, full blood count (FBC) and the blood picture was done for every patients in the group to assess the haemoglobin level. 'Low haemoglobin' was considered as ≤ 10g/dl of haemoglobin for both genders. All the haematological investigations were done at the Haemtological laboratory of the Colombo South Teaching Hospital to avoid /minimize the inter laboratory variations.

Since all the patient were experiencing burning sensation with spicy food, steroid preparations were used. Topical steroids of triamcinolone acetanide oral base or betamethasone tablets mixed with water to be used as a mouth wash three times a day were prescribed. Young patients free of diabetes mellitus and hypertension were considered for dexamethasone pulse therapy of 80mg mixed in 500ml of saline and was given as a bolus at monthly intervals. This is being used in many institutes in Sri Lanka but records of effectiveness are not available.

Data analysis was done with statistical Package for Social Sciences version 17.

## Results

Data from the study population of 25 patients with OSMF are given in Table 1. The male to female ratio was 11.5 : 1(Chart 1). Thirty two percent of patients were in the age group of 30 - 39 years which represents the commonest age group. Stage of the disease at the initial presentation varied from 40% in stage II, followed by 28% in stage I, 20% in stage III, 8% in stage IVA and 4% in IVB (Chart 2).

The lowest hemoglobin found was 12g/dl and therefore, there was no association with low haemoglobin and OSMF in this study population. Burning sensation with spicy food was markedly improved with the use of topical steroids. IV dexamethasone pulse therapy was not shown to have a significant improvement during the study period .

| No | Age | Gender | IID mm | Suspected Lesions | Haemoglobin g/dl | Stage of Disease |
|---|---|---|---|---|---|---|
| 1 | 42 | M | 11 | + | 13.3 | ivB |
| 2 | 52 | M | 40 | - | 14.4 | i |
| 3 | 43 | M | 21 | + | 14.9 | ivA |
| 4 | 54 | M | 30 | + | 16.1 | ivA |
| 5 | 34 | M | 48 | - | 15.8 | i |
| 6 | 43 | M | 28 | - | 12.9 | ii |
| 7 | 33 | M | 25 | - | 15.2 | iii |
| 8 | 36 | M | 27 | - | 12.8 | ii |
| 9 | 22 | M | 40 | - | 15.8 | i |
| 10 | 20 | M | 20 | - | 15.3 | iii |
| 11 | 32 | M | 32 | - | 15.5 | i |
| 12 | 21 | M | 25 | - | 14.2 | iii |
| 13 | 21 | M | 26 | - | 13.2 | ii |
| 14 | 51 | F | 46 | - | 12 | i |
| 15 | 50 | M | 35 | - | 12 | i |
| 16 | 29 | M | 21 | - | 13 | iii |
| 17 | 39 | M | 40 | - | 14.7 | i |
| 18 | 63 | M | 19 | - | 12.9 | iii |
| 19 | 51 | F | 33 | - | 12 | ii |
| 20 | 42 | M | 30 | - | 12.7 | ii |
| 21 | 20 | M | 32 | - | 12.9 | ii |
| 22 | 33 | M | 33 | - | 13.1 | ii |
| 23 | 32 | M | 30 | - | 14.4 | ii |
| 24 | 44 | M | 30 | - | 13.2 | ii |
| 25 | 39 | M | 34 | - | 12.6 | ii |

**Table .** 1 Showing the summery of collected data 0f 25 study population (IID - Inter Incisal distance)

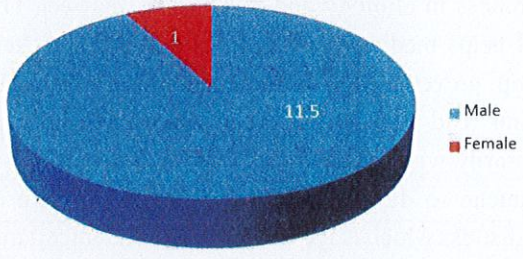


**Chart 1.** Showing the male : female ratio in the study population

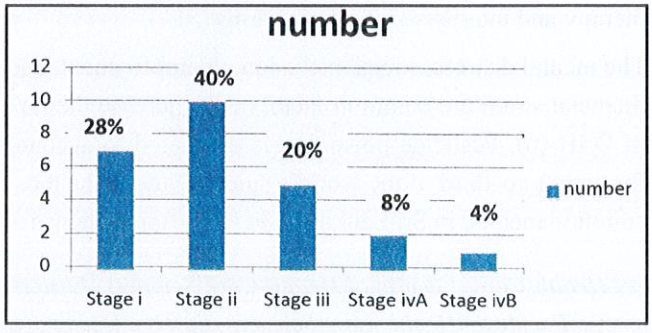


**Chart 2.** Showing stage of disease at initial presentation - stage ii represent the highest

## Discussion

Most of current studies, specially in India and Pakistan have shown that OSMF is more common among the male population. In our study the male to female ratio was 11.5 : 1 further supporting this. In Sri Lanka betel chewing is more associated with estate workers but in our study the majority of patients (>80%) were non-estates workers.

In most studies, the commonest age group presenting with the disease were in the 2nd and 3rd decades of life. In our study it was more common in the young and middle aged people with the 30 - 39 years group having the highest representation. Stage at initial presentation was highest in Stage II, which was 40% and second in stage I with 28%. Therefore 'early stage' of the disease (stages I and II) at initial presentation represent 68% of the diseased population. Reason for this maybe even though young people use betel quid and its preparations their awareness of oral cancer is higher than that of older people. Hypothetical assumption of a relationship between low haemoglobin level and OSMF was not proven in this study.

The commonest complaint of burning sensation with spicy food responded well to topical steroids, but improvement with IV steroids need to be evaluated with further studies.

## Conclusions

OSMF is a male predominant habit related disorder involving the upper aero digestive system. More patients seek treatment, in early stages of the disease. With this data the use of haematinics in routine management of OSMF in the Sri Lankan setup is controversial and its use should be further evaluated. Steroid therapy showed clear beneficial effects as symptomatic management. This also needs further studies to assess the benefit with different steroid preparations.

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# Deliberate Self-Harm patients admitted to Teaching Hospital, Batticaloa - Influencing Factors and Consequences

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Key terms - Deliberate self-harm, factors, consequences

## Abstract

Background and objective - Deliberate Self Harm (DSH) is an act with a non fatal outcome in which an individual deliberately initiates a non–habitual behavior. DSH is hard to predict and clinical management is difficult leading to suicide attempts if left untreated. The objective of the study was to determine the influencing factors and the consequences, of deliberate self-harm patients admitted at a clinical setting.

Design - A hospital based cross sectional descriptive study was carried out among 344 DSH patients from September 2015 to February 2016 among those who were admitted to Teaching Hospital, Batticaloa (THB). A pre-tested semi structured questionnaire was used to collect data.

Results - Half of the patients were in the 20 -39 years group (50.3%) with a mean age of 23.99 years (SD ± 9.30). Majority (68.6%) were females. DSH was high among people living with their families (95.3%) and in rural residents (93.9%). About 96% had poisoned themselves and 2.3% had mutilated their bodies. Familial issues (38.4%) were the main cause for DSH and were influenced by special circumstances in 54%.

Fifty two percent had gathered information from the media about DSH. The consequences of DSH were known by 58% of the patients before the attempt. Around 74% of them had realized the impact of DSH. The majority (83.4%) felt guilty about their attempt and 73.5% of them had failed to solve their problem through DSH attempt.

Conclusions - DSH is a major health problem among youths with considerable emotional distress and socio economic impact. Comprehensive preventive strategies are essentially needed through media.

## Introduction

Deliberate Self Harm (DSH) is an act of non-fatal injury to self by means of physical injury, drug overdose or poisoning (1). Those who engage in DSH have no desire to die but have the ability to engage in a lethal attempt while Intention to suicide (ITS) have both desire to die and the capability to engage in a lethal attempt where substantial overlap exists between those two (2).

Hjelmeland et al (2002) described that DSH may be an attempt to communicate with others to influence, to secure help, to obtain relief from a difficult and otherwise overwhelming emotional state (3). Thus, understanding the differences in etiology and risk factors between ITS and DSH helps medical professionals and policymakers to develop prevention and intervention programs (2). The victims tend to be young adults, many of whom do not necessarily wish to die. Nevertheless, whether or not victims intend to die, deliberate self-harm is a sign of personal distress which is typically through the intentional ingestion of poison, is common throughout the Asia Pacific region (4). In addition, self-harm is associated with a range of negative outcomes which interferes with therapy and interpersonal relationships (5).

The mental distress, social exclusion, unemployment, and financial strain are common factors that increase the risk of DSH (6). Pesticide poisoning is estimated to account for up to one–third of the world's suicides and is the most common method in Sri Lanka and in other Asian countries

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(7). Before 1960, hanging was the commonest method of suicide and since the 1970s the main mode of suicide has been ingestion of pesticides (8).

The Batticaloa region has vast experience in losses in finance, human resource and social support as a result of the long civil war and frequent natural disasters. The maladaptive behavior initiated by them may be the results of underying factors and play a major role. The influencing factors and consequences could be well understood if the underlying circumstances are taken into consideration Thus, the present study was undertaken to describe the influencing factors and consequences among deliberate self-harm patients admitted at Teaching hospital Batticaloa.

### Methodology

This cross sectional descriptive study was carried out at Teaching hospital Batticaloa. Three hundred and forty four (344) patients admitted to THB from September 2015 to February 2016 were included while patients with agitated behavior and those under influence of sedation during data collection were excluded.

The interviews were conducted in a calm and quite separate place in the liaison unit after obtaining written informed consent and explaining the purpose by senior medical officers. The pretested semi-structured interviewer administrated questionnaire was used to collect the data which lasted nearly 20 - 30 minutes. Privacy, confidentiality and anonymity of the patients were ensured during the interviews and throughout the study.

The data were analyzed using a SPSS version 18 for descriptive statistics.

Ethical approval was obtained from Ethic Review committee, Faculty of Health Care Sciences, Eastern University, Sri Lanka.

## Results

### Socio-demographic characteristics

A total of 344 patients were interviewed, of which 31.4% were males and 68.6% were females. The majority of the victims were young adults aged 20-39 years (50.3%) with a mean age of 23.99 years (SD ± 9.30). About 55.8% were single, 89.0% were Tamils and 60.8% had completed secondary education. Most of the patients with DSH (66.8%) were unemployed and 1.4% was students. It was observed that DSH was high among rural communities(93.9%), and amongst those who live with their family (95.3%) (Table 1).

Table 1 – Distribution of sociodemographic characteristics of the participants

| Characteristic | Response | Total n (%) |
|---|---|---|
| **Gender** | Male, | 108 (31.4) |
| | Female | 236 (68.6) |
| **Age group (years)** | < 20 | 136 (39.5) |
| | 20 - 39 | 173 (50.3) |
| | 40 – 59 | 34 (9.9) |
| | ≥ 60 | 1 (0.3) |
| **Marital status** | Single | 192 (55.8) |
| | Married | 147 (42.7) |
| | Separated/ Divorced | 5 (1.5) |
| **Ethnicity** | Tamils | 306 (89.0) |
| | Muslims | 37 (10.8) |
| | Burgers | 1 (0.2) |
| **Religion** | Hindu | 295 (85.8) |
| | Christian | 12 (3.5) |
| | Islam | 37 (10.7) |
| **Education Level** | No schooling | 6 (1.7) |
| | Primary | 122 (35.5) |
| | Secondary | 209 (60.8) |
| | Tertiary | 7 (2.0) |
| **Residential area** | Rural | 323 (93.9) |
| | Urban | 21 (6.1) |
| **Living status** | Lonely | 11 (3.2) |
| | With family | 328 (95.3) |
| | With others | 5 (1.5) |

### Identified factors for DSH

Ninety six percent (95.6%) had resorted to self-poisoning. Among those who consumed poison (n=230), 39% of them had used agrochemicals. Home environment was the place for DSH attempt in the majority of cases (90.1%) and 82.0% had obtained their materials from their home premises. Family conflicts (38.4%) were the main cause for DSH among patients (Table 2).

More than half of them (52.0%) gathered information regarding DSH from media. Fifty four percent of the patients' DSH attempts were influenced by special circumstance and the intention was impulsive in 61.4%. Majority of them (89.1%) had not taken any precautions against intervention during the attempt and 67% had their act after act as passive precaution (Table 3).

Table 2 – Distribution of identified factors of DSH attempts

| Characteristic | Response | Total n (%) (n=344) |
|---|---|---|
| **Type of harm** | Poisoning | 329 (95.6) |
| | Injury | 8 (2.3) |
| | Poisoning and Injury | 1 (0.3) |
| | Hanging | 5 (1.5) |
| | Attempted to jump at railway | 1 (0.3) |
| **Type of poisoning (n=330)** | Agrochemical | 130 (39.4) |
| | Plant origin | 74 (22.4) |
| | Medicinal drugs overdose | 125 (37.9) |
| | Kerosene oil | 1 (0.3) |
| **Place of attempt** | Home | 310 (90.1) |
| | Out environment | 34 (9.9) |
| **Source of material obtained for DSH** | None* | 1 (0.3) |
| | Home premises | 282 (82.0) |
| | Close by places | 48 (14.0) |
| | Distant places | 13 (3.7) |
| **Causes for attempt** | Family conflict | 132 (38.4) |
| | Personal problems | 92 (26.7) |
| | Financial crisis | 36 (10.5) |
| | Social issues | 71 (20.6) |
| | Chronic disease burden | 13 (3.8) |

* - Attempted to jump at railway

Table 3– Distribution of influencing factors among DSH patients

| Characteristic | Response | Total n (%) (n=344) |
|---|---|---|
| **Prime source of information for attempts** | Previous exposure | 27 (7.8) |
| | Peers | 138 (40.2) |
| | Media | 179 (52.0) |
| **Attempt influenced by** | Alcohol consumption | 29 (8.4) |
| | Peers stimulation | 4 (1.2) |
| | Family members | 113 (32.8) |
| | behaviors | 186 (54.1) |
| | Special circumstances * | 12 (3.5) |
| | Media | |
| **Intention behind the attempt** | Impulsive | 211 (61.4) |
| | Manipulative | 113 (32.8) |
| | Planned | 20 (5.8) |
| **Any precaution against intervention** | No precaution | 308 (89.5) |
| | Passive precaution | 27 (7.9) |
| | Definite precaution | 9 (2.6) |
| **Act after act** | Voluntarily informing | 110 (32.0) |
| | Passive action | 233 (67.7) |
| | Not disclosed | 1 (0.3) |

* - Direct negative affection towards individuals at any occasion

## Consequences of DSH

Fifty eight percent of patients had known the consequences of DSH before the attempt and recovery with treatment was the expected consequence in 46% of patients. Majority of patients (74.0%) realized the consequence of their DSH attempt. Forty one percent of them were brought to hospital within 2 - 6 hours of the attempt. Majority of them (83.4%) felt guilty about their attempts and the causes were also not understood by others in 73.5% of cases (Table 4).

Table 4 – Consequences of DSH among participants

| Characteristic | Response | Total n (%) (n=344) |
|---|---|---|
| **Know the consequences of DSH** | Yes | 201 (58.4) |
| | No | 143 (41.6) |
| **Outcome expected after DSH** | Immediate recovery | 16 (4.7) |
| | Recovery with treatment | 159 (46.2) |
| | Unsure | 138 (40.1) |
| | Fatal | 31 (9.0) |
| **Immediate outcome of DSH attempt** | Empowerment | 32 (9.3) |
| | Mutual understanding | 22 (6.4) |
| | Realization | 255 (74.1) |
| | Ambivalent | 30 (8.7) |
| | Poor insight | 5 (1.5) |
| **Duration to reach hospital after attempt (hours)** | < 2 | 79 (23.0) |
| | 2 -5.9 | 142 (41.3) |
| | 6 – 12 | 114 (33.1) |
| | > 12 | 9 (2.6) |
| **Feeling after attempt** | Guilty | 287 (83.4) |
| | Not guilty/worthy | 43 (12.5) |
| | Ambivalent/unsure | 14 (4.1) |
| **Reason for DSH attempts understood by family members** | Yes | 91 (26.5) |
| | No | 253 (73.5) |

## Discussion

Females were predominant in this study. The pattern of gender distribution is similar to a study conducted in the Southern province where females outnumbered males by more than three times (9) while females constituted 60% among all DSH patients in a Western province study (10). In contrast, a study at the National Hospital, Sri Lanka had found that male rates were higher among DSH attempts (11). In addition, males demonstrated higher pesticide related incidents than females (12). A gender difference in rates in this study may be due to a sense of powerlessness during conflicts and a lower social status that females hold in a patriarchal society.

Majority of DSH attempts were among 20 - 39 years which is a productive age group. A majority of them were single, poorly educated, unemployed and from rural residences. Similarly, a study on Deliberate Self Harm

(DSH) at the National Hospital Sri Lanka (NHSL) found that majority of attempts were by young adults aged 20 - 39 years (73%; 57% were single; 85% had less than 11 years of schooling and 28% were unemployed) (10). Furthermore, a study revealed that many people admitted for deliberate self-poisoning were young; about two thirds were aged under 30 (12). These findings support for the influence of sociological factors impacting on a relatively economically deprived group in society with a greater share of adversity (13).

In this study, self-poisoning was the commonest method for DSH attempt and agrochemicals were the most extensively used. Self-poisoning seems to be the preferred major method of dealing with difficult situations for most of the youngsters in the developing world (14). Findings similar to these were also found in other hospital-based studies in Sri Lanka (15,16). Eddleston (2000) stated that organophosphates were accountable for most of the negative outcomes in rural areas of many developing countries (17). Further, agrochemicals are used in the rural areas while drugs and domestic substances were used in the urban areas (14).

The media was the predominating source of information for DSH in this study. This could be acceptable in modern world that news related DSH are easily accessible to all through media. The majority of attempts were precipitated by interpersonal relationship within the family. These results were consistent with a study in Sri Lanka where major influences for precipitating were problems with partner, with parents, and rejection by their lovers (10). In the present study, majority of attempts were influenced by special circumstances where direct negative affection towards individuals takes place at any occasion. It may be due to the sudden thought with varying intentions in order to get away from their burning circumstances either in term of relationship or matter of issues.

In the present study, more than half of them were aware of the consequences while nearly half felt that immediate recovery and recovery with treatment would be the outcome. It is clearly demonstrable of an attitude of an uneducated youth with poor knowledge on this impulsive act. Majority had realized the gravity of the act of DSH later. It might be due to direct exposure to permanent disabilities, unpleasant events such as irritating gastric symptoms, failure to concentrate and feeling a lack of interest occurring among victims in ward settings.

The victims were brought to the hospital within 2 - 6 hours of the act in 40%. It shows that the relatives and others do not hesitate to bring the victims with hope of recovery. Further, majority of them had developed guilty thoughts about their act. This might be due to unbearable pain, discomfort and feeling shame. In the majority of cases, the causes for their attempts still were not understood by other family members. Confidential personal matters or very critical social as well as financial crisis might be the causes for DSH.

## Conclusions

Integrated approach with families, social groups and along with social media are essentially needed to develop feasible preventive strategies to bring down the number of deliberate self-harm attempts.

Disclosure

The authors report no conflicts of interest in this work.

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# Primary Prevention Program for Cardiovascular Diseases - a Preliminary Report

K Arulnithy, N Panchalingam and M Jayasingham

*Batticaloa Medical Journal 2016: 7: 23 – 25.*

## Introduction

There is a rapid increase in morbidity and mortality associated with Cardio-vascular diseases (CVD) in the developing world. According to the latest World Health Organization (WHO) data published in May 2014, deaths due to coronary heart disease in Sri Lanka accounted for 25.74% of the total deaths. According to the Annual Health Bulletin of 2007, the 2nd highest cause of death in Batticaloa are cardiac events.

As the morbidity and mortality has increased substantially during the last 2 decades, to overcome this problem, community based preventive measures are being taken. Cardiovascular disease prevalence is modulated by environmental factors as well as individual factors; urbanization, aging and life style changes are the key factors behind this epidemiological transition.

Primary prevention is a method adopted to avert the occurrence of disease in a population which is exposed to risk factors.

Now it has been given as a service to our community by the Primary Prevention Centre of the Cardiology Unit-Teaching Hospital Batticaloa(THB) for the last 1 year and 4 months. The purpose of our service is to ensure Healthy Hearts in our society by modifying or reducing the risk factors by screening, and preventing heart attacks which can cause sudden deaths without any symptoms.

## Protocol

Therefore we created a protocol based on several accepted guidelines and depending on the results we hope we would be able to refine our protocol for general use. We have divided the risk factors into major and minor risk factors and given a score for each.

| Major risk factors | | Score |
|---|---|---|
| 1. Age (Males ≥55 / Females ≥ 60) | | 2 |
| 2. Diabetes Mellitus - Yes | | |
| | ≤9 y | 2 |
| | ≥10y | 4 |
| 3. Smoking-Yes | | |
| | ≤9 | 2 |
| | ≥10 | 4 |
| 4. Hypertension | | 2 |
| 5. Family History of IHD | | 1 |
| 6. Waist Circumference | | |
| Males | ≥90cm | 1 |
| Females | ≥80cm | 1 |
| 7. Lipid Profile | | |
| Triglyceride ≥ 150 | | 1 |
| HDL | ≤ 49 | 1 |
| LDL | 130- 159 | 1 |
| LDL | ≥160 | 2 |

| Minor Risk Factors | | |
|---|---|---|
| 1. Ankle Brachial Pressure Index | | |
| | ≤0.8 | 1 |
| 2. Carotid Intimal Thickness | | |
| | > 1mm | 1 |
| 3. HS – CRP | >2 | 1 |
| 4. Albuminuria | >0.1 | 1 |
| 5. Apolipoprotein | | 1 |
| 6. Homocystein | ≥11 | 1 |
| 7. Calcium Score | >400 | 1 |

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## Method

In our program we're screening males more than 40 years and females more than 45.

The cut off score for positive screening is considered as ≥8.

At the moment we request the patients to bring their fasting blood sugar and lipid profile reports. For these we have been able to get a discount with the help of certain laboratories. In the future we hope to implement this program completely free.

We are collecting data with a short interview and clinical examination. We spend about 20 minutes for each patient. All the data we collect are stored for the purpose of reporting and analysis. If any risk factors are identified, recommendations such as life style modification, a healthy diet chart etc. will be given.

We also provide advice and handouts about diseases, solutions and awareness of disease; medical treatment options, clinic referrals and investigations such as ECG, 2D Echo, Stress ECG (ETT) and reporting will be done immediately.

Further management will be based on the risk score. People with score ≥8, will be requested to undergo an ETT and if positive, will be referred for an angiogram. If needed they will be referred for Coronary Artery Bypass Grafting (CABG).

## Results

So far we have screened 506 individuals; we have covered 9 schools, the Eastern University Sri Lanka (EUSL), District Secretariat Batticaloa, Divisional Secretariat, Department of Education and the Post Office.

Out of the 506 people analyzed,

- 37 (7.31%) males were above 55 and 3 (0.6%) females were above 60 years of age.
- 132 (26.09%) were having Diabetes Mellitus and among them 60 were males (45.45%) and 72 (54.54%) were females.
- 115 (22.72%) were hypertensive and among them 54 were males (47%) and 61 were females (53%).
- 13 males were smokers (2.57%).
- 112 (22.13%) had a family history of IHD. Of them 45 were males (40.18%) and 67 were females (59.82%).
- 173 (41.58%) males had a waist circumference (W.C) of >90cm and 243 (58.41%) females had a waist circumference of >80 cm.

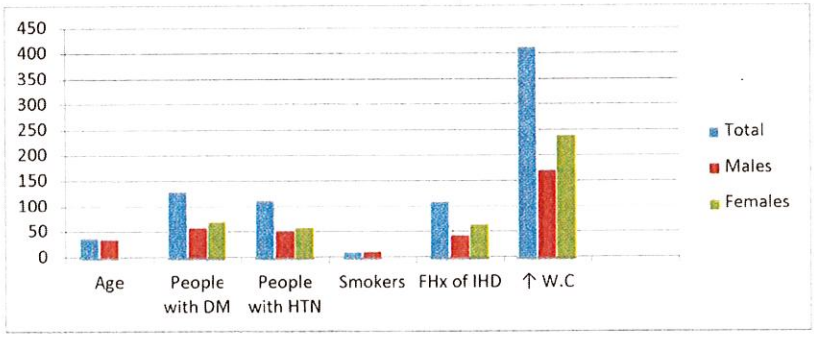


Fig.1 Analyzed Data of the study population

Among 468 people where the levels were available, 123 (26.28%) had a total cholesterol >200mg/dl; 108 (87.8%) were males and 15 (12.2%) were females.

Out of 451,

- 153 (33.92%) had a triglyceride level of more than 150 mg/dl; 84 (54.9%) were male and 69(45.1%) were females.
- 222 (49.22%) had a LDL of more than 130mg/dl; 94 (42.34%) were males and 135 (60.81%) were females.

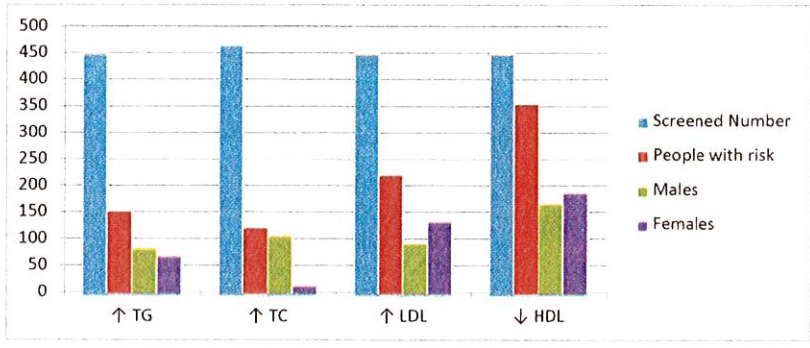


Fig. 2 Lipid profiles of the screened population

HDL less than 49mg/dl was considered a risk factor. Out of 451,

- 357 (77.82%) had a low HDL level; 168 (47.06%) males and 189 (52.94%) females.

Out of 90 for whom the fasting blood sugar was available,

- 31 (34.44%) had normal glucose levels.
- 31(34.44%) {23 males (74.2%), 8 (25.8%) females} had impaired glucose tolerance (100-126g/dl).
- 28 (31.11%) {20 males (71.42) 8 (28.57%) females} had blood sugar levels more than 126g/dl which was falling under the diabetic category and therefore were offered other investigations to confirm the diagnosis of diabetes mellitus.

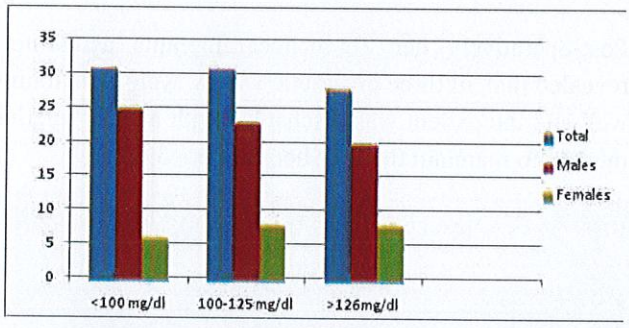


Fig. 3 The fasting blood sugar levels

Expected 10 year risk of fatal or nonfatal cardiovascular events which is calculated by the WHO/ISH prediction charts among 210 patients was as follows:

- <10% risk - 181(86.19%)

{88 (48.61%) males, 93 (51.38%) females}

- 10-20% risk - 26 (12.38%)

{13 (50%) males, 13 (50%) females}

- >30% risk - 3 (1.43%) females

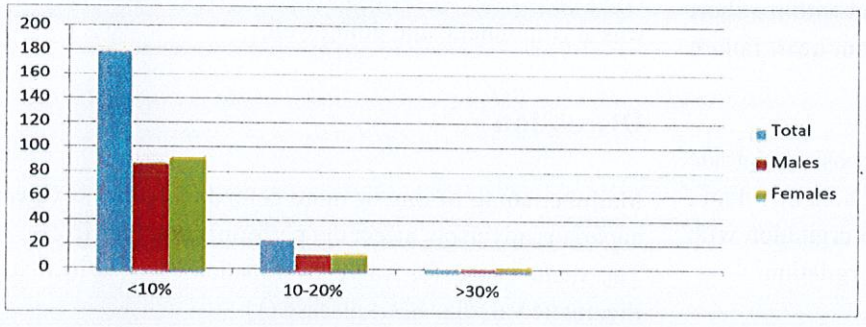


Fig. 4 Expected 10yr risk of a fatal or non-fatal cardiovascular event

Among those screened 29 (5.7%) had a risk score of ≥ 8.

- Among them 6 had positive Exercise Tolerance Tests and 3 underwent angiography.
- 2 had positive angiograms and subsequently underwent CABG and the other angiogram was negative. This pt has defaulted.
- Of the other 3, 1 is on medical management and 2 have defaulted follow-up.

## Discussion

In summary, among the screened population obesity is the number one risk factor.

Hyperlipidaemia, Diabetes Mellitus and Hypertension are the next commonest risk factors which have been detected. Family history of IHD and smoking have an important role in causing coronary events.

Where the levels were available, approx. 49% had a LDL >130mg/dl, and approx. 77% had a HDL <49mg/dl.

Of those assessed, 80% had a <10% risk for developing fatal or nonfatal cardiovascular events in 10 years according to the WHO/ISH risk prediction charts.

### Conclusions

A primary prevention program which was started 1 year and 4 months ago is being conducted successfully and we have screened more than 500 patients and taken proper individualized action as necessary.

So far our screened subjects have been only officers and teachers. So the results do not reflect the population as a whole. In the coming years we should be able to accommodate all levels.

And also at present we are unable to screen for the minor risk factors due to limited resources which we hope to do in the future. We look forward to providing this service free of charge in the future for the betterment of our society.

# Mechanical Triple valve Replacement in a Young Lady

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*Batticaloa Medical Journal 2016: 7: 26 – 27.*

Key words - valvular heart disease, mechanical triple valve replacement.

## Introduction

In recent years, single and double mechanical or bio-prosthetic valve replacement is used as common therapeutic interventions for chronic rheumatic valvular heart disease.

But mechanical triple valve replacement is a rare intervention as it is a challenging procedure with high morbidity and mortality.

There are no published or electronic reports available on Mechanical Triple Valve Replacement in Sri Lanka and it is a rare procedure even in other parts of the world.

## Case report

A thirty six year old housewife with multiple rheumatic valvular heart disease was referred to us for triple valve replacement.

She had been diagnosed to have rheumatic valvular heart disease in 1997 and had been followed up at a Medical clinic with optimal control till 2011. She started having recent onset episodic syncopal attacks and dyspnoea on moderate exertion which had progressed within a short period. Clinically she was NYHA II without heart failure features.

The 2D Echo revealed moderate mitral stenosis and grade III mitral regurgitation with a mitral valve area of 1.4cm$^2$, tight aortic stenosis and grade II aortic regurgitation with the presence of tricuspid stenosis and regurgitation.

Mechanical triple valve replacement was done on cardiopulmonary bypass. Sclerosed and stenosed aortic valve was replaced with a St Jude's 19mm mechanical valve. Number 25mm and 29mm ATS mechanical valves were used to replace stenotic mitral and tricuspid valves respectively. While doing the triple valve replacement, St Jude's permanent epicardial lead was screwed to the right ventricular epicardium and connected to the implanted pacing generator box.

Post-operatively her 2D echocardiograpic assessment revealed that all three prosthetic valves were functioning well and the patient was discharged with anticoagulation therapy to maintain the INR between 3 – 3.5.

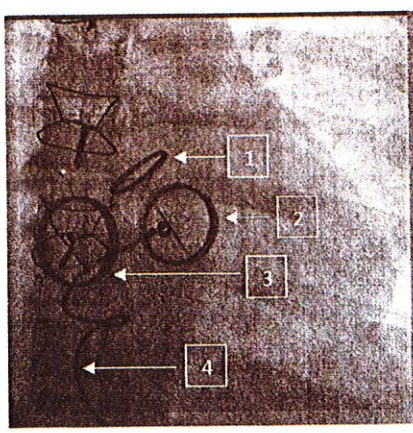


Figure 1: Fluroscopic cine showing triple valves

1. Aortic Valve
2. Mitral Valve
3. Tricuspid Valve
4. Epicardial Lead

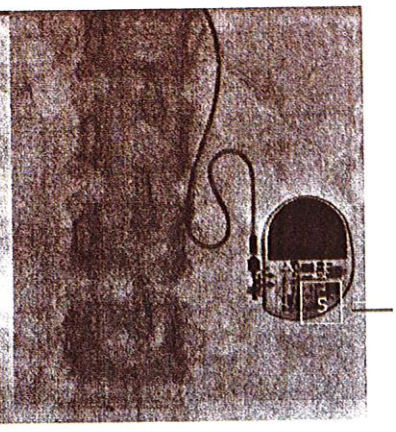


Figure 2: Fluroscopic cine of pulse generator box

5. Pulse Generator Box

After three years of surgery we have reviewed her and she was asymptomatic and doing well.

## Discussion

Malfunctioning of one or more components of the valve apparatus adversely affect the performance of a valve. The main cause for valve dysfunction is described as rheumatic valvular heart disease (1).

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The common pathological finding in rheumatic valvular disease is thickened valve cusps with fused leaflets and chordae (2).

In rheumatic valvular heart disease, the mitral valve is the most frequently involved. Aortic, tricuspid and pulmonary valves are affected less often. Although tricuspid regurgitation is common in rheumatic heart disease secondary to mitral valve stenosis, tricuspid stenosis is uncommon (3).

Usually, surgical intervention is preferable for malfunctioning valves before the patient reaches functional class IV heart failure, new onset atrial fibrillation or pulmonary hypertension.

Replacement of diseased cardiac valves with either a mechanical or biological prosthesis has become an established therapeutic procedure since the first aortic and mitral implants were done in 1960. Thereafter, it has undergone many modifications and improvements.

Tricuspid valve replacement is not a common surgery as it has always been a challenging problem, whether in isolation or in combination with the surgical approach to other valves (4). In general, tricuspid annuloplasty is the preferred treatment for moderate to severe tricuspid insufficiency. Tricuspid valve replacement is usually reserved for significant organic tricuspid valve disease and it is a beneficial procedure (5).

Although mechanical prosthesis and bio-prosthesis are equally effective in the tricuspid position, the choice of a prosthesis for replacement of the tricuspid valve remains controversial. Although the low pressures and flows in the right side of the heart predispose mechanical prosthesis to a high rate of valve thrombosis, mechanical valves should be considered for tricuspid replacement in young patients and in patients with mechanical valves implanted in the left side of the heart.

There is a high chance that the AV node maybe damaged during the tricuspid valve replacement due to its anatomical position very close to the septal leaflet of the tricuspid valve. Therefore at the time of mechanical triple valve replacement, a permanent electrical pacemaker lead is implanted on the myocardium to provide access in case a pacemaker implantation may be required in the future. It is impossible to implant an endocardial pacemaker lead after tricuspid valve replacement with a mechanical valve because it will prevent the mechanical valve leaflet closing.

## Conclusions

Survival rates of triple valve replacement are not significantly different from that of double valve replacement and excellent symptomatic improvement can be obtained.

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# Kruckenberg tumour arising from the Sigmoid colon

B Prashanthan and HR Thambawita

*Batticaloa Medical Journal 2016: 7: 28 – 29*

Keywords - Adenocarcinoma, Kruckenberg tumor, signet ring.

## Introduction

Signet ring cell carcinoma is a rare histologic subtype of colonic malignancies. Due to the intracellular mucin production it pushes the nucleus to the periphery hence has the shape of a signet ring (1). It is usually seen in stomach cancer and colonic involvement is rare (1).

Primary signet ring cell carcinoma of the ovary is rare. Krukenberg ovarian tumours are rare and usually originate from stomach. Here we report a Krukenberg tumour of the ovary arising from a carcinoma of the sigmoid colon in a young lady.

## Case report

A 32 year old previously healthy lady, a mother of a 2year old child, presented with the complaint of lower abdominal pain and constipation for 3 months duration. The pain was intermittent and colicky in nature and mild to moderate in severity. There was no history of per rectal bleeding, dark stools or altered bowel habits. Nor did she have any menstrual abnormalities either. There was no suggestive family history.

General and abdominal examination including the digital rectal examination, were unhelpful. Initial haematological and biochemical profiles were within the normal limits. But an ultrasound of the abdomen revealed a thickened loop of sigmoid colon and mild enlargement of the left ovary. She underwent colonoscopy which also disclosed narrowing of the sigmoid lumen but the biopsy was one of chronic colitis. Subsequent contrast enhanced abdominal computed tomography (CECT) reconfirmed the thickening and narrowing of sigmoid loop for an extent of 6.8cm and the presence of enlarged peri-colic lymph nodes. The Carcino-embryonicantigen (CEA) level was marginally elevated to 5.15 ng/ml.

A Sigmoid colectomy was planned and a laparotomy was performed. Highly inflamed and a thickened sigmoid loop was found with enlarged peri-colic nodes and was removed *en masse*. Continuity was restored with an end-to-end anastomosis. During exploration, a suspicious mass was found in the right ovary and according to the gynecologist's advise a right oophorectomy done. Although radiologically mildly enlarged, the left ovary was considered normal. There were no other deposits on the peritoneal survey.

Histology indicated the presence of a 90mm signet ring cell adenocarcinoma in the sigmoid colon with muscular invasion. Resection margins were free. 4 out of 5 lymph nodes were positive for tumour deposits.

Histology of the ovarian mass (32x28x50mm) exhibited multiple invasive foci of signet ring cell adenocarcinomata. TNM staging - pT4bpN2pM1 and Duke's staging was D.

Subsequent upper gastrointestinal endoscopy excluded a gastric primary.

The follow up ultrasound scan of the abdomen 8 weeks later revealed the presence of a significant amount of ascites with the suspicion of liver metastasis and a pelvic mass.

## Discussion

Signet ring cell adenocarcinomata are rare, and are usually diagnosed at advance stages (2). Among the colonic malignancies, Signet ring adenocarcinoma is seen in the young (3). In our pt, Malignancy was not high in the list of differential diagnoses as the pt was young, there was no mass radiologically and the CEA level was only marginally elevated.

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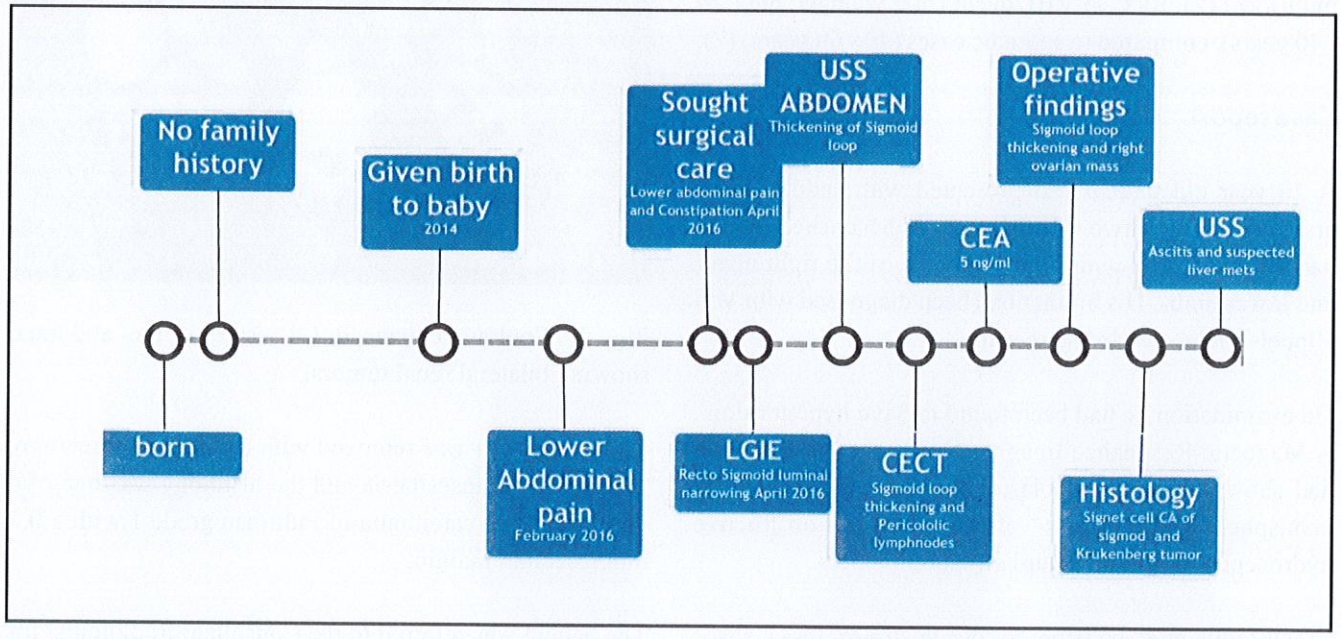
As signet ring carcinoma is usually diagnosed at later stages, they will generally have distant metastasis and hence the survival rate is also very poor (4).Our pt is a good example of the aggressive nature of this disease entity.

Signet ring cell carcinomas and mucinous adenocarcinomas are the colorectal carcinomas that predominantly metastasize to the peritoneum and ovaries (5). In our pt, even though the operative findings were negative for peritoneal deposits, after 8 weeks there was radiological evidence suggestive of liver metastasis and malignant ascites.

## Take home message

- Signet cell adenocarcinoma of colon has a tendency to metastasize to ovary with a resultant Kruckenberg tumor.
- Its prognosis is poor due to presentation at advanced stages.
- Out of the colonic malignancies, signet ring cell adenocarcinoma is not uncommon in the young.

## Timeline

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# Synchronous Bilateral Renal cell carcinoma in Von Hippel-Lindau syndrome; treatment with Partial nephrectomy and Radio frequency ablation

MRA Nihaj, B Balagobi and S Chandrasekara

*Batticaloa Medical Journal 2016;7: 30 - 31.*

## Introduction

Renal cell carcinoma (RCC) can be sporadic or familial. Von Hippel-Lindau (VHL) disease accounts for 1.6% of unselected RCC patients. Around 5% of RCC patients will have bilateral synchronous tumors (1). Fifty percent of VHL patients get RCC which is often bilateral and multifocal (2). RCC in VHL occurs at a younger age ( 20 - 40 years), compared to sporadic cases (40 - 60 years) (2).

## Case report

A 26 year old patient had presented with sudden onset ataxia following a two month history of headache. He had had blurred vision with mild weakness of the right upper and lower limbs. His brother had been diagnosed with Von Hippel-Lindau syndrome recently.

On examination he had been found to have hypertension. A Magnetic Resonance Imaging (MRI) scan of the brain had shown a haemangioblastoma in the right cerebellar hemisphere with mass effect causing obstructive hydrocephalus and tonsillar herniation.

Craniotomy and excision of the posterior fossa space occupying lesion had been done and the patient's ataxia had improved.

As the patient remained hypertensive a contrast enhanced CT of the abdomen was done which indicated the presence of three heterogeneously enhancing solid renal mass lesions suspicious of renal cell carcinoma. Two were in the right kidney measuring 1.7 cm × 1.9 cm × 2 cm and 2 cm × 2.1 cm × 2 cm (T1a N0 M0) postero-medially in the interpolar region and the lower pole respectively. One was in the lower pole of the left kidney measuring 3.3 cm× 3.9 cm × 4 cm (T1a N0 M0).

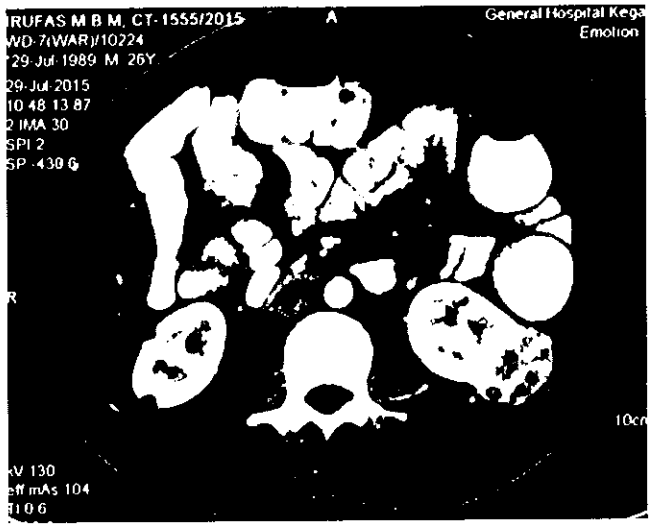


Fig. 1. Contrast enhanced CT scan of the abdomen showing bilateral renal tumors.

The left tumour was removed with a partial nephrectomy under general anaesthesia and the histology was one of a clear cell renal carcinoma of Fuhrman grade 1 with a 0.5 mm resection margin.

The patient was referred to the Consultant Radiologist for radio frequency ablation (RFA) of the right renal tumors which were carried out under local anesthesia with Ultra Sound guidance. Repeated contrast enhanced CT scan showed residual tumors in the right kidney and the patient underwent repeated RFA and both tumors were ablated completely.

## Discussion

Renal Cell Cancer is the third most common genito-urinary malignant disease.

Patients with small renal tumors have similar perioperative morbidity and outcome regardless of whether they are treated with partial or radical nephrectomy.

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Therefore, partial nephrectomy remains a safe alternative for tumors of this size (3) while preserving some renal tissue.

The right sided tumors were treated with Radio frequency ablation because of their small sizes and the peripheral location.

## Conclusions

RFA is a promising minimally invasive therapy for RCC in patients who are not good operative candidates (4). Large tumors also can be treated with repeated radiofrequency ablation (4).

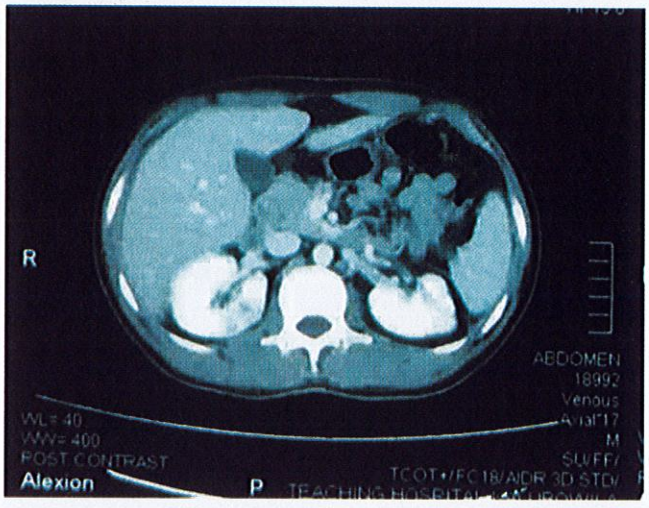


Fig. 2 - Contrast enhanced CT of the abdomen showing post partial nephrectomy left kidney and enhancing residual lesion in right kidney following the first radiofrequency ablation session.

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# Dermatofibrosarcoma Protuberans of the Forehead

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*Batticaloa Medical Journal 2016: 7: 32 – 33.*

## Introduction

Dermatofibrosarcoma Protuberans (DFSP) is an uncommon fibrohistiocytic tumour. It is a slow to intermediate growing tumour and commonly affects middle aged people. DFSP commonly occurs in the trunk and then the limbs. The potential for distant metastasis is low, but in DFSP local recurrences are common (1).

## Case report

A 33 year old male had observed a small lump in the forehead region 8 months ago. He had been symptomless and had had no history of weight loss, night sweats, fevers or chills. The lymph nodes in the head and neck region and the axillae had been non-palpable. The lump had gradually increased in size. It had been clinically diagnosed as a sebaceous cyst and surgical excision had been done, but he had not received the histological report.

A couple of months later he had developed a lump at same site of the forehead and this had gradually increased in size. The history was uneventful and the examination findings were similar to the first episode.

Thereafter, he underwent surgery again with the histology indicating that it was a Dermatofibrosarcoma Protuberans( DFSP) with margin involvement.

Therefore, he underwent a wide local excision with full thickness skin grafting of the defect.

Histology and immuno-histochemistry confirmed the diagnosis.

## Discussion

Dermatofibrosarcoma Protuberans (DFSP) is a very rare type of a soft tissue sarcoma, which originates in the deep layer of skin.

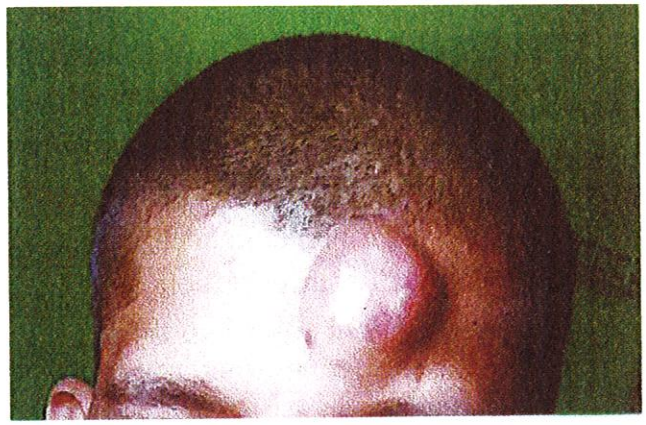

Fig. 1 Photo taken before surgery for the recurrence

DFSP had been first discussed in literature in the 1890s, but Darier and Ferrand first documented it as a distinct cutaneous disease in 1924. In 1925 Hoffman used the term of "dermatofibrosarcoma protuberans" (2).

DFSP accounts for less than 0.1% of all malignancies as well as 1% of all soft tissue sarcomata. DFSP is the most common type of skin sarcoma. The incidence of DFSP is very low and in United Status the incidence of DFSP has been estimated to be 0.85 cases per million population per year (2). It shows a male predominance.

DFSP usually starts as a small, thickening of the skin and ultimately the size varies between one to five cms. The colour can be variable, including the colour of normal skin.

The lump gradually increases in size over months to years (3).

In the early stages, the lesions may clinically resemble benign skin lesions and lead to confusion in diagnosis and delay in treatment. But in advanced stages lesions are ulcerated. Occasionally these tumours contain gelatinous material or altered blood in degenerated cystic areas. Redness and pain occurs in only 15% of cases (3,4).

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DFSP frequently affects trunk (40 – 60%), followed by the limbs(20 –30%) and the head and neck (10% – 16%) (1).

It has a low incidence of metastasis, either to regional nodes or distant sites. Recurrence occurs in up to 60% of the patients.

Genetic studies in DFSP shows translocation between chromosomes 17 and 22 (1). Microscopic studies show various types such as Bednar tumours, myxoid DFSP, Giant cell fibroblastoma, fibrosarcomatous type.

Molecular techniques like multiplex reverse transcription polymerase chain reaction (RT-PCR) and fluorescence in situ hybridization (FISH) are useful in investigations (4).

Surgery is the definitive treatment and the Mohs micrographic surgery is the treatment of choice for DFSP (1).

Inoperable, recurrent DFSP can be treated with Imatinib, a tyrosine kinase inhibitor and radiation therapy.

Local recurrence of DFSP commonly occurs in first few years, therefore continuous follow up is necessary (1).

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# Splenic Melioidosis

C Saseetharan and S Branavan

*Batticaloa Medical Journal 2016: 7: 34– 35.*

## Introduction

Melioidosis is an infectious disease caused by the gram negative bacterium *Burkholderia pseudomallei* found in soil and water. Melioidosis is endemic to Australia and South-east Asia (1). However now, there is an increasing number of cases reported in regions where melioidosis has not been encountered.

It can manifest as an acute or chronic infection. Acute melioidosis usually presents as pneumonia, osteomyelitis, septic arthritis, cellulitis, liver abscess, splenic abscess etc. Chronic melioidosis is defined by duration of symptoms greater than two months.

Risk factors are Diabeties mellitus, thalassemia, renal disease, alcohol use, cirrhosis, malignancy and occupational exposure to mud and pooled surface water (2).

## Case report

A 52 year old previously healthy farmer presented with left sided upper abdominal pain for one month associated with a low grade fever, loss of weight and loss of appetite.

There was no history of a chronic cough or a contact history of tuberculosis. Other than the above symptoms there was no history suggestive of peptic ulcer disease, renal disease or malignancy.

On abdominal examination there was left hypochondrial tenderness with splenomegaly. The other systems were normal.

The white cell count was 16900/ul with a neutrophilic leucocytosis and the blood picture was normal except for a mild neutrophilia. C-reactive protein were elevated (375mg/l) and the ESR was 128mm/1$^{st}$ hour. Sputum was negative for Acid Fast Bacilli. The chest x-ray, hepatic and renal function tests were normal. Ultrasound scan of the abdomen indicated splenomegaly with a left subdiaphragmatic collection. Contrast Enhanced CT scan of the abdomen revealed a left subdiaphragmatic collection with focal hypo echoic regions in the spleen.

From admission he was treated with broad spectrum antibiotics but with no improvement.

Therefore, he underwent an exploratory laparotomy. At surgery, there was a massively enlarged spleen with multiloculated abscesses and a left subdiaphramatic collection of pus. The pus was drained and a splenectomy was done.

Histology of spleen was one of multi suppurative granulomata without caseation or fungal elements.

Pus and the blood cultures were positive for *Burkholderia pseudomallei.* The diagnosis was confirmed with Polymerase Chain Reaction(PCR).

Fig.1The cut open spleen in the lab

He was treated with intravenous Ceftazidime for two weeks. Following treatment of the acute disease, eradication treatment with Co-trimoxazole & Doxycycline was started for twelve weeks to reduce the rate of recurrence.

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## Discussion

Splenic melioidosis is a rare clinical entity (3). As splenic melioidosis was not suspected initially, bacterial cultures were not done. But, after splenectomy blood samples and pus from the spleen were sent for culture. Both were positive for *Burkholderia pseudomallei.* Once the cultures were positive antibiotics were changed to intravenous Ceftazidime.

*Burkholderia pseudomallei* can be detected by a novel In Situ (ISH) method and can be confirmed by polymerase chain reaction (4). This patient's melioidosis was confirmed with PCR.

Factors associated with increased mortality of patients are: a positive blood culture for *Burkholderia pseudomallei,* presence of pneumonia, septic shock, superimposed nosocomial infection and inappropriate antibiotic treatment (5). Intravenous ceftazidime is the current drug of choice. Following treatment of the acute disease, eradication treatment with Co-trimoxazole & Doxycycline is recommended to reduce the rate of recurrence.

## Conclusions

Splenic melioidosis is usually managed conservatively with the appropriate antibiotics and aspiration of pus. But, occasionally splenectomy is needed (6).

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# Deep Fungal Infection in the Infratemporal Fossa

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*Batticaloa Medical Journal 2016: 7: 36 – 37.*

## Introduction

Deep fungal infections (DFI) of the infratemporal fossa (ITF) are extremely uncommon and potentially fatal (1,2).

DFI affect the tissues beyond the mucosal layers and often present as a part of a systemic infection, more frequently in immune-compromised patients. ITF infections are generally reported to occur with external otitis, orbital cellulitis, pan-facial cellulitis, maxillary sinus fractures, neighbourhood infections and even from mediastinitis. There are a few cases in literature which report ITF infections arising from odontogenic infections or following dental extractions of maxillary or mandibular molars( infected hematoma, needle tract infections etc.) (1,2).

Management of DFI requires aggressive antifungal treatment and surgical debridement (3).

## Case history

A fifty six year old male with no history of Diabetes Mellitus presented to the Oral and Maxillo-facial Unit, Teaching Hospital, Karapitiya in in March 2014 complaining of trismus and pain in the right temporal region and ear, with a bony hard swelling in the right infratemporal region extending to the right maxillary region (Fig. 1). He had no history of sinusitis but had a history of a non-healing ulcer on the right lower alveolus in 2005 which had been diagnosed as a well differentiated squamous cell carcinoma. Subsequently, he had undergone a hemimandibulectomy and a supraomohyoid neck dissection. Afterwards he had been disease free.

Therefore the provisional diagnosis was a recurrence of the tumour extending into the ITF.

The computerized tomography (CT) of the midface also gave the impression of a recurrence of the tumour in the infratemporal region.

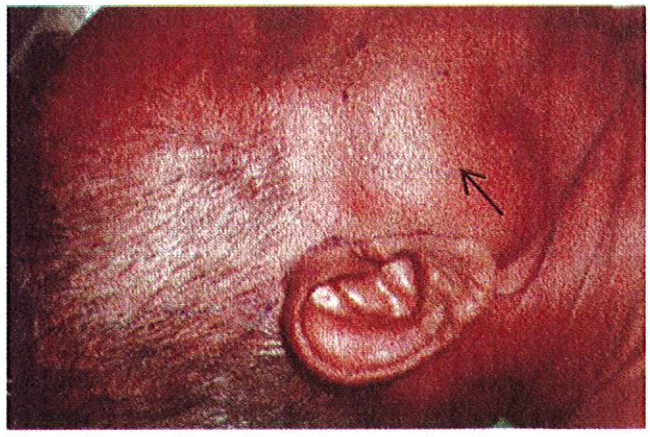

Fig. 1. The swelling of the infratemporal region

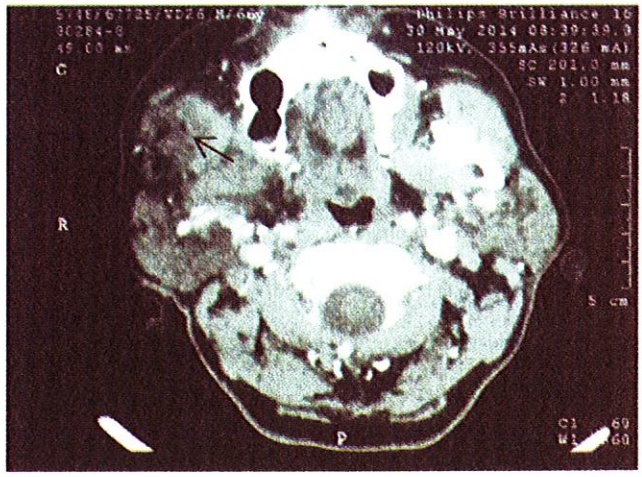

Fig. 2. CT scan indicating the lesion

The lesion was removed under general anesthesia, through a hemi-coronal approach and sent for histopathological studies. It was reported as a deep fungal infection.

Thereafter the patient was started on systemic antifunglas - intravenous fluconazole 20mg tds for one week, and as he improved clinically was discharged on oral antifungals - 150mg of fluconazole per day for two more weeks.

His mouth opening improved with treatment and the infratemporal swelling also subsided gradually. He was kept on review on an outpatient basis and has remained disease free for the last two years.

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## Discussion

Deep fungal infections are quite rare in immuno-competent patients. Therefore it is wise to check the patient's immuno-competence in such instances (2). Facial swelling and fullness of infratemporal area is usually apparent on clinical examination but are non-specific (2). Trismus occurs as a result of extension of the infection to the pterygoid space due to the spasm of the muscles of mastication. Interestingly, even though the clinical signs and symptoms are logical from an anatomical basis, the diagnosis of ITF infections remain a challenging task (1). Proper diagnosis and prompt surgical intervention is mandatory as these could become life threatening due to the possibility of the infection extending intra-cranially (1,2).

Imaging studies are important for surgical planning. Compared to CT scans, magnetic resonance imaging (MRI) is better for assessing soft-tissues (1). Nevertheless, it is often difficult to differentiate between infections and tumours, as it was in this pt, where clinical and radiological features were nonspecific (1). Chronic infections may mimic tumours with swelling and trismus without fever; as opposed to acute infections where there is usually pain and fever (1). In fact, our initial impression was of a recurrent tumour. As such, confirmation with histopathology and culture are obligatory for a definitive diagnosis.

Following the diagnosis it is imperative to administer strong systemic antifungals to address the fungal infection to eliminate it (3).

The recommended antifungal drugs are systemic amphotericin B, itraconazole, fluconazole, voriconazole, and posaconazole (4). As these are hepatotoxic it is important to assess the liver function prior to initiation of treatment and to monitor them during treatment. Response to the antifungal may be assessed by means of C-reactive protein levels. Usually, fungal infections are difficult to eradicate. Hence, the need for strong antifungals for a longer duration, compared to bacterial infections.

### Conclusions

Infratemporal fossa deep fungal infections are very rare and are difficult to diagnose and treat. Once diagnosed such infections need surgical debridement along with strong antifungal treatment. Response to treatment is generally good when diagnosed early.

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# Acquired Subclavian Steal syndrome; a rare cause for Paroxysmal vertigo and syncope.

A Jasiththa[1], T Kumanan[1], N Suganthan[1] and P Lakshman[2]

*Batticaloa Medical Journal 2016: 7: 38 – 39.*

Key words - subclavian steal, posterior circulation ischemia.

## Introduction

Subclavian steal syndrome is an uncommon cause of vertigo, even though vertigo is the typical presentation of this syndrome. The symptoms are usually provoked by exertion of the respective upper limb. Typical symptoms include arm claudication and symptoms of posterior circulation ischemia such as vertigo, ataxia, and tinnitus. Common causes are atherosclerosis, giant cell arteritis and Takayasu's arteritis.

Here we describe an uncommon cause of subclavian artery occlusion.

## Case report

A 65 year old male presented with a history of paroxysmal vertigo and dizziness of 2 years duration. His vertiginous symptoms were brought on by performing certain activities with the right hand such as sweeping and ironing and was relieved by cessation of such activities. He also admitted that he had been feeling a sensation of numbness and tingling of his right fingers while plucking flowers. Furthermore, he had experienced 2 episodes of syncope on strenuous exercise involving his right hand.

On questioning, his symptoms were not associated with positional changes or suggestive of a cardiac aetiology. He had had a vascular repair done 5 years back for a right subclavian artery aneurysm which had occurred as a result of a road traffic accident.

Examination revealed a significant inter arm blood pressure difference (Right 110/70, left 160/110) and right subclavian bruit. Rest of the neurological examination was unremarkable. He had undergone a doppler ultrasonography of the upper limbs which revealed an occlusion of the right subclavian artery. A reversed right vertebral arterial flow was demonstrated on hyperemia–ischemia cuff test during the Doppler study. Subsequent arch aortography and coronary angiogram revealed total occlusion of right subclavian artery at its origin and near normal coronary epicardial vessels.

Fig. 1 Arch aortogram showing total occlusion of right subclavian artery at its origin

## Discussion

Subclavian steal syndrome is a vaso-occlusive disease involving the subclavian artery proximal to the origin of vertebral artery resulting in retrograde flow in the ipsilateral vertebra-basilar artery.

The vertebra-basilar insufficiency results in typical posterior circulation ischaemic symptoms.

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With exercise, metabolite induced vasodilatation of the upper limb vessels and a mismatch between the blood flow and the metabolic needs leads to claudication of the arm. Reduced peripheral resistance in the upper limb leads to retrograde flow from the vertebra-basilar system which consequently results in posterior circulation ischemia (1).

One theory suggests that subclavian steal does not produce symptoms of cerebral ischemia in the absence of other arterial lesions, in particular hemodynamically significant disease in the carotid artery territory (2).

The symptoms could be graded as asymptomatic, oligosymptomatic and completely symptomatic based on the degree of symptoms of arm claudication and posterior circulation ischaemia.

Typical symptoms are vertigo, dizziness, ataxia, nystagmus, visual disturbances and tinnitus provoked by upper limb exertion.

There would be an inter arm blood pressure difference of >20mmHg and the magnitude of the blood pressure difference correlates with the severity of symptoms (3).

Common aetiology for subclavian occlusion are atherosclerotic disease, Takayasu arteritis and giant cell arteritis.

Diagnosis of subclavian steal is clinical. An inter arm blood pressure difference greater than 20mm Hg has been proved to be a sensitive threshold for the detection of subclavian steal. The prevalence of the syndrome in patients fulfilling this criteria range from 78% to 88% (4).

Noninvasive color Doppler is regarded as the standard investigation tool for diagnosis.

The hyperemia–ischemia cuff test is a diagnostic test often monitored with the ultrasound to uncover any occult steal. It is normally induced by inflating the arm blood pressure cuff to at least 20mm Hg above the systolic blood pressure for a few minutes. A rapid deflation of the cuff will lead to increased blood flow in the arm, and if the patient has a hidden subclavian steal, there will be a reversal of blood flow in the ipsilateral vertebral artery. This retrograde flow can be observed using the ultrasound.

CT or MR angiography is the confirmatory test to show the exact site of stenosis as well as other sites of occlusion.

Only a small percentage of patients need surgical intervention.

The blood pressure difference also correlate with the need for surgical intervention. If the patient is oligo symptomatic, a conservative approach is used. Management of vascular risk factors such as dyslipidemia, diabetes, hypertension and cessation of smoking is pivotal.

Endovascular treatment and open surgical interventions like bypass grafting are reserved for patients with intractable symptoms.

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# Kallmann syndrome with Short Stature

S Thimbirigahaarawa and D Karuppiah Pillai

*Batticaloa Medical Journal 2016: 7: 40 – 41.*

Key words - Hypogonadotophic hypogonadism, anosmia, Kallmann syndrome, short stature.

## Introduction

Kallmann syndrome is a form of hypogonadotrophic hypogonadism; characterized by a delayed or absence of puberty in association with an impaired sense of smell (1).

This condition occurs due to the abnormal migration of gonadotrophin releasing (GnRH) neurons as well as the olfactory neurons from the olfactory placode to the forebrain and hypothalamus during fetal life (2). Either anosmia or severe hyposmia is present in these patients and that feature distinguishes Kallmann syndrome from most other forms of hypogonadotrophic hypogonadism.

This condition can be associated with a number of phenotypical abnormalities. Since this is a rare genetic condition the number of patients in any geographical area is very small. The prevalence of Kallmann syndrome is 1 in 10000 males and 1 in 50000 females with a male to female ratio of 5:1.

Mode of inheritance is mainly autosomal dominant and rarely autosomal recessive or X-linked recessive (3). Most patients seek medical consultation during adolescence due to under development of secondary sex characters. Timely diagnosis and management has a good prognosis. One such case is described here.

## Case report

A 19 year old young male was referred to the Endocrine unit due to the absence of secondary sex characters. He was not a product of a consanguineous marriage. He had achieved his milestones age appropriately and had been average in school performances. He had two siblings and they were healthy.

On physical examination, the patient's vital signs were within the normal range. He was 149cm tall and 34kg in weight with a body mass index (BMI) of 15kg/m$^2$. Both his height and weight were less than the 3$^{rd}$ centile. He lacked axillary and pubic hair. On examination of the external genitalia he had a small penis with a phallus length of 4 cm and a right testis of 1ml and a left testis of 2ml in volume, consistent with a Tanner stage of 1.

In addition he had anosmia which was verified by testing with different types of smells. He did not have any nasal blockage or any midline defects such as a cleft palate or a cleft lip.

A Full endocrine evaluation was done (Table 1), which revealed markedly low serum testosterone levels with low serum luteinizing hormone (LH) and low serum follicular stimulating hormone (FSH) levels consistent with hypogonadotrophic hypogonadism.

Since he was short, the Insulin tolerance test (ITT) was carried out. Post-test serum cortisol level was 600 nmol/l and the growth hormone (GH) level was 25mIU/l which ruled out GH insufficiency. X-ray of the left wrist was done to assess the bone age and it was compatible with his chronological age. MRI scan showed a normal hypothalamus and pituitary gland and no abnormality was noted in the olfactory bulbs and sulci.

Secondary hypogonadism due to Kallmann syndrome was diagnosed based on the results of investigations and the presence of anosmia in this patient. Following discussion with the patient and the family, testosterone replacement (by intramuscular injection) 125mg four weekly was initiated to maintain secondary sex characters. After three months of treatment, there was improvement in his Tanner stage with the penile shaft increasing to 7 cm and the pubic hair stage to Tanner II. He gained 3cm in height during this period.

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| Test | Results | Normal range[1] |
|---|---|---|
| Testosterone | 0.03 | 29-100ng/ml |
| LH | <0.216 | 1.31-10.50mIU/L |
| FSH | 1.47 | 1.55-9.74mIU/L |
| Prolactin | 344.7 | 78-380mIU/L |
| Cortisol 9.00am | 255 | 123-623nmol/L |
| TSH | 2.12 | 0.46-4.68mIU/L |
| Free T4 | 12.0 | 10.0-28.2pmol/L |
| Cortisol (post ITT) | 600 | >550 nmol/L |
| GH (post ITT ) | 25 | >20mIU/L |

Table 1. The endocrine evaluation

## Discussion

Kallmann syndrome is a rare genetic condition in which hypogonadotrophic hypogonadism and anosmia coexist (1).

Most cases are familial and some of the genes involved in pathogenesis of Kallmann syndrome have been identified. They are KAL1 gene, FGFR1, CHD7, DAX1, PC1, TAC3, TACR3, and NELF (4). However, the genes involved remain unidentified in over 50% of patients.

Kallmann syndrome was first described by Maestre de San, a Spanish anatomist in 1856. In 1944, Franz Joseph Kallmann, a German geneticist characterized this as a hereditary condition by studying three families (3).

The usual presentation of this condition in the male is with under development of secondary sexual characters such as micropenis, absence of voice change and absence of definite hair distribution (2). Our patient also presented with lack of secondary sex characters. Females usually present with primary amenorrhea, poor breast development, and Tanner stage II - III pubic hair (5). Both sexes can present with infertility. Height for age is normal in these patients and they may even be tall statured because of delayed closure of epiphyses.

Unusually our patient had short stature and was under-weight which may have been familial or nutritional. In addition he had normal GH levels which excluded GH insufficiency.

Testosterone is given as a part of replacement therapy to restore the secondary sex characters and virilization. Our patient gained significant height with testosterone replacement. Periodic monitoring of liver function, haematocrit and lipids is needed. Prostate specific antigen (PSA) should be monitored for patients above 45 years.

Pulsatile treatment with GnRH can be used to restore fertility. Counselling the patient and the family regarding the clinical condition and the necessity of regular follow up is an important role in management because it can prevent the development of psychosocial problems.

## Conclusions

Although Kallmann syndrome is a rare cause of hypogonadism, clinical suspicion is necessary when patients present with delayed puberty or short stature. Timely treatment is vital to avoid long term adverse effects of androgen deficiency.

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