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Manuscripts for "Stanley Medical Journal" is to be submitted by e-mail to

smj.journal@gmail.com
Warm Greetings to all from the Editorial Committee of Stanley Medical Journal! SMJ was launched during the 10th edition of the annual International Medical Conference of Stanley Medical College, EMPOWER 2014 in September. So, the question arises: Why was this endeavor taken up? Why is Research given so much importance? The answer is a mystery to most medical students.

In this day and age of advancements in science and technology, where robots may soon replace the noblest of noble professionals, whom everyone knows as Doctors, it is the future generation that holds responsibility for keeping this profession at pace with the ongoing developments. It may not be possible for all students to discover or invent something new but it is definitely within the realm of possibility for each and every one to probe into an area of interest which has been previously put forth by another person of eminence. In simple words, this is what is called research. The basic idea of Research is to inculcate interest among the young doctors and to increase curiosity which has often been the starting point of path breaking discoveries.

Stanley Medical Journal aims to provide a platform for teachers and students to make a mark and publish their original research articles. It is a matter of great honor for us to say that SMJ has been given an ISSN number into its second issue, which now makes it an officially recognized Journal. We therefore encourage students and teaching faculties of various Medical Institutions to send in original research articles, case reports to nurture interest among other students to take up research in a fruitful manner.

The good clinician satisfies a few thousands during his lifetime. A good researcher satisfies millions. So, may the path of research and satisfaction begin!
Why do we do basic research? To learn about ourselves.

RESEARCH IS TO SEE WHAT EVERYBODY ELSE HAS SEEN, AND TO THINK WHAT NOBODY ELSE HAS THOUGHT.
A COMPARATIVE STUDY ON THE CONTRACEPTIVE METHODS PREFERRED IN RURAL AND URBAN AREAS IN TAMIL NADU

Anjana Vaidyanathan 1, K. Caroline Priya 2, P. Seenivasan 3, G. Malini 1, T. Kaarthika 1, Deepa Nathan 1, M. Aarthi 1

Abstract

Introduction: Every fifth birth in the world is an Indian, and 50% percent of the Indian population are of reproductive age. There is still a large unmet need for contraception in India, and efforts to tackle the situation need to be strengthened. The prevalence of male sterilisation still stands at a meagre 2%.

Aim: To assess the preference of eligible couples for adoption of permanent methods of contraception

Methodology: This cross-sectional study was conducted among eligible couples who have at least one child, was conducted for a period of 3 months (June – September) 2009, in Sanjeevaramanpet an urban health post (Chennai district), and Alamadhi a rural PHC (Thiruvallur district) which are the field practice areas of the Community Medicine Department.

Results: The most preferred method of contraception in both urban and rural areas was found to be permanent method of contraception namely Female Sterilization. In an attempt to find awareness about non-scalpel vasectomy among our study subjects, we found that only about 65% of the subjects were aware. However, the awareness was more among the urban population. A higher awareness level was also noted among the higher income groups and a higher education status. Most of the males agreed frankly that they were not interested in considering a vasectomy in future, the few who agreed also belonged mostly to the urban study area. The main reason for acceptance was limitation of family size. Few of those who were aware of non-scalpel vasectomy believed in some myths about the procedure, the same are responsible to some extent for the non-acceptance of the procedure. The rural and urban population can be seen to derive their knowledge on non-scalpel vasectomy from the general practitioners. When compared to non-scalpel vasectomy, however, a much higher awareness was seen to be prevalent on tubectomy. Last but not the least, most of the study subjects were not curious to know more about non-scalpel vasectomy, as they strongly believed that family planning is a responsibility of the females.

Key words: Contraception, non-scalpel vasectomy, tubectomy.

INTRODUCTION

India will soon become the most populous country in the world. Her population, already well over 1 billion, could become double that figure by the end of this century. Ever since Independence, the population explosion has been one of the major issues of concern for the government. Despite the sixty years that have passed since then, all efforts in that direction have failed to produce any noteworthy results.

Over a quarter of India’s population lives below the poverty line (28.6%). 80 percent of the population lives on less than 2 dollars a day. It is well known that living conditions in India are amongst the poorer nations of the world. India’s population growth rate is 1.74% and the total fertility rate is 2.85%. Every fifth birth in the world is an Indian, and 50% percent of the Indian population are of reproductive age.1

India was one of the first countries of the world introduce a national family planning programme in 1962. This was later expanded to include other aspects of family welfare, such as immunisation, pregnancy, postpartum care, maternal and child health. The programme gradually broadened to include private and non-governmental sectors, and the couple protection rate has increased to 44% in 1999. Though these are praiseworthy results, it is to be accepted that there is still a large unmet need for contraception in India, and efforts to tackle the situation need to be strengthened.2

India’s gender inequality scale is tilted in favour of men, and they have an important role in reproductive and family health situations. Women have always borne the responsibility of limiting the family, as evinced by the widespread acceptance of tubectomy accounting for 38% of the couple protection rate. Despite the fact that the newly introduced Non-Scalpel Vasectomy is a nearly painless short procedure, with virtually no other negative effects, the

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prevalence of male sterilisation still stands at a meagre 2%. Therefore, there is a growing realisation that unless men are reached, the Reproductive and Child Health Programme, including family welfare efforts, will have limited impact. Since men are the dominant decision makers in India, it is prudent to discover the knowledge, perception, attitudes and contraceptive practices of men and improve their involvement in reproductive health needs of family. Addressing misconceptions, myths and other barriers to the acceptance of male sterilisation could largely improve the effectiveness of the India’s family planning policies.

OBJECTIVES

1. To assess the preference of eligible couples for adoption of permanent methods of contraception.
2. To assess the reasons for preference of tubectomy.
3. To assess the reasons for not adopting vasectomy.

METHODOLOGY

This cross-sectional study was conducted among eligible couples who have atleast one child. Ethical approval was obtained from the Institutional Ethical Committee of Govt. Stanley Medical College prior to commencing the study. The study was conducted for a period of 3 months (June – September 2009, in Sanjeevarayanpet an urban health post (Chennai district), and Alamadhi a rural PHC (Thiruvallur district) which are the field practice areas of the Community Medicine Department. The sample size consisted of 301 respondents (149 in Sanjeeverayanpet, 152 in Alamadhi), convenience sampling method was followed. Inclusion criteria: Couples in the average reproductive age – males: 20-50 yrs, females: 15-45 yrs, Eligible couples who have atleast one child. Exclusion criteria: Childless married couples, couples outside the reproductive age bracket mentioned above, unmarried people

The study started with an introduction to the eligible couples about the nature and purpose of the study and informed consent was obtained. Data was collected on the family planning awareness of the respondents according to the questionnaire.

The questionnaire collected data on the Age, Sex, location, education, occupation, number of children with their sexes, family life, current usage of contraception, preferred methods of contraception, their attitude towards family planning, knowledge about vasectomy and tubectomy.

The Data thus obtained was collected and stored both physically and on computer data bases. The data collected was analyzed by a combination of SPSS 16.0 software and Microsoft Excel.

RESULTS

The study population consisted of 301 respondents 74 females and 75 males in Sanjeeverayanpet, 75 females and 77 males in Alamadhi, the urban and rural field practice areas of the community Medicine department of Stanley Medical college. The income and education status is given in table 1.

The most preferred method of contraception in both urban and rural areas was found to be permanent method of contraception namely Female Sterilization this can be seen in table 2.

Awareness about Non-scalpel Vasectomy

Out of the 301 respondents surveyed, 197(65.4%) were aware of the existence of Non scalpel vasectomy. This awareness was greater among the urban population (table 4). Contrary to the level of awareness of Non-scalpel Vasectomy, the degree of awareness of tubectomy was far superior with only 2% of the population who did not know of the existence of the procedure (table 3).

Reasons for choice of contraception

Out of the 197 persons who were aware of non-scalpel vasectomy, 17 persons (8.6%) were ready to take up the procedure, while 180 persons were not willing to take it up. The various reasons given for their responses have also been studied, where the majority of the population feel that it is more convenient for the women to undergo tubectomy, resulting in the reduced acceptance of non-scalpel vasectomy.

Table 1. Education status and income of the study population
Misconceptions about Non-scalpel Vasectomy

The 197 people who were aware of non-scalpel vasectomy, were asked their opinion about certain statements that are commonly made about vasectomy. The first 4 of these statements relate to effects of non-scalpel vasectomy on sexual performance and masculinity. The results for all of them show similar trends, one such table is shown above.

| Table 2 | Preferred method of contraception in rural and urban areas |
|---------------------------|---------------------------|---------------------------|
| **Contraceptive Method Preferred** | **Urban** | **Rural** | **Total** |
| | **Frequency** | **Percent** | **Frequency** | **Percent** | **Frequency** | **Percent** |
| Female Sterilisation | 108 | 72.5 | 116 | 76.3 | 224 | 74.4 |
| Condoms | 8 | 5.4 | 6 | 3.9 | 14 | 4.65 |
| IUD | 4 | 2.7 | 9 | 5.9 | 13 | 4.3 |
| OCP | 2 | 1.3 | 0 | 0 | 2 | 0.65 |
| Rhythm method | 5 | 3.4 | 1 | 0.7 | 6 | 2.05 |
| Abstinence | 3 | 2.0 | 1 | 0.7 | 4 | 1.35 |
| Others | 1 | 0.7 | 19 | 12.5 | 20 | 6.6 |
| None | 18 | 12.1 | 0 | 0 | 18 | 6.05 |
| **Total** | **149** | **100.0** | **152** | **100.0** | **301** | **100** |

Table 3. Awareness about Non-scalpel Vasectomy and Tubectomy

<table>
<thead>
<tr>
<th>Tubectomy</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aware</td>
<td>295</td>
<td>98.0</td>
</tr>
<tr>
<td>Not aware</td>
<td>6</td>
<td>2.0</td>
</tr>
<tr>
<td>Non Scalpel Vasectomy</td>
<td>Frequency</td>
<td>Percent</td>
</tr>
<tr>
<td>Aware</td>
<td>197</td>
<td>65.4</td>
</tr>
<tr>
<td>Not aware</td>
<td>104</td>
<td>34.6</td>
</tr>
</tbody>
</table>

DISCUSSION

Knowledge about contraceptive methods plays a major role in their use. Of equal importance as awareness of contraceptive methods is knowledge of where these methods can be obtained, what the main side effects are and how to use the selected method correctly. Timely knowledge, especially during the initial years of their married life is very important to plan and space pregnancies. Inadequate knowledge of contraceptive methods is a reason for not accepting family planning. Incomplete or erroneous information on where to obtain contraceptive methods and how to use them is strongly associated with unmet need.

The most preferred method of contraception in our study in both urban and rural areas was found to be permanent method of contraception namely Female Sterilization. Worldwide, approximately five times as many married women rely on female sterilization as those relying on male sterilization.

Attitude studies have shown that awareness of Family Planning is widespread and over 60% people have attitudes favorable to restricting or spacing births. Yet, the rate of contraceptive use by eligible couple in India is 43.5%
as opposed to 87% in Japan and China. This is the challenge faced by the Government in tackling the problem of population explosion.

In an attempt to find awareness about non-scalpel vasectomy among our study subjects, we found that only about 65% of the subjects were aware. However, the awareness was more among the urban population. A higher awareness level was also noted among the higher income groups and a higher education status. Most of the males agreed frankly that they were not interested in considering a vasectomy in future, the few who agreed also belonged mostly to the urban study area. The main reason for acceptance was limitation of family size. Few of those who were aware of non-scalpel vasectomy believed in some myths about the procedure, the same are responsible to some extent for the non-acceptance of the procedure. The rural and urban population can be seen to derive their knowledge on non-scalpel vasectomy from the general practitioners.

When compared to non-scalpel vasectomy, however, a much higher awareness was seen to be prevalent on tubectomy. Last but not the least, most of the study subjects were not curious to know more about non-scalpel vasectomy, as they strongly believed that family planning is a responsibility of the females.

In India, most of the men have a favourable attitude towards family planning but favour its use only after having two or more children. In a country like ours where women cannot take decisions regarding family planning such a conditional acceptance by men can be a serious bottleneck in the acceptance of contraception at the lower parity for maintaining adequate interval between two births.

People have a favorable attitude towards tubectomy over vasectomy for various reasons:

1. Health workers promote tubectomy more and it is done integrated with delivery,
2. Men think since women don’t work they can undergo the operation and rest at home,
3. Some misconceptions about vasectomy like it affects masculinity hinders the acceptance,
4. Men think family planning is women’s responsibility.

Sterilization, which is a terminal birth control method, is influenced by the number of living children in addition to the number of sons and is usually accepted when the couples are sure that they have competed with their family size and gender preference. Since men are the dominant decision makers in India it is important to improve their involvement in reproductive health needs of family. Men’s attitude is much more important in the adoption of temporary methods of contraception and also in limiting the family size.

**RECOMMENDATION**

Overcoming the barrier of limited knowledge on ‘all the available’ methods of contraception by improving on the IEC activities, Improving the availability of all contraceptive services, Improving accessibility of contraception services through camps etc. Working on improving counselling services provided by health workers.

**LIMITATIONS**

The subjects could have denied their knowledge on vasectomy owing to the stigma associated with it, which may have affect the results obtained. Since the study has been conducted based on convenience sampling, the results can be applied only to the aforementioned areas.
CONFLICT OF INTEREST AND FUNDING

Nil.

ACKNOWLEDGEMENTS

We wish to thank all the participants without whom this study could not have been possible.

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A COMPARATIVE STUDY ON GLOMERULAR FILTRATION RATE ESTIMATED FROM SERUM CREATININE BETWEEN COCKCROFT-GAULT AND CKD-EPI EQUATIONS IN THE GENERAL POPULATION

Gowtham Kishore A¹, P. Seenivasan¹, M. Edwin Fernando²

Abstract

Introduction: Chronic Kidney Disease is prevalent more in the developing countries than in the developed countries. It is increasing at an annual growth rate of 8%. It is a key determinant of the poor outcome of major Non-communicable diseases like Diabetes and Hypertension. Early detection and treatment of CKD can prevent the progression to ESRD. The magnitude of the existing burden of renal failure points to the need for clinical and population based intervention aimed at its prevention.

Aim: To compare the eGFR estimated from Cockcroft-Gault and CKD-EPI equations in one heterogeneous cohort against an excellent gold standard method to measure GFR.

Methodology: This cross-sectional study was conducted at the Renal Transplant unit at Dept. of Nephrology, Stanley medical college in the two subpopulations comprising the Prospective Kidney donors and the Students in the age group of 18-22 years. Serum creatinine was measured after obtaining consent and was compared against the gold standard method.

Results: The Cockcroft-Gault equation is influenced by age, BMI and acts better in younger population. And CKD-EPI gives the best estimation of GFR, although its accuracy is close to that of the Cockcroft-Gault.

Key Words: Serum creatinine, eGFR, Cockcroft-Gault, CKD-EPI

INTRODUCTION

GFR is used in early detection of renal impairment, for monitoring renal function and provides guidance in dosing of drugs. Rate of change of GFR is a good indicator for renal replacement therapy. The accepted gold standards of measurement are based on the clearance of exogenous substances such as inulin and radio-labeled markers. They are not routinely available and other candidate markers such as Cystatin C are not yet fully evaluated, and methods based on measurement of Serum creatinine are conventionally used. The Cockcroft-Gault estimates creatinine clearance and CKD-EPI estimates GFR. No clear cut evidence regarding which formula is best used for optimal estimation of kidney function. Therefore, a study to evaluate the most often used formulas, in a study population requiring a standard reference GFR value is needed. And these formulas are compared with a gold standard GFR measurement.

We compared the estimations of two serum creatinine based estimating equations namely, the Cockcroft-Gault and Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI) equation to a gold standard GFR measurement using DTPA and studied the different GFR values within the strata of gender, age and body mass index (BMI). For people who previously underwent a GFR measurement i.e., the prospective kidney donors, and for the student subpopulation in the age group of 18-22 years difference between the means of measured and estimated kidney function were calculated within the strata of the variables.

OBJECTIVES

The enormous physiologic variability of GFR in healthy individuals makes it difficult to define what a normal GFR should be for an individual patient.

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1. To compare the GFR estimated from the two equations against a gold standard measurement.
2. To understand the factors such as age, gender, BMI that contribute to the normal variability in eGFRs and to study their influence by stratifying on these parameters.
3. To determine a rough estimate of the GFR value in the study population thereby for use in clinical practices such as CKD classification, drug dosage calculations etc.,

**METHODOLOGY**

It is a cross-sectional study undertaken among students of Stanley Medical College, Chennai 01 and the prospective kidney donors at the Department of Nephrology, Govt. Stanley Medical College and Hospital, Chennai-01 after approval by the institutional ethical committee. The period of study was for 5 months between January 2013 and May 2013. Healthy donors without any systemic disease like diabetes and hypertension which have an impact on the kidney function were chosen. The subjects were explained about the study and their consent was obtained. Their anthropometric measurements of height and weight were measured and BMI was calculated. Serum creatinine was estimated by enzymatic method at the laboratory. Their eGFRs by Cockcroft Gault and CKD-EPI equations were estimated using standard calculators provided by National Kidney Foundation, New York. DTPA analysis on the donors were done at the Radiology Department of MMM hospital, Chennai. All the findings were recorded. The relations were tested statistically by calculating the various Z-scores to find out the statistic significance using SPSS (IBM 20.0) software and Microsoft Excel at the Department of Community Medicine, Govt. Stanley Medical College and Hospital, Chennai 01.

<table>
<thead>
<tr>
<th>Table 1. Characteristics of the study population</th>
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<tbody>
<tr>
<td><strong>Characteristic</strong></td>
</tr>
<tr>
<td>Male gender (n, [%])</td>
</tr>
<tr>
<td>Female gender (n, [%])</td>
</tr>
<tr>
<td>Age (years; mean ± SD)</td>
</tr>
<tr>
<td>Body weight (kg; mean ± SD)</td>
</tr>
<tr>
<td>Height (cm ; mean ± SD)</td>
</tr>
<tr>
<td>BMI (kg/m²; mean ± SD)</td>
</tr>
<tr>
<td>Plasma creatinine (mg/dl ; mean ± SD)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 2. Statistics measures of the two estimating equations [mGFR ( population parameter test value, u ) : 82.4 ml/min]</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Equation</strong></td>
</tr>
<tr>
<td>Cockcroft Gault</td>
</tr>
<tr>
<td>CKD-EPI</td>
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</tbody>
</table>
RESULTS

Continuous data was given for mean and Standard deviation calculation and the following observations were made.

Table-3 shows that there is statistically no significant difference between the means of the two estimating equations in the student subpopulation. With a Z score of 1.08 (< than the table values), the null hypothesis is accepted. Table-5 shows that there is significant difference between the means of the two estimating equations in the donor subpopulation. With a Z score of 1.87 (> than the table value at 0.05 Level of significance, One-tailed test), the alternate hypothesis is accepted. Hence the Cockcroft-Gault equation is statistically significant than CKD-EPI in this subpopulation. Table-6 shows that in both the subpopulation the CKD-EPI equation was statistically stable with a lesser co-efficient of variation than Cockcroft-Gault...

DISCUSSION

The mean difference from the gold standard measurement (Tc99m-DTPA) was found to be less for Cockcroft-Gault when compared with CKD-EPI. A single equation is unlikely to work equally well in all populations and the study sample was less to measure a large difference. In younger individuals Cockcroft-Gault gave an higher eGFR and CKD-EPI in elder individuals greater than 30 years. It is clearly evident that the eGFR estimates in both the equations are higher for males when compared to females. In underweight individuals CKD-EPI had a higher estimate than Cockcroft–Gault, whereas in individuals with more muscle mass CG gave a higher estimate. The Cockcroft-Gault equation is influenced by age, BMI and acts better in younger population. And CKD-EPI gives the best estimation of GFR, although its accuracy is close to that of the Cockcroft-Gault. The treatment modalities of renal failure such as renal replacement therapy, peritoneal dialysis and hemo-dialysis are destined according to the classification of CKD based on the existing renal function. Also people with reduced GFR have a normal serum creatinine level which is in accordance to the ethnicity, muscle mass and dietary protein intake. It also emphasizes the inverse relationship between GFR and serum creatinine.

RECOMMENDATION

Further research should be directed towards improving GFR measurement and evaluating Cystatin C and other filtration markers for GFR estimation, either alone or in combination with serum creatinine. Correlational and Regression analysis studies between the various variables influencing eGFR and the equations are necessary.
Figure 1.
Clustered bar chart showing the mean eGFR calculated from the estimating equations in both the genders of the 18-22 years population.

Figure 2.
Line extrapolation comparing BMI with Mean eGFR calculated from both the estimating equations in the age group of 18 - 22 years.

Table 7.

<table>
<thead>
<tr>
<th>BMI</th>
<th>Cockcroft-Gault eGFR Mean eGFR (ml/min)</th>
<th>CKD-EPI Mean eGFR (ml/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 18.5</td>
<td>91.6</td>
<td>117.3</td>
</tr>
<tr>
<td>18.5 to 24.9</td>
<td>120.8</td>
<td>119.3</td>
</tr>
<tr>
<td>25 to 29.9</td>
<td>124.6</td>
<td>108.0</td>
</tr>
<tr>
<td>≥ 30.0</td>
<td>153.0</td>
<td>107.0</td>
</tr>
</tbody>
</table>
LIMITATIONS

The difference in comparison was not significant within the subgroups since the number of participants were not sufficient. And a single equation is unlikely to work well in all populations and the study sample was not representative of the general population. Serum creatinine as an endogenous filtration marker is to be considered and has to be used with caution in people with high or low muscle mass.

CONFLICT OF INTEREST AND FUNDING

Nil

ACKNOWLEDGMENT

We wish to thank all the participants without whom this study could not have been possible.
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To be uncertain is to be *uncomfortable*, but to be certain is to be *ridiculous*.

For most diagnoses all that is needed is an ounce of knowledge, an ounce of intelligence, and a pound of thoroughness.
INTRODUCTION

Rectus Sheath Hematoma is an accumulation of blood in the sheath of the rectus abdominis muscle. The rectus sheath consists of the rectus abdominis muscles, an enveloping fascial sheath, and their blood supply via the epigastric arteries and veins. The hematoma may be caused by either rupture of one of the epigastric arteries or by a muscular tear. In ageing population and the widespread use of anticoagulant medications, this benign condition is becoming more common and more serious. Most hematomas resolve without treatment, but they may take several months to resolve. There is a female predominance as may be explained by larger rectus muscle mass in men and thinning, stretching of muscle mass in pregnant women. My patient is also female with pregnancy.

CT and magnetic resonance imaging are widely used in the diagnosis. Although USG seems to be the procedure of choice due to its high sensitivity rates, time and cost effective and low radiation, however sometimes it is difficult to differentiate intra peritoneal lesions from extra peritoneal lesions by USG is subject to error by means of probe induced tenderness and limitations of interpretation of the images. CT is superior in localization; extension and evaluation of the size of the hematoma, give the classification of the hematoma. CT classification of hematoma Type I hematomas are mild and the hematoma occurs within the muscle with an increase in muscle length and do not require hospitalization. Type II hematomas are moderate, the hematoma is within the muscle but bleeding occurs into the space between transversals fascia and the muscle. Type III hematomas are severe and located between transversals fascia and the muscle, anterior to the peritoneum and urinary bladder. Type II and III hematomas require hospitalization.

RSH is an uncommon and often clinically misdiagnosed. This condition presents with acute abdominal pain, fever vomiting and appearance of an abdominal wall mass. It is more common in women and older individuals, underlying cause may be trivial Trauma, coagulant disorders, with anti coagulant and anti platelet therapy, abdominal operations, trocar injury after laparoscopic operations, Sc drug injections, severe hypertension and pregnancy. Acute abdominal pain and palpable mass after muscle strain, coughing, sneezing and twisting, highly suggestive of RSH. Large RSH presents with hypo volemic shock, Weakness, confusion, paralysis and diaphoreses Abdominal pain may be sudden or gradual increase in intensity of pain associate with palpable abdominal mass. Pain is usually worsens with movements constant pain with episodic abdominal clamping is also a frequent symptom. A typical cases presents with insidious pain, Gastro intestinal and urologic symptoms. Careful history of any surgical procedures, occult blunt trauma,

A CASE OF RECTUS SHEATH HEMATOMA IN PREGNANCY PRESENTING AS DEGENERATING UTERINE FIBROID

P. Vasanthamani

Abstract

Rectus sheath hematoma is an uncommon condition characterized by acute abdominal pain and the appearance of an abdominal wall mass which leads to diagnostic dilemma in pregnant women. Here a case report of a 32 years old patient, a G4P3L3, a post caesarean pregnancy with 28 weeks gestation who presented with painless bleeding per vaginum as emergency admission. After stabilization and sonological evaluation she was diagnosed as a case of placenta praevia with degenerating fibroid and was managed conservatively. After 4 weeks admission, emergency caesarean section was performed for severe bout of bleeding per vaginum at 32 weeks which revealed a 20x30 cm rectus sheath hematoma in right side anterior abdominal wall. Mother recovered well. Both mother and child were discharged in good health. Rectus sheath hematoma can mimic many other clinical conditions and high index of suspicion should be maintained by the clinician to identify this condition and potentially manageable entity.

Keywords: Rectus sheath hematoma (RSH), pregnancy, fibroid uterus, Ultrasonogram (USG)

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coughing, sneezing, severe constipation, vigorous exercises and exacerbations of recent asthma bronchitis, can lead to correct diagnosis. Non-specific nature of these symptoms leads to difficulty in diagnosis. So RSH is considered in differential diagnosis in persons who present with mass and abdominal pain.

**CASE REPORT**

32 years old female G4P3L3, a post caesarean pregnancy with 28 weeks gestation presented with painless bleeding per vaginum for 4 hours. Her menstrual cycles were regular with moderate flow. She had two prior home deliveries and one emergency LSCS done for failure to progress. On admission she was very pale with signs of chronic anemia. Her vitals were stable. Uterus was 28 weeks size, not acting, not tense, not tender; with live fetus. Ultrasound suggestive of placenta praevia type 2 anterior. Hemoglobin was 6.6g/dl and PCV was 20%. Liver function test, renal function test and coagulation profile were normal. She received 2 units of packed cell on admission.

After 2 weeks patient had respiratory tract infection with fever and cough. Two days later patient complained of vague abdominal pain. On abdominal examination a diffuse, firm, ill-defined mass of size 10 x 10 cm was felt in right iliac fossa. Ultrasound revealed a 15 x 9.5 x 12 cm hetero echoic mass in right side of uterus with cystic change suggestive of fibroid with degeneration treated conservatively. After one week Patient presented with confusion, disorientation with anaemia increasing severity presented as abruptio placentae, scar dehiscence of uterus. Repeat Scan suggestive of degenerating fibroid with increase in size about 30 cmX20 cm with live baby without any evidence of placental abruption and with intact uterus. Patient was managed conservatively as a case of pregnancy with anaemia complicated by placenta praevia, fibroid with red degeneration with adequate blood transfusion. Subsequently, 24 days after her admission patient underwent emergency caesarean section for a severe bout of bleeding per vaginum.
On opening the abdomen, surprisingly, a large mass of about 20x30 cm was found in the anterior abdominal wall in close approximation with the pregnant uterus without any fibroid. LSCS was proceeded to deliver an alive baby of weight 2.1 kg. The mass was defined by separating the layers of rectus sheath. Before enucleation on incising the mass hematoma of about 1000 grams was present. The He-matoma was evacuated no bleeding vessel identified, suction drain kept and dead space was obliterated. Abdomen closed in layers with drains. 2 units of whole blood and 4 units of FFP was transfused intra operatively. Patient required a total of 14 units of blood and 4 units of Fresh Frozen Plasma throughout her hospital stay. Post operatively patient has febrile spikes. No local infections foci was noted, further evaluation revealed dengue by seriously. Patient was shifted to Medicine Intensive Care Unit for further treatment and was discharged on the 18th post-operative day in good health.

DISCUSSION

Rectus sheath hematoma (RSH) is a rare but also a potential cause by acute abdominal pain in pregnancy. Rectus sheath hematoma should be considered in patients who present with an acute onset of abdominal pain in the latter hals of pregnancy or the immediate postpartum period. This condition is more common in women. The rectus abdominis muscle is the longest and, at this segment, shortening with contraction is greatest. This may explain the higher incidence of hematomas in lower abdominal regions. In addition, during pregnancy spontaneous hematoma occurs when the abdominal distension causes stretching of the epigastric
vessels. The hematoma results from rupture of epigastric vessels or by tearing the fibers of the rectus abdominis muscle. It may be caused by trauma, coagulation disorders, or in patients on anticoagulant therapy. Collection of the hematoma usually occurs in the lower part of the abdomen because of the absence of posterior rectus sheath below the level of the umbilicus. The hematoma thus formed because of its direct contact with the peritoneum may cause peritoneal irritation and peritonitis confusing the attending obstetrician of potential obstetric complications like abruptio placenta and rupture uterus.

Ultrasonography and CT are the diagnostic methods of choice. Whereas USG findings are not specific and sometimes even inconclusive as in the present case. In this case USG findings suggested degenerating fibroid. In such cases, CT scan is the gold standard for exact diagnosis. The hazards of CT scan towards the fetus, although trivial should be born in mind. Most cases of rectus sheath hematoma are managed conservatively, although huge ones may require repeated blood transfusions and increased operative interventions. In pregnancy, size of the hematoma and the hemoglobin status of the patient should be carefully monitored, apart from the fetal well being.

**Rectus Sheath Hematoma Treatment and Management**

Once RSH is diagnosed treatment may be either conservative or invasive depending on the patient clinical condition. Conservative treatment is patients with certain diagnosis who are hemodynamically stable and having small non expanding hematomas with mild symptoms. Conservative treatment of rectus sheath hematoma includes rest; analgesics; hematoma compression; ice packs; treatment
of predisposing conditions; and if necessary, more aggressive therapies of intravenous fluid, resuscitation, reversal of anticoagulation, and transfusion. Relatively small hematoma has been reported to cause hypotension and death in a patient who is debilitated. Patients who are undergoing invasive procedures and those with hemodynamic instability, expanding hematomas, or symptomatic anemia should be considered for anticoagulation reversal.

Invasive procedures to control active bleeding in rectus sheath hematoma: (1) therapeutic angiography with embolization of the bleeding vessel and (2) operative therapy with clot evacuation, ligation of bleeding vessels, and closed suction drainage. Invasive treatment should be considered in patients with enlarging hematomas, hemodynamic instability unresponsive to fluid resuscitation, peritoneal signs, and pain not well controlled with analgesics, and persistent gastrointestinal or urinary symptoms. Patients with significant comorbidities may not be candidates for invasive therapy. Recurrences following surgical therapy have not reported. Post discharge care includes rest, analgesics, hematoma compression, ice packs and treatment of predisposing conditions.

CONCLUSION

In conclusion, a high index of suspicion is needed on the part of the attending obstetrician to diagnose a case of spontaneous rectus muscle hematoma in pregnancy, which may mimic other conditions like degenerating fibroid, abruption placenta and rupture uterus, which is possible by careful clinical evaluation aided by appropriate radiological tools. Rectus sheath hematoma is a rarely seen pathology often misdiagnosed as acute abdomen that may lead to unnecessary laparotomies. Computerized tomography must be chosen for definitive diagnosis since ultrasonography is subject to error due to misinterpretation of the images. Main therapy is conservative management. Prompt history taking with careful physical examination and appropriate imaging studies help the correct diagnosis. CT seems to be the most appropriate choice of imaging and gold standard imaging.

CONSENT

Written informed consent obtained from the patients for publication of this study.

ACKNOWLEDGEMENTS

There is no funding body for this manuscript.

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INTRODUCTION

A mass attached to a cardiac structures can be a tumor, or thrombus, or vegetation. Fibroelastomas are rare primary cardiac tumors often mimic as IE especially if it is associated with embolic manifestations. Infective endocarditis (IE) accounts for 0.5 - 1 of every 1000 hospital admissions. Around 70% of cases at pediatric ages occur in children with congenital heart disease (CHD), especially ventricular septal defect (VSD). We present the case of a previously apparently healthy adult with a late diagnosis of CHD, in which IE mimicked as PFE was the first manifestation of the disease along with septic pulmonary thromboembolism.

CASE REPORT

We describe the case of a 35 year male from adverse socioeconomic status, with no known personal history of disease (there was no record of medical check-ups during childhood) or previous diagnosis of a heart defect. He was brought to the emergency department 10 days after fever onset, he also had 5 days of NYHA Class III dyspnea along with bilateral pleuritic type of chest pain. General examination revealed severe pallor, B/L Pedal edema and elevated JVP. Oral examination revealed multiple untreated dental caries. Systemic examination revealed Grade V Pan systolic murmur over 3rd and 4th intercostal spaces in both left and right para sternal region along with thrill, Grade IV ESM in Pulmonary area along with palpable P2. Splenomegaly of 3cm present. Laboratory investigations showed low Hb (8.9 gm%) Raised TC (12400) with P80%, ECG: HR-75/min, NSR, Equiphasic large QRS wave in V2, V3, V4 CHEST X RAY: Cardiomegaly with LV Configuration Patchy non homogenous lesion seen in Rt lower zone INITIAL ECHO: Small perimembranous VSD Left to Right Shunt, Pedunculated hypermobile small echo dense lesions 2-5 in number attached to RVOT & MPA, Pulmonary valvular surface free, Mid RVOT Gradient 32 mmHg, Global hypokinesia of LV with moderate LV dysfunction CT CHEST: Multiple bilateral wedge shaped air space opacities S/O B/L Consolidation from embolic showering from cardiac masses.

As valvular surface is totally free and presentation as pedunculated masses with embolic phenomena we wanted to r/o benign cardiac tumours such as myxoma and papillary fibro elastoma. Cardiac tumors in RVOT – rare & have diagnostic and therapeutic challenges. In this aspect, Cardiac MRI (CMRI) is of great importance and we did it. CMRI showed RV moderator band thickening with T2 hypo intense lesions at RV apex which favoured Vegetations. At this time we have received the blood c/s report - Viridans streptococci grown in two separate blood samples and diagnosis of Infective Endocarditis with Septic Pulmonary Thrombo Embolism was made.

Abstract

A diagnosis of congenital heart disease is usually established at an early age, so infective endocarditis is a rare form of presentation. We here describe the case of a 35 year male with a week-long history of intermittent fever, pleuritic chest pain and breathlessness. Physical examination detected pan systolic murmur and an associated precordial thrill. ECHO revealed a perimembranous ventricular septal defect, pedunculated masses involving Right Ventricular Outflow Tract (RVOT) and Main Pulmonary Artery (MPA) with free valvarial surface. CT Chest showed bilateral wedge shaped consolidatory changes suggestive of pulmonary infarcts secondary to embolism from cardiac masses. Cardiac MRI taken to r/o benign cardiac tumors which can present as pedunculated masses with embolism. Also laboratory tests showed evidence of an active infection. With this, the diagnosis of infective endocarditis involving RVOT and MPA (with free valvarial surface ) with septic pulmonary thrombo embolism was made. He was not willing for massectomy and so he was started on intravenous antibiotics,anticoagulants and anticongestive therapy. The outcome has been generally favorable, and at present he is asymptomatic under anticongestive therapy.

INFECTIVE ENDOCARDITIS MIMICKING AS PAPILLARY FIBRO ELASTOMA - A RARE PRESENTATION IN AN ADULT WITH VSD

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In background of embolic manifestations and RV dysfunction we have planned for en massectomy, but as the patient was not willing for the procedure we have continued empirical intravenous antibiotic therapy which was begun with vancomycin (30 mg/kg/day) and gentamicin (5 mg/kg/day), together with oral anticoagulative therapy with diuretics (furosemide 1 mg/kg and 25 mg spironolactone every 12 hours). Though no clear evidence available about anticoagulant role in septic pulmonary thrombo embolism, for the benefit of doubt tab acitrome was started with heparin overlapping. There was marked echocardiographic improvement during follow-up. At present, 6 months later, the patient is clinically stable under antifailure therapy.

**DISCUSSION**

Infective Endocarditis typically involves the valves, may involve all structures of the heart i.e. chordae tendinae, sites of shunting and mural lesions. Right side vegetations are less common (<5%) merely associate with CHD. If at all, most commonly affected valve – Tricuspid (55-80%) f/b Pulmonary valve, merely as RVOT vegetations - very rare presentation. Presentation as pedunculated masses with leaving valvular surfaces also be rare. These conditions warranting to rule out benign cardiac tumors possibility. Cardiac tumors in RVOT – rare & have diagnostic and therapeutic challenges. Differentiation of non-neoplastic lesions from neoplastic ones - essential for appropriate therapeutic planning. In this

![Fig 1 & 2 Cardiac MRI of this patient showing moderator band thickening along with T2 hypo intense masses in RVOT suggestive of vegetations](image)

![Fig. 3 CT Chest of this patient showing multiple wedge shaped septic embolic infarcts in both sides](image)
aspect, CMRI is of great importance since it is a noninvasive exam and offers a wide field of view and superior tissue characterization, without the using iodinated contrast media or ionizing radiation. CMRI PICTURE of various cardiac tumors and vegetation shown in Table 1.

Most common cardiac lesion associate with IE is VSD (24%). Most common microorganisms isolated from blood – Virdans streptococci (61%) f/b Staphylococcus aureus (15%). More recently, there has been a marked increase in the incidence of IE caused by fungi or microorganisms of the HACEK group (Hae-mophilus, Actinobacillus, Cardiobacterium, Eikenella and Kingella) in newborns and immunocompromised patients.

There are two important factors in the pathogenesis of IE: an area of endothelial damage and the presence of bacteremia, even if transient. Patients have some form of underlying hemodynamic abnormality, such as a pressure gradient or turbulent flow between two cardiac chambers or the great vessels. These changes damage the endothelium, which can be directly invaded by virulent microorganisms or induce thrombus formation and subsequent bacterial adhesion, leading to the development of vegetations. As in our patient, one cause of transient bacteremia is poor oral hygiene and untreated dental caries, whether or not dental procedures are performed.

The modified Duke criteria are now the most widely used to diagnosis IE, and are based on the patient’s medical history, physical examination and complementary diagnostic exams, including two or more blood cultures positive for the microorganisms typical of IE and echocardiographic evidence of endocardial involvement.

Goals of Therapy: Eradicate infection and treat sequelae of destructive intra-cardiac and extra-cardiac lesions. NVE standard therapy takes 2-6 weeks to eradicate the pathogen. PVE – longer regime is necessary – over 6 weeks. In Streptococcal IE, shorter 2 week course, can be used when combining β-lactams with aminoglycosides. Initial empirical treatment is an antistaphylococcal penicillin together with an aminoglycoside, effective against the most common microorganisms (S. viridans, S. aureus and Gram-negative bacteria). The final choice of antibiotic therapy is guided by the results of susceptibility tests. Treatment duration depends on the etiological agent isolated, but on average ranges between four and eight weeks of intravenous antibiotics. This prolonged regime is essential to ensure that bactericide concentrations reach levels effective against microorganisms with low metabolic rates in vegetations that are protected from phagocytic activity.

Surgery plays a crucial role in more severe cases, notably when there is CHF refractory to medical therapy or secondary to valve dysfunction, perivalvular abscess or vegetations larger than 1 cm, and infection by fungi or Pseudomonas. Traditionally, the accepted dogma was to avoid surgery during the active phase of the disease due to tissue friability, which made surgery difficult and led to high postoperative mortality and risk of valve dysfunction. This idea has now been abandoned and early surgery is now recommended. The indications for urgent surgery include:

1. CHF with impaired left ventricular function (class I recommendation, level of evidence B);
2. Locally uncontrolled infection, with aortic paravalvular abscess (class I recommendation, level of evidence B) and persisting fever (class I recommendation, level of evidence B);
3. Prevention of systemic embolism associated with large aortic and/or mitral vegetations (class I recommendation, level of evidence C).

Finally, prevention of IE is as important as diagnosis and treatment, for which good oral hygiene and regular dental check-ups are essential. The latest guidelines recommend a more rational use of prophylactic antibiotic therapy prior to interventional procedures, limiting their use to patients with predisposing cardiac conditions.
CONCLUSION

IE as first manifestation in VSD is rare. Presentation as pedunculated masses in RVOT and MPA with free valve surface is very unusual. Diagnosis is based on symptoms, together with new echocardiographic alterations and blood cultures positive for typical microorganisms. Antibiotic therapy is the cornerstone of treatment, and should last for four to eight weeks and be administered intravenously. However, the most important measure is prevention, based on good oral hygiene and antibiotic prophylaxis prior to high-risk invasive procedures.

REFERENCES

INTRODUCTION

The term hamartoma of breast was first applied to lesions of the breast in 1971 by Arrigoni et al., who described 10 patients with encapsulated breast tumours that clinically and grossly resembled fibroadenomas. Despite imaging modalities, it is not often possible to differentiate these lesions from fibroadenomas and breast carcinomas. Only 15 cases of chondrolipomatous tumour of breast had been previously reported in the English language literature. We report this case for its rarity of occurrence.

CASE HISTORY

A 60 year old woman presented to the surgical department with history of a lump in the right breast which was painless. On examination the lump was freely mobile and painless. No axillary lymph nodes were felt. Fine needle aspiration was done which was reported as fibroadenoma. Trucut biopsy done revealed foci of mature hyaline cartilage only.

An excision biopsy was done and sent to us. Grossly, we received a well defined nodule measuring 4x2x2 cm, external surface was smooth. Cut surface revealed a circumscribed rubbery mass with multiple tiny gritty white spots. Histopathological examination showed a well defined lesion composed of multiple islands of hyaline cartilage surrounded by mature adipocytes and spindle shaped cells with benign morphology.

DISCUSSION

Hamartomatous breast lesions are uncommon. The two common variants of mammary hamartoma are adenolipoma and chondrolipoma. Fushimi et al. suggested that “the term of chondrolipoma is more reasonable than chorstoma”, because it represent the character of the tumour more precisely. Chondrolipomas are generally seen in postmenopausal women.

Chondrolipoma is considered as a cartilaginous metaplasia encountered in lipomas of large size and long duration. Chondrolipoma can be present on the chest wall, back, extremity, breast, tongue, buccal mucosa, etc.

Clinically and radiologically, these lesions can simulate malignancy and histopathology is needed to rule out malignancy. Grossly these are well demarcated lesions with foci of cartilage and calcification. Calcification was not evident in our case. No breast acini was entrapped within the lesion.

Abstract

Chondrolipomatous tumours are rare benign neoplasms composed of adipose and cartilage tissue. Only few cases have been reported in the literature. Physical examination, ultrasound and mammography usually reveals a benign tumour. Histopathological examination is necessary in providing an exact diagnosis. We describe an elderly patient with chondrolipomatous tumour of the breast which was suspected to be an inflammatory or malignant tumour clinically and radiologically.

CHONDROLIPOMA OF THE BREAST – A CASE REPORT

Jamila Alagarsamy *, Mary Lilly*

Abstract

Chondrolipomatous tumours are rare benign neoplasms composed of adipose and cartilage tissue. Only few cases have been reported in the literature. Physical examination, ultrasound and mammography usually reveals a benign tumour. Histopathological examination is necessary in providing an exact diagnosis. We describe an elderly patient with chondrolipomatous tumour of the breast which was suspected to be an inflammatory or malignant tumour clinically and radiologically.

Fig. 1 Gross picture of the breast lump exhibiting fatty areas will streaks of bluish cartilagenous foci

* Department of Pathology, Govt. Stanley Medical College and Hospital, Chennai
CONCLUSION

This case highlights the need for considering chondrolipoma as a differential diagnosis for a well defined breast lesion particularly in post-menopausal women both in mammogram and ultrasound. Hence excision biopsy will help in a definite diagnosis.

REFERENCES


Fig. 2 Histopathology, H&E, showing adipocytes, spindle shaped cells and islands of mature cartilage.

Fig. 3 Histopathology, H&E, showing lobules of mature adipocytes admixed with foci of hyaline cartilage.
INTRODUCTION

Endometrioid adenofibroma constitutes 1% of ovarian epithelial neoplasms. It is a rare tumor with better prognosis. It is usually associated with ovarian endometrioid adenocarcinoma.

CASE HISTORY

A 50 years old female came with complaints of post menopausal bleeding. She had ascites but no palpable mass. USG was done and found to have mass in the uterus. She underwent laparotomy followed by total abdominal hysterectomy and bilateral salpingo oophorectomy. Specimen sent for histopathological examination.

Groosly, cut surface of uterine mass showed a irregular infiltrating proliferative growth obliterating the endometrial cavity (Fig 1), cervix was grossly uninvolved. Histopathology of uterine mass showed a poorly differentiated endometrial carcinoma of endometrioid type (Fig 2). One side ovary revealed serous cystadenofibroma. Other side ovary was enlarged measuring 6x5x2 cms. Cut surface showed multiple cysts, largest measuring 1.5x1 cm with a focal fibrotic area (Fig 3). Histopathology showed lobules of endometrial type of glands in a densely fibrotic stroma (Fig 4).

DISCUSSION

Co-existing Endometrioid adenofibroma of ovary with Endometrioid adenocarcinoma of uterus has not been reported so far. Endometrioid adenofibromas are uncommon, comprise 1% of ovarian epithelial neoplasms, and 83% are unilateral. The median age is 57 years. The mean diameter is about 10 cm.

The external surface is smooth and the cut surface is densely fibrous, often with intermixed cystic areas creating a honeycomb appearance. The cysts contain clear or yellowish fluid. Microscopically, the dominant pattern is that of an adenofibroma or cystadenofibroma. The epithelial elements are arranged in branching tubular glands and cysts, and usually resemble those of proliferative or mildly hyperplastic endometrium.

The epithelium lining the glands is tall and columnar with oval nuclei containing coarse chromatin and small nucleoli. Sometimes the nuclei resemble those of atrophic or inactive endometrium, with uniform, elongated dark nuclei and scanty cytoplasm. The stroma is usually densely fibrotic 1; focal areas often resemble ovarian cortical stroma. Tumors are classified as atypical or borderline based on atypicality of the cells 2. Endometrioid adenofibromas are frequently associated with endometriosis.

Abstract

Endometrioid adenofibromas are uncommon, comprise 1% of ovarian epithelial neoplasms, and 83% are unilateral. We report a case of endometrioid adenofibroma co-existing with poorly differentiated endometrioid adenocarcinoma of uterus in a 50 years old female.

Keywords: Endometrial carcinoma, adenofibroma

INCIDENTAL ENDOMETRIOID ADENOFIBROMA OF OVARY IN A PATIENT WITH ENDOMETRIAL ADENOCARCINOMA

K. Chandramouleeswari *, M. Yogambal *, C. Arun Prabhakaran *
Endometrioid adenofibromas are frequently associated with endometriosis. The distinction of endometrioid adenofibroma from serous adenofibroma may be arbitrary at times, as both may have ciliated epithelium. Tubular glands and lack of the multiple cysts and fibrous papillae of serous adenofibroma favour endometrioid differentiation. These tumors are benign, although rarely they may recur.

Endometrioid adenocarcinoma resembles endometrial glands and is divided into three grades based on solid growth. (Grade 1= <5% solid growth, grade 2= 5-50% solid growth, grade 3= >50% solid growth). Type 1 endometrial carcinoma develop usually in perimenopausal women in the setting of hyperestrogenism. They are low grade tumors and is characterized by microsatellite instability, PTEN and K-ras mutations and nuclear accumulation of beta catenin. Type 2 is aggressive and occur in postmenopausal women and are unrelated to estrogen stimulation. It is high grade and characterized by p53 abnormalities and loss of heterozygosity.

CONCLUSION

Endometrioid cystadenomas and adenofibromas are benign and successfully treated by oophorectomy. Endometrioid adenocarcinomas are usually managed by surgery and radiotherapy. Many cases of coexisting endometrioid adenocarcinoma and endometrioid adenofibroma of the ovary have been reported and hyperestrogenism has been considered to be a causal factor. As our case is the first reported case of
co-existing endometrioid adenofibroma and endometrioid adenocarcinoma of uterus, the same causal association may be considered but awaits further study.

REFERENCES

INTRODUCTION

Cysticercosis is caused by the metacestode, or larval, stage of Taenia solium, the pork tapeworm. The clinical syndromes caused by T solium are categorized as either cysticercosis (cysts in various tissues including the brain) or taeniasis (intestinal tapeworm infection).

Neurocysticercosis refers to CNS infection which is probably the most common parasitic infestation of the CNS. Ocular manifestations may be devastating as the cysticercus enlarges. The cysticercus may lead to blindness in 3-5 years. Decreased vision, pain, and recurrent redness of the involved eye are common symptoms of intraocular cysticercosis.

CASE REPORT

A 23 year old female patient, mahalakshmi came to the ophthalmology OP of stanley medical college with complaints of diffuse headache for 1 month. No complaints of nausea, vomiting, redness, pain, giddiness, seizure.

IDO: Peripheries Normal

INVESTIGATIONS

Hb 10.2mg%  
TC 6,400  
DC P60 L36 E4  
ESR 15/36

B SCAN: focal hyperchoic foci seen in the upper quadrant attached to the retina with doubtful post acoustic shadowing suggestive of calcification possibly, cysticercosis.

Table 1 Examination findings

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<tr>
<td>MACULA</td>
<td>Foveal reflex +</td>
<td>Foveal reflex +</td>
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<tr>
<td>BACKGROUND RETINA</td>
<td>Whitish lesion of 2DD In the superonasal quadrant 2DD away from the disc is seen, With vessels coursing over the lesion, With hyper dense lesion seen within the cyst</td>
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STOOL: No ova or cyst seen
USG ABDOMEN: no significant abnormality
MRI BRAIN: No evidence of neurocysticercosis
Patient has been diagnosed with OCULAR CYSTICER-COSIS. The patient is on T. Albendazole 400mg bd and T.Prednisolone 60mg od for three days now.

DISCUSSION

Ocular cysticercosis may affect almost all eye tissues.
- The vitreous cavity
- Subretinal space
- Subconjunctival space are common sites
- While involvement of other regions (eg, extraocular muscles, optic nerve) is relatively less common.

While either eye may be affected, bilateral involvement is rare. Multiple cysts may develop in the same eye. Clinically, the cyst appears as a well-defined translucent mass with a dense white spot (scolex) at one region. When alive, the cyst appears motile due to larval invagination or evagination. This motility is absent if the larvae are dead. A live cyst can induce intraocular inflammation because of its motility. Cyst death causes the release of toxic products, which induce a severe inflammatory reaction. The cyst becomes less translucent with a surrounding inflammatory membrane.

The cyst usually presents in the subretinal space or vitreous cavity. The site of entry into the eye is most probably the choroidal vasculature, from which the cyst migrates into the subretinal space, bores a hole in the retina, and enters the vitreous cavity. This passage incites inflammation, leaving behind a chorioretinal scar. Within the vitreous cavity, the cyst may be free-floating and may produce vitritis.

Apart from uveitis, cysticercosis may also lead to retinal hemorrhages, proliferative vitreoretinopathy, retinal detachment, disc edema, cyclic membrane formation, and ptosis. Cysticerci may develop in the anterior chamber. The cyst may enter the anterior chamber either from the posterior ciliary arteries or from the angle. Subconjunctival cysticercosis usually presents as a painful, yellowish, nodular subconjunctival mass with surrounding conjunctival congestion. Acquired strabismus, diplopia, recurrent redness, and painful proptosis are some of the clinical signs in patients with orbital cysticercosis.

Optic nerve compression by the cyst may cause decreased vision and disc edema. Lacrimal canalicular obstruction due to adnexal cysticercus has also been

Differential Diagnosis
1. Sarcoidosis
2. Thyroid Ophthalmopathy.

REFERENCES
The art of medicine consists of amusing the patient while nature cures the disease.

It is much more important to know what sort of a patient has a disease than what sort of a disease a patient has.
WHAT IS RESEARCH?

The word ‘research’ is derived from the French “re-sercher”, meaning “to go about seeking”. In its broadcast sense it means ‘any gathering of data, information and facts for the advancement of knowledge’.

The Merriam-Webster Online Dictionary defines as a research as a knowledge and “a studious inquiry or examination (especially investigation or experimentation) aimed at the discovery and interpretation of facts, revision of accepted theories or laws in the light of new facts or practical application of such new or revised theories of laws.

LET US CITE A FEW EXAMPLES

William Withering and treatment of heart failure

In 1775 Dr.William Withering, a reputed physician of Birmingham, U.K was travelling from his home to see patients at the Stafford Infirmary. On his way he saw an old woman with dropsy (anasarca) whom he thought would not live long. Some weeks later, he was surprised to know that the woman was still alive and recovering, the cause of her improvement being attributed to ‘an herb tea containing some 20 different ingredients, the active herb being foxglove’.

He began to investigate the properties of the plant and tried it on his patients with oedema and observed that the foxglove extract caused diuresis in his patients with oedema due to heart failure. Withering not only defined the type of patients who might benefit from this medication but also laid down the exact dose schedules of administering the medication. The drug is today known as digitalis after the Latin name for the plant, Digitalis purpurea and is still used for the treatment of heart failure. His observations, published more than 200 years ago, in 1785, were remarkably thorough for this time and his advice on the use of the drug will be applicable even today with minor modifications.

Cutoff level of hypertension

Earlier, isolated systolic hypertension (ISH) was usually defined as a systolic blood pressure greater than or equal to 160 mm Hg and diastolic blood pressure less than 90 or 95 mm Hg. (and)… most physicians have been taught that the diastolic pressure is more important than SBP and thus to treat accordingly. But based on evidence form large epidemiological studies treatment goal for individuals with hypertension has been brought down to <140/90 mm Hg except under special circumstances and greater emphasis has been placed on managing systolic hypertension.

Surgery in ischemic stroke

Atherosclerotic obstruction of the internal carotid artery (ICA) can lead to ischemic stroke in the territory of the ICA. It should be therefore be possible to prevent such strokes by producing an anastomosis between the superficial temporal artery (a branch of external carotid artery with the ICA, distal to the obstruction. An analogous procedure, namely coronary artery bypass surgery has already been successful. Accordingly, a clinical trial (randomized controlled trial) was carried out and patients with cerebral ischemia due to ICA obstruction wee randomly subjected to either bypass surgery or conservative treatment. Although the surgery was successful, the 5 year mortality and stroke recurrence between the two groups of patients were similar, but deaths occurred earlier in the bypass group.

WHAT IS COMMON AMONG THESE OBSERVATIONS?

The observation of William Withering with the foxglove is an example of defining research as ‘a studious inquiry or examination aimed at the discovery and interpretation of facts’; the revised cutoff level for treatment of hypertension is an
example of ‘revision of accepted theories or laws in the light of new acts’, and surgery in ischemic stroke is an example, albeit unsuccessful, of ‘practical application of theories’. These observations, spread across time and space, are examples of the different facets of medical research.

**CLINICAL RESEARCH METHODOLOGY**

Research methodology is a way to systematically solve the research problem. In other words it is the process by which the research is systematically carried out to get an answer to a problem.

Research methods are the techniques used to carry out a research work, e.g. the different methods used to collect and store the data (scientific information); the various statistical techniques used to establish relationship between different sets of data under comparison; and the different methods establish relationship between different sets of data under comparison; and the different methods employed to determine accuracy of results obtained. Researchers should know (i) exactly which methods or techniques are relevant for a particular study, (ii) how to apply particular research techniques in their study, and (iii) how to interpret the results in terms of clinical relevance.

To start any research the researcher should first develop an ‘Idea’ (research Question) which helps to formulate the ‘Research Hypothesis’ and develop the ‘Research Objective(s)’. Based on the Research Objective(s) the researcher next decides what will be the design of the study (Type of study). For example, if the Research Objective is to determine the prevalence of a disease (say congestive heart failure) in a community, the study design is ‘Cross Sectional Study’ (an observational study). If on the other hand, community, the study design is ‘Cross Sectional Study’ (an observational study). If on the other hand, one wishes to find out whether Drug A is superior to Drug B in treating disease P, then the study design will be a interventional clinical trial, most commonly a ‘Randomized Control Trial (RCT)’ *

Based on the study objectives formulated by the researcher, there will be different types of study designs (Figure 1). For the sake of brevity we will confine our discussion to Clinical Research with special emphasis on RCTs.

**CLINICAL RESEARCH**

Clinical research is a type of medical research that determines the safety and effectiveness of specific health and medical products and practices like medications, devices,
diagnostic tests and treatment regimens intended for human use. These may be used for prevention, treatment, diagnosis or for relieving symptoms of a disease. Clinical Research should not be confused with clinical practice. In clinical practice, one uses established treatments while in clinical research evidence is collected to establish a treatment.

JUSTIFICATION FOR CLINICAL TRIALS

Vasodilators are used in heart failure, phenytoin in epilepsy, nitrates in coronary artery disease (CAD) ..... the list is unending. There are also alternatives: ACE inhibitors for heart failure, valproate or carbamazepine for epilepsy, or a PCI or CABG for CAD. The idea to use some form of treatment or intervention for a disease or to search for better alternatives to the existing ones comes from different sources, e.g. case reports, clinical observations, biological phenomena, scientific reasoning, epidemiological observations etc. These ideas, through the Research Question and subsequent steps (Figure 2) ultimately determine the Type of Study (Study Design) required. In case of questions relating to treatment (i.e. intervention) the study design commonly adopted is the clinical trial. The best form of a clinical trial is the RCT.

RANDOMIZED CONTROLLED TRIAL (RCT)

Much of what is known today about the safety and efficacy of specific interventions and treatments has come from RCTs that are designed to answer important scientific and health care questions. RCTs form the foundation for Evidence (EBM), but such research can be relied upon only if it is conducted according to principles and standards collectively referred to as “Good Clinical Research Practice” (GCP). RCT is an experimental comparison study in which participants are allocated to treatment (intervention) or control (placebo) groups using a random mechanism (such as coin toss, random number table, or computer-generated random numbers). Participants have an equal chance of being allocated to an intervention or control group and therefore allocation bias is eliminated.

Steps in a RCT

Patients to be studied are first selected (sample) from a larger number of patients (population) with the condition of interest (Figure 3). They are divided, using randomization, into 2 (or more) group of comparable prognosis. The group subjected to the intervention is called the treatment (or experimental) group and the other group receiving conventional therapy or placebo (i.e. no intervention) is called the control (or comparison) group. The treatment (or experimental) group is exposed to an intervention that is believed to be better than current alternatives. The control (or comparison) group is treated the same in all ways except not exposed to experimental intervention; and may receive placebo usual care or current best available treatment. RCT’s may have more than one control group. The course of disease is recorded in both the groups and the difference in outcome are attributed to the intervention.

Fig. 2 Justification for Clinical Trials showing how different ideas of Treatment lead to a RCT

Sampling in RCT

Sampling in RCT should follow rigorous inclusion and exclusion criteria for several reasons. It increases the homogeneity of patients selected, strengthens the internal validity of the study and makes it easier to distinguish treatment effect from chance and bias. Sampling process should also follow strict exclusion criteria, and patients with co-morbidity, low life-expectancy, patients with contraindication to either treatment, or patients refusing participation in trial and those with poor compliance (adherence) are generally excluded from the study.
However, by applying strict inclusion and exclusion criteria patients with mild, unusual or equivocal manifestations will be excluded and make the sample more homogenous, improving homogeneity and restricting heterogeneity improves internal validity of the study but at the same time diminishes generalizability (external validity) or applicability of the results of the study to different groups of population.

**Treatment Allocation in RCT**

For a RCT to be successful certain procedures are to be strictly followed. Allocation of treatment to either group should be done randomly. The patients assigned to either experimental or control treatment should be made by a disciplined procedure similar to flipping of a coin (randomization). This will ensure reduction of bias in the study. If strict randomization procedure is followed in treatment allocation, the baseline characteristics (e.g. age, sex, habitation etc.) of patients in both the groups are likely to be similar and the groups would be comparable. But this is usually possible if the number of patients is sufficiently large enough. Hence to verify whether randomization has been effective it is essential to compare the baseline characteristics of the groups and find out if they are similar or not.

**Blinding in RCT**

Blinding is a process in a study protocol that prevents those involved in the clinical study (the researchers) from knowing to which treatment groups the subjects have been assigned. Blinding of the subjects themselves minimizes bias in patient responses; blinding of outcome assessors minimizes biasing of measurements. Blinding can occur at the four possible levels, viz;

1. **Allocation concealment**: in this process the person assigning the patients to either the treatment or control groups will himself/herself not be aware to which group he/she is assigning the patients.
2. **Patient**: here the patients will not be aware whether they are in the control group or in the treatment group.
3. **Clinician**: the clinicians actually treating the patients will not know which of the patients are in the treatment group and which are in the control group of the trial.
4. **Measurement of outcome**: the observer who measures the outcome of the study, eg. the clinician measuring the degree of pain relief by a experimental drug in a particular trial, the radiologist assessing the size of the pleural effusion, the cardiologist assessing the LV function in an echocardiograph, or the pathologist trying to measure the staging of a tumour will not be aware whether his/her observation is in a patient from the treatment group or control group.

**Efficacy and Effectiveness of a RCT**

In any RCT two questions come to the clinician’s mind: (i) Can this treatment work under ideal circumstances? (ii) Will this treatment work under ordinary circumstances? The first question will answer about the efficacy and the second one about the effectiveness of a trial. Efficacy trials are those in which treatment can work under ideal circumstances, having certain qualities like excellent patient adherence to treatment, best possible care has been provided, there is no extra-
Limitations of RCT

RCTs are the gold standards of any type of clinical intervention studies, and are the least biased of all research studies. They are ranked only next to the systematic reviews in the hierarchy of evidence. Although they are of very high standards, certain clinical questions cannot be resolved even after many RCTs, e.g. Is screening mammography a really effective tool? There are also some practical limitations of RCTs – (i) These trials are done in a limited number of patients at a time or in one place with strict criteria enhancing its internal validity but are expected to have generalizability. (ii) They are very expensive to carry out and takes a long time for any results to be published.

PHASES IN CLINICAL TRIALS

Clinical trials are conducted in various phases. At each phase the trials have a different purpose and help researchers answer different questions.

Phase I trials : Researchers test an experimental drug or treatment in a small group of people (10-50) for the first time to evaluation its safety, determine a safe dosage range, and identify side effects. Control group is not kept.

Phase II trials : The experimental study drug or treatment is given to a large group of people (100-300) to provide preliminary information on whether the drug is efficacious and to further evaluate its safety and the relation between dose and efficacy.

Phase III trials: These are randomized trials that provide definite evidence of efficacy and rates of common side effects. These trials include enough patients, usually several thousands, to detect clinically important treatment effects. But they are not large enough to detect uncommon side effects. The results are usually published in journals.

Phase IV trials (Post marketing surveillance): These trials are conducted after the drug is in general use. It is necessary to follow up very large number of patients for rare or uncommon side effects and their rates of occurrences and optimize the use of the drug.

CONCLUSION

Clinical trials in the form of RCTs are the cornerstones of EBM. They are ranked only next to the systematic reviews in the hierarchy of evidence. However, these studies are time consuming and are very expensive. Because they involve human subjects and their results determine the future course of treatment for any disease, these studies must be done with the highest degree of ethical standards, as laid down by the ICMR or other regulatory bodies of the country. The results should also be taken judiciously, keeping in mind the external validity (or applicability) of the results of the trials undertaken in different population groups of the community.

REFERENCE

NANOTECHNOLOGY IN OPHTHALMOLOGY

S. Venkatesh

Nanotechnology involves the creation and use of materials in the order of less than 100 nanometers. These materials and devices at a size comparable to intracellular structures and molecules operate at a single cell level.

Nanotechnology is going to revolutionize the management of several ophthalmic diseases including AMD (Age related Macular Degeneration), glaucoma, retinal degenerative diseases and also going to modernize several fields including measurement of IOP, prevention of scarring after glaucoma surgery and ocular drug delivery.

Nanocarriers deliver ocular medications to target sites specifically. The barriers that impede drug access to specific sites of action include superficial barriers like ocular surface epithelium, tear film and internal barriers like blood – aqueous and blood retinal barriers. Topical applications and intraocular injections especially intravitreal injections are the two important routes of administration of drugs in ocular diseases.

These two routes have disadvantages due to poor bioavailability needing frequent topical applications and repeated intra ocular injections to achieve the therapeutic dose of the drug at the target tissue, for example, the Anti-VEGF medication quickly leaves the eye after the injection that for the proper treatment, additional injections, are needed, which adds the risks of local and systemic adverse events.

In nanotechnology, we use Drug loaded Polymeric Nanoparticles (DNPs), Nanobubbles, etc to deliver the ocular drugs to specific target sites.

Nanoparticles carry even the poorly water soluble drugs and assure improved passage of topical application to the target tissues eg., glucocorticoid drugs , cyclosporine etc for immune related disorders.

Large unstable molecules such as nucleic acids are also delivered using nanoparticles in gene transfer therapy for retinal degenerative disorders.

Nanoparticle mediated drug delivery offers increased contact time of the drug with the required target tissue, eg, brimonidine in glaucoma management.

The Drug- loaded Polymeric Nanoparticles (DNPs), the submicron particles carry the drug to the target site of action, is decreased doses, hence decreased side effects. They have certain good biological properties like biodegradability, non toxicity, biocompatibility and muco-adhesiveness. They as potential drug carriers led to the development of new colloidal delivery vehicles. They offer bioavailability without blurring the vision.

The new Nanobubbles carry the medications like anti- VEGF medications. They allow these medications to accumulate in the retina for a longer period of time until activated selectively using ultrasound. The Nanobubbles are dyed a fluorescent yellow, allowing them to be visible for imaging. They can be guided and may be released at the site of action, once they are in place. These Nanobubbles keep the medications loaded; and allow disbursement of the drug only after reaching the target area, thereby reducing number of doses of injections. These Nanobubbles are biodegradable.

Nanoparticles allow the possibility of targeted drug delivery to specific types of cancer cells such as melanoma, thereby leaving normal retinal cells, unharmed by the medications.

Thus nanotechnology holds promise in the management of certain diseases for which no significant management to get back vision exists today.

The scope of the nanotechnology in the understanding, investigating and managing glaucoma is multi-faceted. To understand glaucoma, a model that can closely resemble the natural trabecular meshwork is needed, which is now possible with nanotechnology. By weaving tiny fibres that had been nano-engineered, a near natural replica of trabecular meshwork is a possibility today. Nanosurgical techniques help in preventing scarring of the bleb after glaucoma surgery.

In case of severe degenerative retinal disorders nanotechnology may be sight restoring if gene transfer therapy succeeds. The nucleic acids are transported via nanoparticles more stably than before.

Obstacles to the inclusion of nanotechnology to clinical practice exist like safe manufacturing techniques, unexpected biological consequences of the nanomaterial use. But these hurdles and obstacles are not insurmountable. So surprising and redefining management options are expected to arise from this burgeoning field.

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Ulceroproliferative growth (red) measuring 6x5 cms in proximal ascending colon (black), 7 cms from one resected end

Poorly circumscribed homogenous, firm, grey tan cut surface (red)

**T CELL RICH B CELL LYMPHOMA OF ASCENDING COLON**

Mary Lilly¹, K. Chandramouleeswari¹, Sathyalakshmi¹, C. Arun Prabhakaran¹

TCRBCL was first recognized as a separate entity by Ramsay et al. in 1988, who described a B-cell lymphoproliferative disorder in which the majority of the cells are reactive T-lymphocytes (> 90%) with large neoplastic B-cells accounting for < 10% of the overall infiltrating lymphoid cells. Usually the lymph nodes are primarily involved (75%) with or without cutaneous involvement. It is an aggressive lymphoma that often presents as stage IV disease, with frequent bone marrow involvement and requiring systemic chemotherapy.

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T cell rich B cell lymphomas (TCRBCL) are recently described unusual non-Hodgkin lymphomas. They account for 1-2% of all Non-Hodgkin lymphoma. The revised European-American lymphoma and adopted WHO classifications currently classify TCRBCL among the diffuse large B cell group, since they have a diffuse growth pattern and because large transformed B cells comprise the neoplastic population.

It has to be differentiated from nodular lymphocyte predominant Hodgkin’s lymphoma (NLPHD). Large B cells in T cell rich B cell lymphoma can be confused with RS cells in Hodgkin’s lymphoma. The diagnosis can be confirmed with immunohistochemical analysis because there are CD20 positive neoplastic B cells and CD3 positive reactive T cells in the background, whereas in NLPHD, neoplastic cells are CD20 positive and the background show CD20 positive reactive B cells.
CONJUNCTIVAL CYSTIC PTERYGIUM

S.Venkatesh

Abstract
The halo sign is a circular area of ground-glass attenuation that is seen around pulmonary nodules at computed tomography (CT). Although the sign is most often an indication of pulmonary hemorrhage, it may also accompany other lesions associated with different disease processes. The aim of this review was to describe the appearance of halo sign on CT and the differential diagnosis for the same.

INTRODUCTION

 Conjunctival cysts are thin walled cysts. They usually progress gradually. They are symptomless during early stages but as they increase in size, they can lead to cosmetic disfigurement, reduced ocular motility, foreign body sensation and dry eye. They can be primary or secondary. Primary cyst are congenital and usually hidden in the fornix and increase in size slowly.

The secondary cyst can be implantation cyst following trauma, parasitic cyst, cystic pterygium or degenerative cyst. Treatment is complete excision where care must be given for intact removal to prevent recurrence. In some cases of parasitic cysts, even lateral orbitotomies may be needed to remove the cyst completely.

CASE REPORT

45 year old male patient with complaints of swelling over the surface of right eye over 6 months. Clinical examination showed conjunctival cyst with underlying pterygium. The cyst was excised in total along with pterygium excision with autograft and no recurrences noted during the following 9 months.

DISCUSSION

Cystic pterygium, depicted in the picture is located near the head of the pterygium. They can be found embedded in the body of pterygium. There was no adherence of the cyst to the underlying structures. The excision of the cyst was followed by excision of pterygium. The parasitic origin of the conjunctival cyst, if a hydatid cyst, may be having an orbital or retroorbital location, and they usually present near the fornix.

The other important differential diagnosis include conjunctival lymphatic cyst retention cyst, epithelial implantation cyst following trauma, pigmented epithelial cyst following prolonged topical use of cocaine or epinephrine, and aqueous cyst following surgery.
REFERENCES

CLINICAL SCENARIO
48 Year old male, a post renal transplant patient on triple immunosuppression presented with:
(a) fever 2 weeks duration
(b) cough with expectoration 2 weeks duration
(c) hemoptysis 2 days.

DIFFERENTIAL DIAGNOSIS

Hemorrhagic nodules of infectious origin
1. Mucormycosis
2. Candidiasis
3. Tuberculosis
4. Viral pneumonia
5. Invasive aspergillosis - most common cause of the CT halo sign

Hemorrhagic nodules of non-infectious origin
1. Wegener granulomatosis
2. Kaposi sarcoma
3. Hemorrhagic metastases

Tumor cell infiltration
1. Bronchioloalveolar carcinoma
2. Lymphoma
3. Metastasis with intra-alveolar tumor growth

Nonhemorrhagic lesions
1. Sarcoidosis
2. Organizing pneumonia

Diagnosis must therefore be based on careful consideration of all the CT chest findings within the context of the patient’s clinical state.

Abstract
The halo sign is a circular area of ground-glass attenuation that is seen around pulmonary nodules at computed tomography (CT). Although the sign is most often an indication of pulmonary hemorrhage, it may also accompany other lesions associated with different disease processes. The aim of this review was to describe the appearance of halo sign on CT and the differential diagnosis for the same.

On photo: Halo

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CT Halo sign
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AIMS AND SCOPE

Stanley Medical Journal (SMJ) is the official publication of Govt. Stanley Medical College and Hospital. The Journal will be published quarterly (January, April, July, and October). SMJ publishes original articles, case reports, review articles, brief reports, Letter to Editor, Editorials, news and views, clinical vignettes and announcements on all aspects of the medical field. All submissions to the Journal require a cover letter.

All manuscripts must be prepared in accordance “Uniform Requirements for Manuscripts Submitted to Biomedical Journals (URM)” developed by the International Committee of Medical Journal Editors’ (Oct 2004).

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Manuscripts for “Stanley Medical Journal” is to be submitted by e-mail to smj.journal@gmail.com

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General Format

All text should be double-spaced with 1-inch margins on both sides using 11-point type in Times New Roman font. The entire document should be paginated. All tables and figures must be placed after the text and must be labeled. Submitted papers must be complete, including the title page, abstract, figures, and tables. Papers submitted without all of these components will be placed on hold until the manuscript is complete.

Authors are encouraged to cite primary literature rather than review articles in order to give credit to those who have done the original work.

• Abbreviations must be defined when first used in the abstract and in the main text, as well as when first used in table and figure captions.

• Manuscript should follow this format: Title page, Abstract, Introduction, Material and Methods, Results, Discussion, References, Tables, Figure captions and Acknowledgements

Title Page

The first page of all manuscripts should contain the following information:

1) the title of the paper
2) a running title not exceeding 50 characters for page heading
3) 3-6 article keywords for indexing and information retrieval
4) word count of manuscript (excluding abstract, reference table and figure count)
5) complete names of all authors.
6) names of the departments and institutions at which the research was conducted, clearly linked to respective authors
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Original articles should be submitted with structured abstract of up to 250 words with the format: Background/Objectives, Methods, Results, Conclusions. Brief Reports, Case Reports, and Review Articles require unstructured abstract.

References

(a) The author is responsible for the accuracy of the references. References should be numbered consecutively throughout the text and identified by numbers in parentheses. References should be cited in full at the end of the article following the Vancouver style

(b) Reference order: names of all authors, article title, journal name abbreviated as in Index Medicus, year of publication followed by semicolon, volume followed by colon, first and last page numbers.

Sample references:


(c) Unpublished work, work in preparation or personal communications should not be used as references

(d) Journal article in press, articles in edited books and abstracts presented in congresses can be used

(e) Book: cited as follows


(f) Article in multi-authored book:

Tables
(a) All tables should be created through a table editor in a word processing function. Do not use spaces or tabs.
(b) Tables should be typed and double spaced, each on a separate sheet.
(c) Numbered according to order of citation.
(d) Table number and title should appear above the table, explanatory notes below.
(e) Tables must not simply duplicate the text or figures.
(f) The width of the table must be designed to occupy one or two journal columns, with no more than four table columns or 8-10 table columns, respectively.

Figures and Legends
(a) Plan the size of the figure to fill 1, 1.5, or 2 columns in the printed journal. In most cases, figures should be prepared for 1-column width. The column dimensions are: 1 column = 7.5 cm; 1.5 columns = 12.5 cm; 2 columns = 16.0 cm
(b) Figures should be limited to those essential for the text.
(c) Color may be used without charge.
(d) All figures, whether photographs, graphs, or diagrams, should be numbered consecutively.
(e) Figures must be at least printer quality (300 dpi) to ensure quality appearance.
(f) Line drawings should be supplied as clear black and white drawings suitable for reproduction. All lines should be of uniform thickness.
(g) Arrows, letters, and numbers should be inserted professionally. If this is not possible, inscriptions should be made on a transparent overlay (not on the actual photograph). Micrographs should have an internal magnification marker; the magnification should also be stated in the legend.
(h) Figure legends should be typed double spaced. Numbered according to order of citation. Provide enough information to permit interpretation of figure without reference to text.
(i) Figures/diagrams should be created/scanned and saved and submitted as individual files preferably as either Power Point files, JPG files or TIFF files.

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