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By Stanley Alumni Association

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Another year has passed and we are trudging along the path of providing healthcare. The promises of developing technology give us a lot of hope, but the failure to utilise the available resources and knowledge make us wonder if any amount of technological advancements alone could save us the plight of suffering!

Why the pessimism you wonder? Well, our failure to follow simple measures that have a lasting impact like basic cleanliness, personal hygiene and keeping our surroundings neat show there’s a long winding road of progress to cross. Why this suddenly? Well, thankfully we have had a fall in the Dengue cases after the rampant surge that we encountered in the past few months. The number of people affected and the morbidity and mortality that resulted could have been significantly lower had people been more vigilant about the basic environmental cleanliness. Well, we are past the crescendo. But NOW is the time to start if we are to avert another repeat of what we encountered.

Start today. Stay smart. And importantly, stay clean.

Dr. B. Skanthavelan,  
CRRI  
Govt. Stanley Medical College
Original Article

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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.
INTRODUCTION:

Tracheobronchial foreign body aspiration is a common emergency in childhood constituting major cause of mortality. The Council of America cited the inhalation of foreign bodies, as a leading cause of accidental death at home, in children younger than 6 years of age [1, 2]. Although foreign body aspiration can be seen in all ages, it is most common under the age of three [3–5]. Although ample studies regarding airway foreign bodies are present in western literature, studies in Indian context are however lacking. Children, and in particular the very young, are the most vulnerable for aspiration and ingestion of foreign bodies. Aspiration of a foreign bodies into the air passages conventionally occurs in older infants and toddlers. Boys are affected more than girls in a ratio of 2:1. It has been estimated that the vast majority of foreign bodies aspiration takes place in children under the age of 4, while the peak incidence seems to occur between the age of 12 and 24 months. These children can explore the outside world with their mouth, putting any object they can get hold of within their mouth, while they still lack proper molars to grind objects to smaller (and less dangerous) pieces.

SUBJECTS AND METHODS:

Children admitted in institute of child health and hospital for children during the period of 2007 April to 2008 April with history of aspiration taken for study

INCLUSION CRITERIA:
1) Patients with suspected foreign body aspiration based on history and clinical features.
2) Patients with accidental finding of foreign body in the lower respiratory tract when investigated for some other purpose.

EXCLUSION CRITERIA
Foreign bodies in upper airway and in gastrointestinal tract

RESULTS:

Of the 162 children who were suspected to have foreign body aspiration during this period, 101 children required flexible fiber optic bronchoscopy for confirming the diagnosis before doing rigid bronchoscopy. In the remaining 61 cases rigid bronchoscopy was done directly. (Table-1) Of these a total of 136 cases were found to have foreign body in the tracheobronchial tree. The age group of the children in our study ranged from six months to 12 years, with 86.0% being below the age of three years (Table-2). Of the 136 children 97 were male and 39 were female with the male to female ratio of 2.4:1. In our study we found that 69.12% (n=94) of
the children were living in joint families with many siblings.

**Table-1: Procedures done to diagnose and remove foreign bodies in airway**

<table>
<thead>
<tr>
<th>PROCEDURE</th>
<th>FOREIGN BODY PRESENT</th>
<th>FOREIGN BODY ABSENT</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexible fiber optic bronchoscopy (FFBS)</td>
<td>83*</td>
<td>18</td>
<td>101</td>
</tr>
<tr>
<td>Rigid bronchoscopy done directly with out FFBS</td>
<td>53</td>
<td>8</td>
<td>61</td>
</tr>
</tbody>
</table>

* In all these cases rigid bronchoscopy was done after FFBS to remove the foreign bodies

**Table-2 Age of children with foreign body aspiration**

<table>
<thead>
<tr>
<th>AGE (YEARS)</th>
<th>NO OF PATIENTS</th>
<th>TOTAL</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td></td>
</tr>
<tr>
<td>&lt; 1</td>
<td>11</td>
<td>5</td>
<td>16</td>
</tr>
<tr>
<td>1-2</td>
<td>31</td>
<td>23</td>
<td>54</td>
</tr>
<tr>
<td>2-3</td>
<td>36</td>
<td>11</td>
<td>47</td>
</tr>
<tr>
<td>&gt;3</td>
<td>19</td>
<td>0</td>
<td>19</td>
</tr>
<tr>
<td>Total</td>
<td>97</td>
<td>39</td>
<td>136</td>
</tr>
</tbody>
</table>

Most of the children (62.5%, n=85) had working mothers, in which case the care taker is someone else other than the mother. A positive history of foreign body aspiration was present in 51.4% (n=70) patients. The duration between the time of aspiration and presentation varied from few hours to one year. Of the patients with a positive history of foreign body aspiration, only 45.71% (n=32) presented with in 24 hours. Twenty nine patients (41.43%) presented from 1 to 14 days of foreign body aspiration. Nine patients (12.86%) presented after 14 days of treatment with drugs (Table-3). Our study showed that the most common symptom was cough in 59.56% (n=81) of cases, followed by respiratory distress in 54.41% (n=74) of cases.

**Table-3 Duration of symptoms in children with definite history of foreign body aspiration**

<table>
<thead>
<tr>
<th>SYMPTOMS DURATION</th>
<th>NO. OF PATIENTS</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1 day</td>
<td>32</td>
<td>45.71</td>
</tr>
<tr>
<td>2-14 days</td>
<td>29</td>
<td>41.43</td>
</tr>
<tr>
<td>&gt;14 days</td>
<td>9</td>
<td>12.86</td>
</tr>
<tr>
<td>Total</td>
<td>70</td>
<td>100.00</td>
</tr>
</tbody>
</table>

common sign was unilateral decrease in air entry present in 61.76% (n=84) of cases (Table-4). Obstructive emphysema was the commonest radiological feature in 48.53% (n=66) cases. Pneumonitis was present in 19.85% (n=27) cases, 13.23% (n=18) cases had collapse and 3(2.21%) cases had bronchiectatic changes. Three(2.21%) cases had radioopaque foreign bodies. Chest X-ray was normal in 13.97% (n=19) of cases (Table-5). Fluoroscopy was done in 11 patients of which 6 were positive. Since in our institution we had easy access to flexible fiberoptic bronchoscopy doubtful cases were directly taken up for flexible fiberoptic bronchoscopy than fluoroscopy. Flexible fiberoptic bronchoscopy was done in

<table>
<thead>
<tr>
<th>FEATURES</th>
<th>NUMBER N = 136</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Choking episode</td>
<td>70</td>
<td>51.47%</td>
</tr>
<tr>
<td>Persistent cough</td>
<td>81</td>
<td>59.56%</td>
</tr>
<tr>
<td>Respiratory distress</td>
<td>74</td>
<td>54.41%</td>
</tr>
<tr>
<td>Stridor</td>
<td>11</td>
<td>8.09%</td>
</tr>
<tr>
<td>Decreased air entry</td>
<td>84</td>
<td>61.76%</td>
</tr>
<tr>
<td>Wheezing</td>
<td>22</td>
<td>16.18%</td>
</tr>
<tr>
<td>Fever</td>
<td>28</td>
<td>20.59%</td>
</tr>
</tbody>
</table>
61.03% (n=83) cases. In cases with foreign body aspiration

**Table-5: Radiological signs in children with foreign body aspiration**

<table>
<thead>
<tr>
<th>RADIOLOGICAL SIGN</th>
<th>NO. OF PATIENTS</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obstructive emphysema</td>
<td>66</td>
<td>48.53</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>27</td>
<td>19.85</td>
</tr>
<tr>
<td>Collapse</td>
<td>18</td>
<td>13.23</td>
</tr>
<tr>
<td>Bronchiectasis</td>
<td>3</td>
<td>2.21</td>
</tr>
<tr>
<td>Radio opaque foreign bodies</td>
<td>3</td>
<td>2.21</td>
</tr>
<tr>
<td>Normal</td>
<td>19</td>
<td>13.97</td>
</tr>
<tr>
<td>Total</td>
<td>136</td>
<td>100.00</td>
</tr>
</tbody>
</table>

22.89% (n=19) had granulation tissue. Repeat flexible fiberoptic bronchoscopy was required in 22 cases. Rigid bronchoscopy was done in all the cases to remove foreign bodies. Three cases required repeat rigid bronchoscopy to remove the remnants. Foreign bodies were found in the right side in 50% (n=68) cases and in the left side in 38.24% (n=52) cases. Eight cases (5.88%) had foreign body in the trachea and six cases (4.3%) had foreign body in the subglottis. Two cases (1.47%) had foreign bodies on both sides. (In our study vegetable foreign body was found to be the commonest, comprising 94.85% (n=129) cases. Among the vegetable foreign body peanuts were the commonest and was present in 64.71% (n=88) cases followed by coconuts in 7.35% (n=10) cases. Other foreign bodies like arecanut, tamarind seed, Bengal gram, grass weed, coconut flower were also seen. Seven cases (5.15%) had inorganic foreign bodies, which were mostly plastic objects seen in toys (Table-6). Thirty six percent (n=49) of the patients developed complications due to foreign bodies. Pneumonia was the most common complication in 19.85% (n=27) of cases followed by collapse consolidation in 13.23% (n=18) of cases. Three cases developed bronchiectasis. One child had developed bronchial stenosis even at the time of presentation (Table-7).

**Table-6: Types of airway foreign bodies in children**

<table>
<thead>
<tr>
<th>FOREIGN BODY</th>
<th>NO. OF PATIENTS</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic</td>
<td>129</td>
<td>94.85</td>
</tr>
<tr>
<td>Peanut</td>
<td>88</td>
<td>64.71</td>
</tr>
<tr>
<td>Coconut</td>
<td>10</td>
<td>7.35</td>
</tr>
<tr>
<td>Arecanut</td>
<td>6</td>
<td>4.41</td>
</tr>
<tr>
<td>Tamarind seed</td>
<td>6</td>
<td>4.41</td>
</tr>
<tr>
<td>Custard apple seed</td>
<td>5</td>
<td>3.68</td>
</tr>
<tr>
<td>Other Seeds</td>
<td>10</td>
<td>7.35</td>
</tr>
<tr>
<td>Bengal gram</td>
<td>2</td>
<td>1.47</td>
</tr>
<tr>
<td>Peanut hood</td>
<td>1</td>
<td>0.73</td>
</tr>
</tbody>
</table>

**Table-7: Complications due to Foreign Body aspiration**

<table>
<thead>
<tr>
<th>COMPLICATIONS</th>
<th>NO. OF PATIENTS</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pneumonia</td>
<td>27</td>
<td>55.10%</td>
</tr>
<tr>
<td>Collapse consolidation</td>
<td>18</td>
<td>36.74%</td>
</tr>
<tr>
<td>Bronchiectasis</td>
<td>3</td>
<td>6.12%</td>
</tr>
<tr>
<td>Bronchial stenosis</td>
<td>1</td>
<td>2.04%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>49</td>
<td>49</td>
</tr>
</tbody>
</table>

Three cases developed complications due to rigid
Bronchoscopy. Three cases developed pneumothorax and pneumomediastinum. One case developed hypoxic encephalopathy during rigid bronchoscopy. One child died after removal of their foreign bodies due to complications like pneumothorax and pneumomediastinum (Table-8).

**Table-10: Complications due to the procedure**

<table>
<thead>
<tr>
<th>COMPLICATIONS</th>
<th>FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pneumothorax/ pneumomediastinum</td>
<td>2</td>
</tr>
<tr>
<td>Hypoxic encephalopathy</td>
<td>1</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>3</strong></td>
</tr>
</tbody>
</table>

On follow up all the cases with pneumonia resolved and the cases with bronchiectasis continued to have the findings and were treated with physiotherapy.

**DISCUSSION:**

Tracheobronchial foreign body aspiration is an important life threatening condition in young children. Our study showed that children, less than 3 years of age were most commonly affected, as like in other studies Darrow and Holinger reviewed multiple case series and found that children younger than five years of age account for approximately 84% of cases and children younger than 3 years of age account for 73% [6]. The condition is more common in male patients as compared to females (63.4%) as was noted in other studies [7]. The younger group is more vulnerable because of the lack of adequate dentition. Our study showed a male predominance, which is in agreement with many other studies (5,6,7).

In our series, only 51.47% of the cases had a definitive history of foreign body aspiration. There may be a symptomless period after first paroxysm, which may vary in duration from few days to even months. However, subsequent wheezing, cough, choking and persistent pneumonitis point towards a possible foreign body aspiration. In our study 12.9% of the patients even with history of foreign body aspiration were referred after 2 weeks. These patients treated with antibiotics, bronchodilators and nebulisations before referral. One case even with a history of foreign body aspiration was treated as asthma and was referred after 6 months. One case with a plastic whistle presented after one year. Objects such as beans, seeds, and corn can absorb water, and with subsequent swelling, partial obstruction can change to total obstruction. On the other hand, patients who have inhaled small inorganic materials usually remain asymptomatic for a longer period of time unless total obstruction of a distal airway is caused. The clinical signs and symptoms were present in most of the patients. Cough was the most common symptom followed by respiratory distress. Unilateral decrease in air entry was the most common sign. Some of the cases presented only with the clinical features of foreign body without any history or radiological features. Emphysema is the most common radiological finding in paediatric age group and atelectasis and collapse is common in adults [8, 9]. The proportion of normal radiographs reported in the literature varies from 8 to 0.80%, depending on the study and the location of the foreign body [10–13]. Vane and colleagues reported...
that more than 90% of foreign bodies were radiolucent. In our study, foreign body can be clearly identified in only 2.43% cases [14]. Nuts in general and peanuts in particular remain the most commonly found aspirated foreign bodies in children in various studies [15,16]. In contrast, more industrialized countries have a greater incidence of plastic foreign body aspiration. This is due to the frequent use of small plastic parts in the toy industry [17,18]. So a high index of suspicion is necessary to diagnose foreign body aspiration.

REFERENCES:


Acknowledgement:
We sincerely acknowledge the Director of ICH, the HOD ENT department without whom the article wouldn’t found its way
INTRODUCTION:

Carcinoma of the uterine cervix is the most common cancer in south Indian women. It occupies the top rank among cancers in women in most developing countries. They constitute 34% of all the cancers in women(1). Multifactorial causation, potential for prevention, and the sheer threat it poses make cervical carcinoma an important disease for in-depth studies. Almost all sexually active women are infected with HPV at least once of their lifetime. HPV transmission exclusively occurs following skin-to-skin contact with an infected partner. HPV can only replicate in stratified squamous epithelium. HPV infection is the most common sexually transmitted diseases(2). The current estimate suggests that approximately 132,000 new cases diagnosed and 74000 deaths occur annually in India thus accounting to nearly 1/3rd of the world’s cervical cancer deaths(3). Cervical cancer is highly amenable to screening, although early detection of dysplasia has failed women in developing countries, as indicated by the large number of people who report in late stages. The highest prevalence is seen soon after the onset of sexual activities(4,5). An important proportion of the burden of HPV disease is due to nononcogenic HPV-6 and 11(6). Persistent infection with genital human papillomavirus (HPV) is causally linked with many genital cancers, including cervical cancer(1,3). Genital HPV genotypes are further categorized broadly into low-risk (LR) and high-risk (HR) types based on their ability to cause cervical neoplasia. LR HPV genotypes are known to cause HPV associated anogenital warts, whereas HR HPV genotypes are known to cause cervical neoplasia.
on their oncogenic potential. The Persistence of HR-HPV in the transformation zone of about 10% of infected persons may lead over time to squamous intraepithelial lesions (SIL) or cervical intraepithelial neoplasia. Due to its contagious nature and recurrence, it causes morbidity and high levels of anxiety (7). A majority of episodes of type-specific HPV infection resolve spontaneously within 2 years, but this may be followed by an infection with a new type(8). If we consider the major risk factor for infection they mostly relate to sexual behaviour that may include early age of onset of sexual activity, multiple sexual partners, and co-infection with HIV(9). Although the risk for persistent infection and progression to invasive diseases are not completely understood. The persistence appears to be related to HPV type and concurrent infection with multiple virus types(9).

The main secondary prevention involves screening for precancerous lesions and treating them. The three screening modalities are cytology, visual inspection, and HPV test. In cytology testing which is commonly called Pap smear, cells are scraped from the squamo-columnar junction of the cervix and fixed on a glass slide for reading by a trained cytologist(10). This method, has several limitations, such as high false-negative rates, low sensitivity, subjective interpretation, and low predictive value, as one-third of women who progressed to cervical cancer had a normal Pap smear(11). The notification of results to women as well as the visits required for cytologic screening pose challenges both logistic and lost to follow up(11). The visual screening methods were developed based on the principle that a higher concentration of intracellular proteins leads to a dense aceto-whitening effect. Its advantage is that it is inexpensive method and requires minimum equipment(11). The sensitivity of VIA to detect CIN2 and 3 lesions and invasive cervical cancer vary from 49% to 96% and the specificity from 49% to 98%(11). The more recent visual inspection with Lugol's iodine (VILI) was evaluated in cross-sectional studies in India and Africa, and the pooled sensitivity and specificity to detect high-grade CIN were 92% and 85% respectively, for VILI versus 77% and 86% for VIA, indicating a higher sensitivity for VILI but a similar specificity for VILI and VIA(12). The cost-effectiveness of a variety of cervical cancer screening strategies in India, Kenya, Peru, South Africa and Thailand showed that a onetime screening at 35 years with a 1-visit or 2-visit screening and treatment strategy involving VIA reduced the lifetime risk of cancer by approximately 25%–36% and cost less than US $500 per year of life saved(13).

The burden of cervical cancer in India, in the context of the additional problem of advanced disease at presentation, country’s limited resources and health infrastructure and the paucity of trained professional like cytologists, emphasise the urgent need for a control program. WHO has stated in studies that “Quite often a considerable discussion is found on which screening test to use, cytology or alternatives to cytology such as VIA or HPV testing or which combination/sequence of screening tests should be used for screening in developing countries. Choosing a screening test is only one aspect of a screening programme “Screening for cancer cervix is a crucial step in the way of preventing the disease. HPV DNA assay is the most sensitive test among all of the screening methods(14-16). As HPV infection has a long latency period even before the visible preinvasive lesions, which makes the test as the best screening method. In developing countries like India, there is a lack of an effective screening programme for cervical cancer. In these countries there is no clinically significant decrease in the incidence of cervical cancer in the past three decades(17-20). In the developed countries by contrast, there has been a major decline in cervical cancer related mortality after the introduction of national large scale cytological testing. HPV DNA (high risk) testing is also an integral part of these national screening programmes(21). The limited success of conventional screening programme in developing countries has stimulated the evaluation of HPV testing as a feasible screening test option. The aim of this study is to determine the HPV infection status of women in reproductive age group with preinvasive cervical lesions and to determine other associated risk factors in women with these lesions.

MATERIALS AND METHODS:

Study design and population:
This hospital based cross-sectional study was carried out in the department of Obstetrics and Gynaecology, Institute of social obstetrics & Government Kasturba Gandhi hospital, for a period of one year (June 2008-May 2009).

Sample size and sampling strategy:
The sample size was 350 patients in the reproductive age group 25-35 years with suspected pre-invasive lesions based on the assumption of 28% prevalence of infection, 95% confidence level and 4% absolute precision using open Epi software persons with lesion were recruited consecutively starting from the first person with lesion reporting on the day of the survey. Among them 50 patients screened in the
colposcopy clinic and identified with pre-invasive lesions were randomly selected for HPV testing. Our inclusion criteria were colposcopy guided histopathological findings of low grade and high grade cervical lesions. We excluded patients with pregnancy or within six weeks postpartum, postmenopausal women, post hysterectomy status, women not having sexual debut, invasive cancer cervix, normal colposcopic findings, previous cervical treatment for CIN and women with active PID or cervicitis.

Data collection, clinical and colposcopic examination:
We used a structured questionnaire to collect data regarding sociodemographic details, behavioural risk factors and history of other diseases. A detailed history regarding age of menarche, age at sexual debut, menstrual, gynaecological and obstetric history were obtained. We reviewed the clinical records and prescription for drugs and diagnostic tests. We measured the height and weight of all the study subjects. Blood pressure was measured in the right arm after the subject had been sitting for at least 5 minutes using an electronic automatic blood pressure apparatus (Omron). The average of the two readings taken 5 minutes apart was recorded. After confirming the consent, the colposcopy examination was carried out. The patient unwilling to participate in the procedure were given an option of opting out and the reason for the same were noted.

Colposcopy examination:
The colposcopic examinations and reporting of was done by two trained specialist based on recommended guidelines by the International federation for cervical pathology and colposcopy (IFCPC), 2008. Women with abnormal colposcopic findings –minor or major acetowhite areas (grade 1 or grade 2) underwent guided biopsy. In the follow up visit with the patients with histopathology confirmation of the lesions were counselled and explained about the subsequent management options using either cryotherapy, LLETZ and regular follow up cytology. The detailed follow up plan documented and followed up by the attending specialist incharge of the clinic The cervical treatment along with HPV testing were done within the next 2 weeks.

HPV Testing:
Samples collected by cervical brushings in liquid media and subjected to the assay. The HC2 High-risk HPV DNA test was done using capture 2 technology is a nucleic acid hybridisation assay with signal amplification that utilizes the micro plate chemiluminescent detection. It is a solution phase hybridisation assay which results in HPV DNA signal amplification. The assay uses RNA probes that react with 13 DNA targets. All the tests are done in the laboratory of Renu Diagnostics. The kit used, detects 13 High risk HPV subtypes in cervical specimens. The manufacturers are DIEGENE, 1201, Clopper Road, Gaithesberg, USA. AR Med Limited.

Statistical analysis:
Data was expressed in the form of frequencies and percent–ages. We calculated the various other co-morbid conditions with 95% CI. We also analysed the various risk factors for cervical lesions. We computed unadjusted and adjusted ORs with 95% CI using the logistic regression method. We adjusted each of the risk factors for age in separate models and used Epi-Info version 3.5.3 for data entry and analysis.

Protection of human subjects:
This study was approved by Institutional Human Ethics Committee of the Institute of Internal Medicine, Madras Medical College, Chennai, Tamil Nadu. Informed written consent was obtained from study participants after explaining the purpose of the study, risks, and benefits involved. The personal and statistical data of the participants were kept confidential throughout the study period.

RESULTS:
A total of 350 women were recruited for the study. The prevalence of HPV positivity among women who had pre-invasive lesion was 34%. The mean age of participants was 25±10 years. The age group mostly effected by pre-invasive lesion were 25-30 years, 66% [95%CI: 55.8 – 68.0 %] (Figure 1). Most of the participants were literates having middle school education and above [83.3%]. Almost 80% of the participants were married and 87% of them were home-makers with a family income of ≤Rs.2000/- per month. The participants largely belonged to Hindu religion [82%]. The mean age of consummation of marriage was 22 years [80%]. Two thirds [74.6%] of the respondents had two children (Figure 2). The sterilization methods adapted 84% puerperal sterilization, 8% IUCD and 4% barrier methods (Figure 3). Among the 50 participants randomly selected for HPV testing had colposcopy findings, 82% had LSIL and 18% had HSIL. With regard to the HPV DNA testing among women with preinvasive lesions 34% on the whole had HPV positive (Figure 5). On stratification 60% of women with
Table:1 Showing risk catagory

<table>
<thead>
<tr>
<th>RISK CATEGORY</th>
<th>AGE -ADJUSTED ODDS RATIO 95%CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low socioeconomic income</td>
<td>2.4 (1.8–4.6),</td>
</tr>
<tr>
<td>Age at marriage ≤22 Years</td>
<td>2.1 (1.9–2.5)</td>
</tr>
<tr>
<td>Exposure Smoking</td>
<td>2.3 (2.1–3.2)</td>
</tr>
<tr>
<td>Education less than mid school</td>
<td>2.2 (2.1-3.1)</td>
</tr>
<tr>
<td>Past history of STD</td>
<td>1.9 (1.5-2.6)</td>
</tr>
</tbody>
</table>

Low grade lesions and almost 100% of the women with High grade lesions were positive for the test. The risk factors for HPV infection were low socioeconomic income (AOR 2.4; 95% CI 1.8–4.6), Age at marriage (AOR 2.1; 95% CI 1.9–2.5), exposure Smoking (AOR 2.3; 95% CI 2.1–3.2), education less than mid school (AOR 2.2; 95% CI 2.1-3.1), and past history of STD (AOR 1.9; 95% CI 1.5–2.6) (Table.1).

DISCUSSION:

Although oncogenic HPV infection has been established as a causative factor of the precursors of cancer cervix as well as their progression to high grade and eventually to malignancy, there are some predisposing factors which play a substantive role in the causation and progression of these lesions. This study has tried to delineate Deoxyribonucleic acid (DNA) Viruses, a member of the family papillomaviridae(22,23). Over 100 different types of HPV viruses have been identified and are referred to by number. Type 16,18,31,33,35,39,45,51,52,56,58 and 59 are “high risk ” sexually transmitted HPV s and may lead to the development of cervical intraepithelial neoplasia (CIN) and vulval intraepithelial neoplasia.(VIN). HPV types 16 and 18 together cause about 70 % of cervical cancer. However, a vast majority of high risk HPV infection clears up and do not progress to invasive lesions.
The study says that HPV infection rate is increased among women of early sexual debut (24-25). The present study also shows a significant correlation between women who had early sexual intercourse at younger than 20 years, with higher incidence of high-risk type of HPV infection. This link is very much documented in other studies documented by Ellstrom et al in 1996 and Cherian Verghese in 2000 (26, 27).

HPV infection is sexually transmitted affects the immature metaplastic cells of uterine cervix and in an unknown proportion, results in squamous intraepithelial lesion (SIL) of differing variety” was the report given by National Health Research Institute, Taiwan, who conducted a multicentre survey of HPV in CIN with longitudinal follow up of the cases. An average estimation holds that about 60% of LSIL will regress, 30% will persist, and 10% will progress to high grade lesions and less than 1% become invasive lesions. Present study showed a high rate of infection among HSIL (100%) and LSIL (60%), which is very much documented in many of other studies [27-29]. Verghese et al showed 100%incidence in HSIL and 33% in LSIL. The total positivity rate of HPV testing among the study population with LSIL/HSIL was 76% (27).

The interval between initial infection and disease progression indicates that there are other factors involved, such as sexual habits, reproductive factors, other sexually transmitted diseases, coinfection with HIV, smoking, nutritional deficiency, genetic susceptibility, use of hormonal contraceptives, and high parity. With specific religious practices also modify the risk of developing cervical cancer in women following infection (30). In a population-based prospective cohort study in the southern part of India, there was a 2.5-fold increase in risk among women aged 50–59 years compared to those aged 30–39 years. There was a higher risk with more children and lack of education (31). Similarly, a hospital-based susceptibility study in North India found an increase in cytopathological abnormalities with increasing age and parity. (31). This is quite different in our study as the comment age group effected was 25–30. Other viral sexually transmitted agents such as herpes simplex virus have also been associated with squamous intraepithelial lesions (31). A meta-analysis of social inequality and the risk of cervical cancer showed a 100% increased risk in the low-social-class categories for the development of invasive cervical cancer. Although this difference was observed in all countries, it was stronger in low- and middle-income countries (32). The above finding is concurrent in our study as the comment population effected were from lower socioeconomic group. HPV infection shows higher incidence among women in low socioeconomic status where the genital hygiene is poor and among women with less than primary school education who have poor knowledge about sources of prevention. Gwande et al in their study about HPV status in under developed areas, stated that it is a disease of the poor educational status. Women of low socioeconomic status also had marriage at early age and less birth spacing which increases the incidence of HPV infection (32). Smoking impairs the antibody response against HPV and hence their HPV positivity status is maintained for a long time. Also, current smokers who show test positive for HPV at the time of their first pap smear were more than 14 times more likely to have precancerous lesions (33). In the study by Gunnel et al; it’s stated that “Cigarette smoking affects the immune system. Both smoking and HPV affects molecules known as cytokines, which control the tumour growth” (34). Present study shows a comparatively less incidence of HPV infection among condom users (34). In a summary of report by CDC, which was completed in July 2001, says that condom use prevents HPV infection to some extent. Cherian Verghese et al.
in his study has documented a very low incidence of HPV infection among users of barrier contraception (26). HPV infection is higher among women with past history of sexually transmitted infection. The present study showed a 75% HPV positivity rate in women with prior sexually transmitted infections (25). This also has been confirmed by other studies conducted by John W. Sellers “incident infection with carcinogenic HPV infection was highest in women aged 25-29 years and risk factors were consistent with a history of sexually transmitted infection in the past. Also a large proportion of the women who were HPV positive appeared to have cleared the infection after one year” (26).

The outcome in the development of vaccines against HPV infection are promising, it will take more time before they become widely available and to be cost effective. Being vaccinated does not guarantee protection against cervical cancer because the HPV strains that the available vaccines protect against are not the only strains that can cause cancer. Moreover, cervical cancer can also have other causes – smoking, for instance, is causally related to cervical cancer. Therefore, even women who have received the HPV vaccine need to be screened regularly for cervical cancer. Hence routine screening should continue to detect and treat women who are infected before the vaccination coverage or to identify infection with other type of HPV that are not covered by the vaccine (35).

LIMITATION:

Study conducted at the level of healthcare facility may not reflect the true burden of the infection in the community. We excluded study subjects with major health conditions and logistic issues which might undermine the true burden. It has been observed that direct referral of all women with suspected cervical lesions to colposcopy is possibly an excessive treatment. The possibility of selection bias was avoided by recruiting all consecutive cases and by the low referral rate. We attempted to minimize the recall bias by collaborating with local community health workers and by using a detailed and structured interview.

CONCLUSION:

Many of the accumulated evidences on etiologic associations and the differential world pattern, points to, cervical cancer being a preventable disease. The national program has a plan of implementation at the primary, secondary, and tertiary levels where the screening is opportunistic. There are resource limitations to establishing cervical cancer screening program as a priority program all over the country. Simultaneous behaviour change communication exercises and routine screening in registry areas with a high incidence can perhaps accelerate the decline. Sexual hygiene and use of barrier contraception may largely achieve this objective but there is a need for long term health education and acceptance. Improvements in socio-economic standards would automatically decrease the morbidity and mortality but this again is a long term process. Hence, secondary prevention assumes a vital importance in the context of the hurdles in implementing primary prevention methods. In a large country like India, with large growing population and limited resources, population screening methods like Pap smear is neither pragmatic nor cost-effective. It is thus essential that we evolve our own strategies. Women with abnormal cervix should have colposcopy and HPV testing wherever possible. HPV testing significantly reduce the need for less sensitive tests like pap smear and also considering the optimal cost-effectiveness, it may be a feasible test strategy for carcinoma cervix screening.

Acknowledgement:

We extend our gratitude and thanks to our patient and siblings for their cooperation to participate in the study. We would also like to thank the Directorate of Institute of Social Obstetrics & Government Kasturba Gandhi hospital for all the logistic and administrative support.

Conflict of interest:

Authors report no conflicts of interest.

REFERENCES:

5. Jacobs MV, Walboomers J, Snijders PJ, et al. Distribution of 37 mucosotropic HPV types in women with cytologically normal cervical smears: the age-related patterns for high-
INTRODUCTION:

GDM is defined as glucose intolerance of variable severity with onset or first recognition in pregnancy. This study was carried out in 100 AN patients who were diagnosed as GDM attending the antenatal outdoor. All GDM patients were followed up and treated with diet and or insulin therapy till delivery to know maternal and fetal outcomes.

SUBJECTS AND METHODS:

This study followed up 100 antenatal mothers in KGH from January 2016 to January 2017 who were diagnosed as GDM during their antenatal period, no age limits were considered. These patients were given 75 grams of oral glucose and venous blood sample was taken after 2 hours if values more than 140 g/dl they were considered as diabetic. Most of them became diabetic at their 24-28 weeks of gestation.

RESULTS:

Family history of diabetes mellitus, age >30 yrs, past history of GDM and BMI >25 kg/m2 were significantly associated with GDM group [ p <0.01]
Familial History

- Familial History
- No History

on age of mother < 30 yrs with + family history = general pregnant population risk. >30 yrs + family history = 3 x increased risk over general population.

BMI relation:
1. Women with BMI > 25 kg/m² has significant correlation with gestational diabetes. In this study all patients have BMI > 20 kg/m².
2. In that 46 individuals have BMI > 25 kg/m². This shows obesity acts as main risk factor for GDM. Since the level of adipose tissue is increased, insulin requirement is increased because of insulin resistance.
3. These patients may also have leptin deficiency and they fall in category of metabolic syndrome.

Pre pregnancy BMI:
In this study 40 percent of individuals have pre pregnancy BMI of more than 25 kg/m². This pre pregnancy BMI along with increased weight gain in pregnancy aggravates the scenario. Theory behind is the adipose tissue that produces adipocytokines like TNF alpha, visfatin, apelin, interleukin 6. TNF alpha has potential role in decreasing insulin sensitivity.

Age Factor:
1. Women with increased maternal age are at increased risk of developing diabetes.
2. Here 39% of patients age is more than 30yrs. These patients are also prone for other maternal complications like preeclampsia, increased operative interventions.

Management:
In this study 37% of women needed insulin and 63 percent managed with medical nutrition therapy. In that 37 percent, 16 percent of AN mothers who were initially managed with nutrition...
therapy changed over to insulin treatment.

**Mode Of Delivery:**
Diabetes per se is not a indication for cesarean section but many factors related to diabetes that pave way for operative intervention such as early induction, macrosomia[ CPD], age factors [>35 yrs], type of diabetes, and their glycemic control.

In this study 64% of GDM mothers are delivered by cesarean section which includes elective cesarean sections, and repeat lscs. Main indications behind lscs were failed induction, fetal distress,CPD.36% are delivered vaginally which include assisted deliveries like vacumm,outlet forceps that constitutes 10%

**Birth Weight Of Babies In GDM Mothers:**
Fetal macrosomia is defined as birth weight >4 kg . It affects 12% of newborn of normal women and 15-45%of newborn of GDM mothers.

Pederson hypothesis proposed maternal hyperglycemia leads to fetal hyperinsulinemia and increase in IGF1&2 leads to macrosomic baby:Here in this study results correlates with the hypothesis, 50% of babies born have birth weight more than 3 kg. And 25% of babies have birth weight of more than 3.5 kg.

**Postnatal Follow Up:**
Many GDM mothers revert back to normoglycemic levels after delivery. Their blood sugar levels are checked after 48 hours and repeated after 1 week. 78% of mothers became normal and started on normal diet. 7% of women needed insulin after delivery also . 15% advised meal plan because of their borderline blood sugar levels. These Patients advised for OGTT testing after 6 weeks and regular follow up. Many patients didn't turn up after 6 weeks for OGTT testing.

**CONCLUSION:**
Thus this study concludes that women with GDM are at increased risk in their adverse obstetric and perinatal outcome. Early diagnosis of GDM is necessary to prevent complications. Main risk factors associated with GDM are obesity, increased maternal age, familial history. We can reduce the burden of GDM by proper pre pregnancy counselling, dietary modifications ,glycemic control

**ACKNOWLEDGEMENT:**
Permission got from the director , Institute of social obstetrics and Government Kasturba Gandhi hospital for women and children Triplicane.
REFERENCES:

10. Ferrara A, Kahn HS, Quesenberry CP, Riley C, Hedderson MM. An increase in the incidence of gestational diabetes mellitus: Northern California, 19
INTRODUCTION:

The small bowel imaging is difficult and challenging because of its positioning, length, and motility. For many years, the most common radiologic modality for evaluating small bowel diseases are conventional small bowel follow through. Barium studies and endoscopy did not provide extramural involvement of the disease and time consuming, involves radiation, and become tedious in performing the study in every patient with clinical suspicious of small bowel disease. Therefore there came the evolution of cross sectional imaging with CT for small bowel at most institutions due to its widespread availability, low cost and higher spatial and temporal resolution. But the main disadvantage of CT is it is based on ionizing radiation hence the most preferable non ionizing modality MRI was brought up for small bowel imaging in diagnosing and follow up. As a result MR imaging methods were developed for imaging small bowel diseases with fast acquisition sequences like HASTE, Tru FISP and hence can be performed without artifact from peristalsis. MR imaging of small bowel disease allows the imaging of both intra and extraluminal disease and the complication of the disease without ionizing radiation.

MATERIALS AND METHODS:

This prospective observational study was done in Barnard Institute of Radiology, Rajiv Gandhi Government General Hospital, Chennai with a sample size of 50 patients after getting a written consent from all the patients. MR Enterography was done for all the patients, and diagnosed were followed with histopathology. Results: MR enterography had a sensitivity- 92.30% specificity-91.66% in detecting small as well large bowel lesion and sensitivity- 77.77% specificity-97.56% in detecting chronic disease with more detailed information on the characterization of the lesion. Conclusion: MR enterography is an excellent modality that has adequate transmural visualization of the small bowel and provides sufficient information about etiology, distribution, exact location, activity, and complications of the disease. Thus, MR enterography will be the method of choice for the noninvasive evaluation of small bowel disorders.

Keywords: MR Enterography, small bowel diseases

Abstract

Aim of the study: The purpose of this study was to evaluate benefits of MR enterography in diagnosing and characterizing small bowel disease. Study Design: Prospective observational study Materials and methods: This prospective observational study was done in Barnard Institute of Radiology, Rajiv Gandhi Government General Hospital, Chennai with a sample size of 50 patients after getting a written consent from all the patients. MR Enterography was done for all the patients, and diagnosed were followed with histopathology. Results: MR enterography had a sensitivity- 92.30% specificity-91.66% in detecting small as well as large bowel lesion and sensitivity- 77.77% specificity-97.56% in detecting chronic disease with more detailed information on the characterization of the lesion. Conclusion: MR enterography is an excellent modality that has adequate transmural visualization of the small bowel and provides sufficient information about etiology, distribution, exact location, activity, and complications of the disease. Thus, MR enterography will be the method of choice for the noninvasive evaluation of small bowel disorders.

Keywords: MR Enterography, small bowel diseases
opacify stomach and duodenum just before imaging, patients instructed to have another 200 ml of oral contrast. Patient is instructed to drink the solution gradually for even distension of the entire small bowel. One hour after the commencement of oral contrast ingestion patient is imaged on 1.5 Tesla MRI (Magnetom Avanto; Siemens, Erlangen, Germany) using phased array abdomen coil in supine position. Patient is instructed for breathing instructions. Before running the sequences 1 mg of i.v buscopan is given to minimize movement artifact from peristalsis. Images are obtained and evaluated. Results are followed up with clinical follow up and histopathological findings. The total examination time averagely of about 5.0 minutes (within the range of 3.5 to 10 min).

**OBSERVATIONS:**
Small bowel thickness of greater than 4 mm is considered as abnormal. Bowel wall thickening then further characterized if it is circumferential or asymmetrical involvement; regular or irregular, length of the involved segment with or without luminal narrowing, any skip lesions, associated perienteric inflammation or fat stranding, mesenteric phlegmon, interloop abscess, enlarged lymph nodes, in the involved segment, and the signal characteristics in T2 weighted sequence – hyperintense suggesting active inflammation, hypointensity in T2 suggesting fibrosis. Other features like fibrofatty proliferation, enlarged lymph nodes, mesenteric vessel engorgement and ascites also noted down. Contrast enhancement of the bowel wall noted and the pattern of bowel wall enhancement - homogenous, heterogenous or stratified pattern were noted. Complications like enteroenteric fistula, enterocolic fistula, colocolic fistula, perianal fistula and abscesses also noted. Bowel luminal narrowing was graded as Absent
Mild – one third decrease in luminal distension
Moderate – two third decrease in luminal distension
Severe - total obstruction of the small bowel.

**RESULTS:**

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**TABLE 1: SHOWING DISTRIBUTION OF NORMAL AND ABNORMAL SUBJECT**

<table>
<thead>
<tr>
<th>Normal</th>
<th>Abnormal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>26</td>
<td>50</td>
</tr>
<tr>
<td>48%</td>
<td>52%</td>
<td>100%</td>
</tr>
</tbody>
</table>

**TABLE 2: DISEASES AMONG ABNORMAL SUBJECT**

<table>
<thead>
<tr>
<th>TYPE</th>
<th>NUMBER</th>
<th>PERCENTAGE AMONG TOTAL SUBJECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuberculosis</td>
<td>9</td>
<td>18%</td>
</tr>
<tr>
<td>Crohns disease</td>
<td>8</td>
<td>16%</td>
</tr>
<tr>
<td>Large bowel disease</td>
<td>2</td>
<td>4%</td>
</tr>
<tr>
<td>Carcinoid</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Inconclusive</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Ulcerative colitis</td>
<td>2</td>
<td>4%</td>
</tr>
<tr>
<td>Fistula</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Small bowel neoplasam</td>
<td>2</td>
<td>4%</td>
</tr>
</tbody>
</table>

Small bowel obstruction is present in twelve out of 26
CASE 1: Axial unenhanced T1 weighted image shows long segment wall thickening of distal ileum. The involvement is transmural with surrounding fat stranding. Axial T2 weighted MR shows long segment moderate ileal wall thickening with luminal narrowing. Mucosa is edematous and T2 hyperintense. Axial T1 weighted post contrast MR shows significant contrast enhancement suggesting active chronic disease.

Sensitivity: 92.30%  Specificity: 91.66% of the 26 patients who had abnormal findings in MR enterography, on follow up withscopy and HPE findings, MR enterography findings and HPE findings correlated in 24 patients. In two patients MR enterography showed findings but with negative HPE results. In two patients in whom MR enterography is normal but scopy showed findings with positive HPE results. (Table:4)

TABLE 3: GRADING

<table>
<thead>
<tr>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>

SENSITIVITY: 77.77%  SPECIFICITY: 97.56% of the 50 patients were diagnosed as Crohn's disease. Among these 8 patients, seven patients showed correlation with HPE and one patient had negative HPE results. 2 patients out of remaining 42 subjects in whom MR enterography was normal but scopy and HPE findings are Crohn's disease. (Table:5)

CASE 2: Axial T1 weighted post contrast subtracted MR shows multifocal ileal thickening with intense contrast enhancement and mild luminal narrowing. Axial T1 weighted post contrast MR shows increased fat between the bowel loops – fibrofatty proliferation. Axial T1 weighted post contrast MR shows increased mesenteric vascularity perpendicular to the bowel wall resembling teeth of the comb – combs sign suggesting active Crohn's disease.

CASE 3: Coronal TruFisp image showing moderate wall thickening of ileum and ileocecal junction. Coronal contrast enhanced T1 weighted image showing mild enhancement of the bowel at ileocecal region suggestive of ileocaecal TB.
TABLE 5 SENSITIVITY AND SPECIFICITY OF MR ENTEROGRAPHY IN DIAGNOSING CROHNS DISEASE

<table>
<thead>
<tr>
<th>MRE</th>
<th>HPE</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRESENT</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>ABSENT</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

DISCUSSION:

Small bowel pathology was detected in 26 patients (52%) No significant abnormalities in 24 (48%) patients. Nine patients of small bowel wall thickening compatible with ileo-caecal tuberculosis. Out of these nine patients four patients had bowel wall thickening, lymph node enlargement and ascites. Three patients had bowel wall thickening and lymph node enlargement. Two patients had only bowel wall thickening. Seven out of nine patients had ceacal involvement. Pulled up ceacum is seen in four patients. Mesenteric inflammatory changes seen in four patients. Peritoneal thickening and nodules seen in one patient. Out of these nine patients only two patients had thoracic symptoms and findings. Small bowel wall abnormalities suggesting crohn’s disease is seen in eight patients.

All patients are newly diagnosed. Length of the involved segment varies between 2 to 15 cm. More than one segment of bowel (skip lesions) were seen in two patients. Low to intermediate grade of small bowel obstruction is seen in three of the crohn’s patients. Entero-cutaneous fistula is seen in one patient. Perianal fistulas detected in 2 patients.

Two patients with lower GI bleeding had normal small bowel findings and found to have pathology in the large bowel. Two patients had features consistent with ulcerative colitis. Small bowel neoplasm is found out in this study in two patients both of them have vague long term abdominal pain. One in the duodenum and another in the jejunum loop. Both the patients underwent surgery. Duodenal lesion HPE came to be adenoma and jejunal lesion HPE was lymphoma. One patient had an infiltrating carcinoid of terminal ileum. One patient had inconclusive findings on MR enterography and patient was on follow-up. Small bowel obstruction is present in twelve out of 26 patients.

Mild in seven patients (n=7), moderate in four patients (n=4), and severe in one patient. (n=1). One patient in whom the enterography was found to be normal.
MR enterography is of major benefit in diagnosing problems in patients with suspected small bowel disease. MR enterography is the modality of choice as it has no radiation. MR enterography can be used as a screening tool for diagnosing small bowel disease as most of the patients are refusing invasive procedures as a screening modality.

In cases where colonoscopy did not reach the terminal ileum, MR enterography may help to determine the optimal therapeutic strategy. Disease activity can be predicted by MR enterography by looking at bowel edema and contrast enhancement of bowel wall and lymph nodes.

In this study various small bowel diseases were detected and some of the large bowel diseases that present with small bowel symptoms were also found out. The range of indications for MR enterography has become wide and includes small bowel obstruction, motility disorders, persistent diarrhea and abdominal pain, and has become a problem-solving tool when other imaging modalities cannot diagnose small bowel abnormality. Thus, MR enterography is an excellent modality that has adequate transmural visualization of the small bowel and provides sufficient information about etiology, distribution, exact location, activity, and complications of the disease. Thus, MR enterography will be the method of choice for the noninvasive evaluation of small bowel disorders.

REFERENCES:

ACKNOWLEDGEMENT:
Patients and guides
INTRODUCTION:

With the advent of better imaging modalities, radiation technology and its successful implementation in external beam radiation therapy (3D CRT, IMRT, IGRT etc.), is a success story today. There are many ways to reduce the bladder and rectal complications. High precision radiotherapy techniques like 3DCRT, IMRT are evolving to deliver high radiation dose to the tumor and sparing the critical normal structures. In India, locally advanced cervical cancer being a major problem, appropriate, adequate and quality treatment to all patients is the key to success. In India, there has been a rapid rise in corporate Sectors and steady improvement in radiation facilities in government sectors. Most of the study should be done by all high volume centres to incorporate some form of image based approach both for teletherapy and brachytherapy for cervical cancers for RT planning. There is an urgent need to generate robust data on CT or MR 3D Image Based Brachytherapy Planning and suitable evidence through clinical studies to resolve the issues further in optimizing treatment for cervical cancers.

AIM AND OBJECTIVES:

To compare bladder and rectal radiation dose between orthogonal radiograph based dosimetry and CT based dosimetry.

SUBJECTS AND METHODS:

STUDY PERIOD : From June 2010 to August 2010

STUDY DESIGN : Comparative descriptive study

CASE SELECTION : Biopsy proven squamous cell Carcinoma cervix cases of stage IIB – IIIB who had completed EBRT and slated for HDR brachytherapy.

NUMBER OF PATIENTS: 30
INCLUSION CRITERIA:
1) All eligible biopsy proven squamous cell carcinoma cervix patients, who had completed EBRT and slated for HDR Brachytherapy.
2) Stage II B – III B
3) Age: 30 - 60 years.
4) Performance Status: ECOG 0-1 histological proof from primary lesion.
5) Informed consent to be taken.
6) Patient should be fit for anesthesia.

EXCLUSION CRITERIA:
1) Age > 60 years.
2) ECOG more than 2.
3) Patients not fit for anesthesia.
4) Patients with stage IV disease.
5) Histology other than squamous cell carcinoma.
6) History of prior radiotherapy / chemotherapy to Ca cervix.

PRE-TREATMENT EVALUATION:
1) History.
2) Physical examination with emphasis on gynaecological examination.
3) Biopsy.
4) LAB studies (CBE, LFT, RFT, VDRL, and HIV).
5) ECG.
6) Radiographic studies,
7) Chest X-ray.
8) CT Pelvis.
9) Cystoscopy.

Per speculum examination and by passing uterine sound to assess whether the patient is fit for intra cavity application.

TREATMENT PROTOCOL:
Conventional EBRT - 50 Gy in 200c Gy per fraction 5 days a week 25 fraction in EBRT equipment along with weekly chemotherapy.

SIMULATION AND TREATMENT DELIVERY:
ICA PROTOCOL:
After teletherapy the patients were assessed for intracavitary application. Those found fit were subjected to high dose rate (HDR) Brachytherapy.

HDR BRACHYTHERAPY PROTOCOL:
Technique Remote after loading with Iridium-192 source Machine HDR- micro Selectron Activity 2- 10 Ci Intracavitary applicator Modified Fletcher Suit applicator No. of #s TWO (1# -1 week after EBRT, 2# -1 week after1#) Dose delivered to Point A 800cGy /# -2#

Total Dose to point A 86.7Gy (LDR equivalent).LQED 81 Gy

PROCEDURE:
Under I.V. Sedation patient in routine way Intracavity Application done. Orthogonal X-rays AP and lateral were taken. Subsequently the films were digitized and dose calculations were obtained using Nucletron Plato brachytherapy Treatment Planning System. The dose was prescribed to Point -A.

DOSE SPECIFICATIONS:
Point A and Point B were defined according to Manchester system of dose definition. The bladder and rectal reference points defined by ICRU 38 were used to calculate the bladder and rectal point dose.Four additional rectal points were taken 1 cm above and below the usual rectal reference points to get better idea of dose received by rectum.

CONVENTIONAL DOSIMETRY:
Orthogonal radiographs (anterior-posterior and lateral) were taken on a conventional simulator with radio opaque markers in the applicators. The cervical stopper is identified in Orthogonal film and used as origin radiographs were
reconstructed and the treatment planning was done using PLATO planning system. Source positions were loaded according to the standard loading pattern in accordance with the Manchester system. Point A was defined on the radiographs as being 2 cm superior to the cervical stopper (flange) and 2 cm lateral from the axis of the intrauterine tandem. Bladder and rectal reference points were identified according to ICRU 38 recommendations. In addition to the ICRU rectal reference point, four additional rectal points were defined at 1 cm interval superior and inferior to the ICRU rectal reference point.

The dose was prescribed to point A, treatment was carried out using Iridium HDR remote after-loading machine based on the conventional radiograph-based dosimetry.

CT-BASED ICA-HDR DOSIMETRY:
All the above intracavitary applications were simultaneously taken up for CT planning. CT scans of 3-mm slice-thickness were obtained, 4 cm above the tandem superiorly and to the level of anus inferiorly. Rectum and bladder were delineated. Rectum was contoured from recto-sigmoid junction superiorly till ischial tuberosity inferiorly. The entire bladder was contoured. The cervical stopper is identified in 3D using the INSIGHT Software. In the INSIGHT software the CT cuts were reconstructed to form a 3D image. The cervical stopper was used as origin. Treatment planning was carried out using PLATO planning system. Point A, ICRU rectal and bladder reference points were identified on CT planning. For each application, the corresponding optimized source positions used in radiograph-based planning were duplicated for CT image-based planning. Reconstruction of metal applicators using CT images was difficult due to the presence of artifacts. All bladder and rectal point doses were individually and cumulatively assessed. A statistical analysis was done. The results were obtained.

EVALUATION:
Conventional vs. CT-based dosimetry correlation Cumulative dose volume histogram (cDVH) was calculated for every plan with 1,00,000 calculation points randomly placed in volume of interest.

To compare the respective ICRU rectal and bladder point doses with the 3D volume dose, the minimum dose value in the 2.0cc volume receiving the highest dose (D2) was determined from DVHs for bladder rectum. D2 is the dose received by 2cm3 volume of bladder/rectum. This is calculated from the cumulative DoseVolume Histogram (cDVH) from 3D planning.

The comparison and correlation of doses to bladder and rectum was carried out using D2 and the ratio of D2 to ICRU reference point doses.

RESULTS:
From June 2010 to August 2010 Total of 30 cases of locally advanced cancer cervix patients were included in the study. Characteristics

<table>
<thead>
<tr>
<th>AGE (YEAR)</th>
<th>NUMBER OF CASES</th>
</tr>
</thead>
<tbody>
<tr>
<td>31-40</td>
<td>3 (10%)</td>
</tr>
<tr>
<td>41-50</td>
<td>15 (50%)</td>
</tr>
<tr>
<td>51-60</td>
<td>12 (40%)</td>
</tr>
</tbody>
</table>

In this study we enrolled patients between 30-60 years of age. Majority of patients were distributed in the age group of 4th and 5th decades.

<table>
<thead>
<tr>
<th>STAGE GROUPING</th>
<th>NUMBER OF CASES</th>
</tr>
</thead>
<tbody>
<tr>
<td>II B</td>
<td>23</td>
</tr>
<tr>
<td>III A</td>
<td>0</td>
</tr>
<tr>
<td>III B</td>
<td>7</td>
</tr>
</tbody>
</table>

Majority of the patients in the study belong to FIGO stage II B. Statistical analysis was performed by paired t-test comparing the doses of bladder and rectum in orthogonal x-rays and CT.

PARAMETRIC TEST:
To compare the means of two sets of scores, the t-test should be used. Since we were comparing the scores of the same respondents on two variables, the within-subjects (paired samples) t-test was used. The paired t-test involves taking the
difference between the two scores for each respondents and finding the mean of these difference scores. The value of the t-statistics was shown, with its degrees of freedom (df) and its probability level (sig 2 tail). If the probability was less than 0.001, we concluded that there was a statistically significant difference between the means of the two sets of scores.

**EVALUATION:**

Conventional vs. CT-based dosimetry correlation

Cumulative dose volume histogram (cDVH) was calculated for every plan with 1,00,000 calculation points randomly placed in volume of interest. D2 is the dose received by 2 cm³ volume of bladder/rectum. D2 is calculated from cDVH. The comparison and correlation of doses to bladder and rectum was carried out using D2 and the ratio of D2 to ICRU reference point doses. In this study following were analysed. Dose received by ICRU reference point from orthogonal radiograph based plan and D2 from cDVH of CT image based plan for bladder and rectum.

**Table 3: Dose of radiation given**

<table>
<thead>
<tr>
<th>Organ</th>
<th>D2 Gy</th>
<th>Dose to ICRU point Gy</th>
<th>D2 /Dose to ICRU ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bladder</td>
<td>5.41</td>
<td>3.22</td>
<td>1.69 +/- (0.20)</td>
</tr>
<tr>
<td>Rectum</td>
<td>4.98</td>
<td>3.71</td>
<td>1.36 +/- (0.25)</td>
</tr>
</tbody>
</table>

D2 is the dose received by the 2cm³ of the volume of critical structure, bladder and rectum. Values given in parenthesis are for standard deviation. Mean D2 of bladder and rectum was found to be 1.69 and 1.36 times the mean ICRU reference points respectively. This mean difference was statistically significant (p<0.001).

**Results:**

\[ \frac{D2}{(ICRU\ \text{reference\ point})} \] Bladder - D2 /dose to ICRU reference points Ratio - 1.69 (p<0.001) Rectum - D2 /dose to ICRU reference points Ratio - 1.36 (p<0.001)

**INFERENCES:**

2D underestimates the bladder dose
2D underestimates the rectal dose.

**DISCUSSION:**

Dosimetry of ICA for carcinoma cervix was based on orthogonal radiographs with ICRU 38 recommendations, which allow the evaluation of point doses such as manchester points A, B, ICRU rectal and bladder reference points. Orthogonal radiographs provide spatial information of the applicator with respect to bony structures. However, this time tested system has a limitation of computing the doses received by the volumes of the critical structures as this has only 2D value. Over the past two decades, there have been significant advances in imaging USG, CT, MRI. With an advantage of determine the dose volume parameters for the critical structures, We undertook this dosimetric study to compare, validate and document the correlation between point based doses to rectum and bladder with the conventional standard ICRU 38 rectal and bladder points. In the present study we demonstrated that more precise analysis on the dose received by certain volume of (2cm³) of organ at risk, bladder and rectum can be accomplished by utilizing cumulative Dose Volume Histogram (CDHs) on CT plan, which may be of critical importance in regard to normal tissue tolerance limits. The dose to ICRU bladder reference point does not correlate with the maximum dose from the CT planning. Mean D2 was found to be 1.69 +/- 0.20 times the mean ICRU bladder reference points. These results agree with the other studies published in the literature, where the ICRU bladder reference point underestimated the maximum dose by two to three times. The dose to ICRU rectal point from the radiograph based planning does not correlate with maximum dose from CT Planning. Mean D2 of rectum was found to be 1.36 +/- 0.25 times the mean ICRU rectal reference point, suggesting that there was significant difference between the radiograph based ICRU rectal point and CT based estimation of the parameter D2. With the advent of better imaging modalities, radiation technology and its successful implementation in external beam radiation therapy Implementation of Various imaging modalities like ultrasound, CT have been explored in brachytherapy today. Imaging modalities have been invaluable in improving the quality of brachytherapy.
offered to cancer patients. Their introduction has led to improvements in treatment planning, implementation and assessment, resulting in efficacy and tolerability benefits for patients. CT based Brachytherapy planning is more or less standard of care. The advantages of CT based planning are accurate catheter reconstruction, better delineation of organ-at-risk (OAR) and documentation of dose volume parameters (DVH Parameters). However, the major disadvantage of inaccurate target volume delineation has paved way for MR based Brachytherapy.

**LIMITATIONS OF THE PROCEDURE:**
The successful implementation of image based dosimetry for intracavitary brachytherapy for carcinoma of cervix depends on the accurate delineation of the critical structures and the target volume. The use of metal applicators in the present study produced artifacts that made delineation of the critical structures difficult to some extent.

**RECOMMENDATIONS:**
1) Use of CT compatible applicators for better delineation of organ at risk like bladder and rectum. As a result we can escalate the dose to the target.
2) In vivo dosimetry can be done to accurate measurement of bladder and rectal doses.
3) Weekly fraction of HDR can be considered as soon as patient is fit for ICBT for better local disease control
4) It is financially warranted to follow CT based planning to prevent bladder and rectal complications.

**CONCLUSION:**
Radiotherapy is an effective treatment modality for carcinoma cervix. HDR brachytherapy is incorporated along with EBRT in the treatment protocols. Our study suggested that maximum bladder and rectal 3D values were 1.69 and 1.36 times greater than the ICRU reference bladder and rectal doses respectively.

- Bladder - D2/dose to ICRU reference point Ratio - 1.69 (p<0.001 Statistically significant)
- Rectum - D2/dose to ICRU reference point Ratio - 1.36 (p<0.001 Statistically significant)

2D underestimates bladder dose
2D underestimates the rectal dose

3D - Image based brachytherapy is the standard of care for locally advanced CA cervix patients in western countries. Further, incorporation of newer imaging modalities like CT Image based planning, conformal brachytherapy may revolutionize brachytherapy practices in carcinoma cervix in Government setup.

**Acknowledgement:**
Radiation Oncology and Radiation physics Departments, Government Arignar Anna cancer hospital, Regional Cancer Centre, Kancheepuram.

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13. Comparison between CT and Orthogonal Based Calculation of ICRU Rectal and Bladder Doses During Intracavity Brachytherapy for Cervix Cancer- Are Orthogonal Films now Obsolete? Alison Cameron1, Helen Coomber2, Chris French2, Paul Cornes1 -1Oncology Department, Bristol Haematology Oncology Centre (BHOC), UK; 2Radiotherapy Physics Unit, BHOC, UK, 2006.

14. Dosimetric evaluation of rectum and bladder using image-based CT planning and orthogonal radiographs with ICRU 38 recommendations in intracavitary brachytherapy Swamidas V. Jamema, Sherly Saju, Umesh Mahantshetty,1 S. Pallad,1 D. D. Deshpande, S. K. Shrivastava,1 and K. A. Dinshaw1. Department of Medical Physics, Tata Memorial Hospital, Mumbai, India. Department of Radiation Oncology, Tata Memorial Hospital, Mumbai, India 2007.
RISK FACTORS AND PREVALENCE OF H. PYLORI INFECTION IN DYSPNEPTIC PATIENTS - A STUDY IN A TERTIARY CARE INSTITUTE IN SOUTH INDIA

C. Balamurugan (1), D. Princess Beulah(2), M. Vignesh(3), B. Sivasankaran(4), H. Anu(5)

Abstract

Aims: The aim of this study is to analyse the risk factors associated with H. pylori infection and to determine the prevalence of H. pylori infection in patients with dyspepsia and to make use of the results of this study to start anti H. pylori regime in patients with certain analysed risk factors. Methods and Material: 100 Patients, visiting the out patient Department and those admitted as in patients with complaints consistent with dyspepsia were selected at random. Informed Consent was obtained. Upper gastro intestinal endoscopy is done and patients with positive findings were biopsied according to Sydney protocol. Then the samples are sent in formalin and specimens are stained with Warthin starry silver stain and H. pylori were studied. Type of study: A prospective descriptive study. Results: Out of 100 patients subjected to the study, 54 were H. pylori positive and 46 were H. pylori negative. Increased incidence of infection is seen in males when compared to females. Most common symptom is abdominal pain. Likewise increasing age, smoking, alcohol, unhygienic drinking water, poor sanitation, obesity were found to have positive relationship with H. pylori. Patients with endoscopically proven ulcer show high positivity when compared to other findings. Conclusion: H. Pylori testing is done by Microscopy ,the “gold standard” method for detection and stained by Warthin starry silver stain which is highly sensitive and specific. The risk factors and prevalence of H. pylori infection is studied and these results are used to start appropriate Anti - H. pylori regime, which aims at eradication of H. pylori infection. Key-words: H. pylori, upper GI endoscopy, dyspepsia.

INTRODUCTION:

Helicobacter pylori or Campylobacter pylori as earlier known, is possibly the most common human infection. It has been strongly linked to numerous gastro intestinal disorders ranging from non-ulcer dyspepsia to gastric malignancies. There is a wide geographical and ethnic distribution in the infection rate. Certain ethnic groups such as Africans and Hispanics have a much higher rate of infection. In general, people belonging to developing nations have a higher infection rate as compared to their counterparts in developed nations. The epidemiology of Helicobacter pylori infection in India is different from those in developed countries. The main difference lies in the early age of colonization, overt manifestation and high chances of re-infection with the bacteria. It was believed for a long time in the field of medicine that gastroduodenal ulceration was due to high levels of stress but it is now proven that it is this bacterium that lies at the core of causation of acid peptic disorder, gastric malignancies and gastrointestinal lymphoma.

SUBJECTS AND METHODS:

A prospective descriptive study of 100 Patients visiting the outpatient Department and those admitted as inpatients in Government Stanley Hospital, Chennai with complaints of epigastric and abdominal pain and other symptoms consistent with Acid Peptic Disease or its resultant acute or chronic sequelae were selected at random. Institutional Ethical Clearance was obtained and Informed Consent was obtained from the study subjects prior to submitting them to any interrogation or investigation. Patients are subjected to clinical examination and invasive and non-invasive investigations. Invasive investigation like upper gastro intestinal endoscopy is done. Patients with positive findings were biopsied according to Sydney protocol. Then the samples are sent in formalin and specimens are stained with Warthin starry silver stain and H. pylori were studied. Then risk factors and prevalence among positive patients were studied. Patients are included in this study coming with complaints with abdominal pain, heart burn, bloating of abdomen, epigastric pain for more than 3 months. Patients excluded from this study are hemodynamically unstable patients, already proven H. pylori infection and on treatment and reluctant patients.

RESULTS AND DISCUSSION:

This study consists of 100 patients, with 50 males and 50 females to whom upper gastro intestinal endoscopy is done and patients with positive findings are subjected to biopsy by Sydney protocol, and biopsy is subjected to pathological examination for H. pylori confirmation.

H. PYLORI POSITIVITY:

Out of 100 patients subjected to the study, 54 were H. pylori positive and 46 were H. pylori negative.

GENDER:

According to this study, 34 out of 50 males and 20 out of 50 females were positive for H. pylori which implies 68 % positivity in males and 40% positivity.

1) , 2), 3), 4), 5) - Department of general surgery, Govt. Stanley medical college, Chennai -01, Affiliated to the Tamilnadu Dr. M. G. R. Medical University.
in females. This shows there is increased incidence of infection in males when compared to females. (Table 1)

### TABLE 1 – GENDER PREPONDERENCE

<table>
<thead>
<tr>
<th></th>
<th>H. Pylori</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Negative</td>
<td>Positive</td>
</tr>
<tr>
<td>Female</td>
<td>26</td>
<td>24</td>
</tr>
<tr>
<td>Male</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>54</td>
</tr>
</tbody>
</table>

### TABLE 2 - SYMPTOMATOLOGY

<table>
<thead>
<tr>
<th></th>
<th>H. Pylori</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Negative</td>
<td>Positive</td>
</tr>
<tr>
<td>Abd Pain</td>
<td>18</td>
<td>28</td>
</tr>
<tr>
<td>Bloating</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Epigastric pain</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Heartburn</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Nausea</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>54</td>
</tr>
</tbody>
</table>

### TABLE 3 – AGE & DURATION

<table>
<thead>
<tr>
<th></th>
<th>H. Pylori</th>
<th>N</th>
<th>Mean</th>
<th>S.D</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Positive</td>
<td>54</td>
<td>45</td>
<td>13.445</td>
<td>1.830</td>
</tr>
<tr>
<td></td>
<td>Negative</td>
<td>46</td>
<td>39</td>
<td>13.494</td>
<td>1.990</td>
</tr>
<tr>
<td>Duration</td>
<td>Positive</td>
<td>54</td>
<td>7</td>
<td>3.073</td>
<td>0.418</td>
</tr>
<tr>
<td></td>
<td>Negative</td>
<td>46</td>
<td>5</td>
<td>2.092</td>
<td>0.308</td>
</tr>
</tbody>
</table>

### DURATION OF SYMPTOMS:

This study consists of patients with complaints included in the inclusion criteria from less than 3 months to more than 1 year. The analysis reveals that as the duration of complaints increases the higher chances of harbouring H. pylori disease. (Table 3)

### TABLE 4 – OGD FINDINGS

<table>
<thead>
<tr>
<th>OGD FINDINGS</th>
<th>H. Pylori</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Negative</td>
<td>Positive</td>
</tr>
<tr>
<td>Antral gastritis</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Antral ulcer</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>Carcinoma</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Carcinoma</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Duodenitis</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Erosive gastritis</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Fundal gastritis</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Post perforation</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Ulcer in body</td>
<td>5</td>
<td>13</td>
</tr>
<tr>
<td>TOTAL</td>
<td>46</td>
<td>54</td>
</tr>
</tbody>
</table>
ADDICTIONS:

In this study, of the 100 patients, 20 patients were smokers of which 12 were positive for H.pylori, accounting for 60%, and 18 patients were alcoholic of which 13 were positive for H.pylori showing 72% positivity. This shows that smoking and alcohol increases the incidence of H.pylori infection. (Table:5)  

### TABLE 5 – ADDICTIONS

<table>
<thead>
<tr>
<th>ADDICTIONS</th>
<th>H.Pylori</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Negative</td>
<td>Positive</td>
</tr>
<tr>
<td>Alcoholic</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>No</td>
<td>44</td>
<td>34</td>
</tr>
<tr>
<td>Smok/Alc</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Smoker</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>54</td>
</tr>
</tbody>
</table>

ENDOSCOPY FINDINGS:

In this study of the 100 patients, 38 patients had ulcer (ulcer in the body, antrum, duodenal ulcer) and 28 of them were positive for H.pylori accounting for 78%. 10 patients had carcinoma stomach of which 5 were positive for H.pylori (50% among carcinoma patients). 10 Post peptic ulcer perforation patients came for follow up were studied and 3 among them were positive for H.pylori (30% positivity rate). To sum up, patients with endoscopically proven ulcer shows high positivity when compared to other findings. (Table:4)  

### TABLE 6 – SOCIO ECONOMIC STATUS IN RELATION TO H.PYLORI PREVELANCE

<table>
<thead>
<tr>
<th>SES</th>
<th>H.Pylori</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Negative</td>
<td>Positive</td>
</tr>
<tr>
<td>UPPER CLASS</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>UPPER-MIDDLE</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>LOWER-MIDDLE</td>
<td>24</td>
<td>18</td>
</tr>
<tr>
<td>LOWER</td>
<td>9</td>
<td>26</td>
</tr>
<tr>
<td>TOTAL</td>
<td>46</td>
<td>54</td>
</tr>
</tbody>
</table>

SOCIO ECONOMIC STATUS:

In this study, 5 patients from upper socio economic class were studied and 2 were positive for H.pylori (3.7%), and 8 out of 18 patients belonging to upper middle class were found positive accounting for 4.8% positivity and 18 out of 42 patients from lower middle class were studied and it showed 33% positivity. 35 patients from lower socio economic class were studied and 26 were positive among them which shows 48% positivity rate. This shows H.pylori positivity is high among lower socioeconomic status patients. (Table:6)  

DRINKING WATER:

Of the 54 positive patients 48 used unhygienic source of water which accounts for 88% and 6 out of 54 used hygienic source of water which comprises of 11%. This shows unhygienic drinking water is a definite risk factor for H.pylori infection. (Table:7)  

### TABLE 7 – WATER RESOURCE

<table>
<thead>
<tr>
<th>W A T E R SOURCE</th>
<th>H.Pylori</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Negative</td>
<td>Positive</td>
</tr>
<tr>
<td>HYGENIC</td>
<td>20</td>
<td>6</td>
</tr>
<tr>
<td>UNHYGENIC</td>
<td>26</td>
<td>48</td>
</tr>
<tr>
<td>TOTAL</td>
<td>46</td>
<td>54</td>
</tr>
</tbody>
</table>

SANITATION:

This study comprises of 35 patients out of 54 positive using proper sanitation accounting for 64%. 16 out of 54 patients using public sanitation comprising of 29% and all 3 out 3 patients practicing open defecation were found H.pylori positivity. This shows poor sanitation is a high risk factor for H.pylori infection. (Table:8)  

### TABLE 8 – SANITATION IN RELATION TO H.PYLORI PREVELANCE

<table>
<thead>
<tr>
<th>SANITATION</th>
<th>H.Pylori</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Negative</td>
<td>Positive</td>
</tr>
<tr>
<td>PROPER</td>
<td>41</td>
<td>35</td>
</tr>
<tr>
<td>PUBLIC</td>
<td>5</td>
<td>16</td>
</tr>
<tr>
<td>OPEN DEFECATION</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>TOTAL</td>
<td>46</td>
<td>54</td>
</tr>
</tbody>
</table>
BODY MASS INDEX:

This study also consists of correlation between BMI and H.pylori infection. 18 out of 41 patients with BMI between18-25 were positive and this shows42 % positivity. 20 Patients with BMI between30-35 were studied and 16 were positive among them showing 80 % positivity. 6 out of 7 patients with BMI above 35 were positive and this shows 88% positivity. This clearly states that obesity is a risk factor for H.pylori infection among dyspeptic patients. (Table:9)

<table>
<thead>
<tr>
<th>BMI Category (Kg/m²)</th>
<th>H.Pylori Positive</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 - 25</td>
<td>18</td>
<td>40(40%)</td>
</tr>
<tr>
<td>26 - 30</td>
<td>14</td>
<td>33(33%)</td>
</tr>
<tr>
<td>31 - 35</td>
<td>16</td>
<td>20(20%)</td>
</tr>
<tr>
<td>&gt;35</td>
<td>6</td>
<td>7(7%)</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>54</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

RESPONSE TO EMPIRICIAL THERAPY:

The conventional therapy given for H.pylori infected patients is Cap. Amoxycillin 1g bd , Tab. Metronidazole 500 mg bd, Cap. Omeprazole 20 mg bd . The response rate for this conventional therapy is better (71%) if taken for 14 days.

CONCLUSION:

From this study, the conclusions that can be drawn are as follows : Microscopy is the 'gold standard' in diagnosing H.pylori infection. Warthin starry silver stain has higher sensitivity and specificity than other stains. The prevalence of H.Pylori infection in this institute according to this study is 54%. The risk factors for this infection is studied viz. Males have slight preponderence to infection than females (56% vs 44%) It reveals that helicobacter pylori infection increase progressively with age. It reveals that there is a positive relationship between helicobacter pylori and duration of disease. Patients with endoscopically proven peptic ulcers have almost 80% positivity in H.pylori testing. Most common symptom is abdominal pain (46%). Smoking and alcohol increase the risk of infection. Sanitation, proper hygiene, drinking water source, all seem to play an important role in the incidence. Further exploration of the culture of the bacterium and the sensitivity pattern is needed which might pave way for newer studies & trials, owing to increase in resistant organisms.

Acknowledgement:

The authors would like to express their gratitude towards department of general surgery, Govt. Stanley Medical College Hospital for providing constant support.  

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Acknowledgement:
The authors would like to express their gratitude towards department of general surgery, Govt. Stanley Medical College Hospital for providing constant support.
A MORPHOLOGICAL STUDY OF THE INFERIOR EPIGASTRIC ARTERY AND THE ABNORMAL OBTURATOR ARTERY

V.Anandhi(1), J.Thilagavathi(2)

Abstract

Background: Since the dawn of Plastic surgery, the lower abdominal region has always been a loyal provider of abundant well-perfused tissue. The free TRAM flap demonstrates good vascularity due to the vigorous blood supply brought in by the deep inferior epigastric system. Hence the study of the vascular anatomy of the inferior epigastric artery with particular reference to its entry into the rectus muscle, the presence of a double stem of the artery and the abnormal obturator artery gains much importance. When the obturator artery arises from the inferior epigastric artery, it is known as the abnormal obturator artery. It usually lies on the lateral side of the femoral ring. In such cases it would not be endangered in the operation for strangulated femoral hernia. Occasionally however, it curves along the free margin of the lacunar ligament, and if in such circumstances a femoral hernia occurred, the vessel would almost completely encircle the neck of the hernial sac, and would be in great danger of being wounded if an operation was performed for strangulation. Because of this danger, this anatomic variant is sometimes referred to as the "crown of death" (corona mortis).

Materials and Methods: The study was conducted in 25 formalin embalmed cadavers (50 sides) in the Department of Anatomy, K.A.P.V. Govt. Medical College, Tiruchirappalli over a period of 5 years. The vessel was also painted in some specimens. The inferior epigastric artery was seen to enter the rectus muscle substance in the upper third in 4 (8%) cases, the middle third of rectus abdomenis in 36 (72%) cases, and in the lower third in 10 (20%) cases. It was found to have a double stem before entering the rectus muscle substance in 7 specimens (14%). In two cadavers the double stem was bilateral and in three cadavers it was unilateral. The artery had a single stem before entering the rectus muscle substance in 43 specimens (86%). The percentage of abnormal obturator artery found in this study was 16%. Of these, in one male cadaver the abnormal obturator artery was found on both sides. Among the 8 specimens, the abnormal obturator artery was descending along the medial border of the femoral ring in only one specimen (12.5%). In the remaining 7 cases it was related to lateral border of the femoral ring (87.5%). Key words: Abnormal obturator artery, inferior epigastric artery, femoral ring, level of entry, double stem

INTRODUCTION:

The inferior epigastric artery arises from the external iliac artery just posterior to the inguinal ligament. It then ascends obliquely along the medial margin of the deep inguinal ring. Then it pierces the transversalis fascia and ascends in front of the arcuate line and continues upward between the rectus abdominis muscle and the posterior lamina of its sheath. It divides into numerous branches which anastomose with those of the superior epigastric artery. The branches of the inferior epigastric artery are cremasteric, pubic, muscular, cutaneous, peritoneal and anastomotic. Occasionally, the pubic branch of the inferior epigastric is larger than the main obturator artery and supplies the majority of the flow into the vessel as it enters the thigh. It is then referred to as the aberrant obturator artery [1]. It may descend on the medial side of the femoral vein, and therefore lateral to the side of the femoral ring, or it may course medially in front of the femoral ring and turn downward either behind the os pubis or immediately behind the free edge of the lacunar ligament, in which situation it would be exposed to injury in the operation for the relief of a strangulated femoral hernia [2]. A sound knowledge of the occurrence and relationship of the abnormal obturator artery to the femoral ring is of utmost importance in retropubic surgeries.

MATERIALS AND METHODS:

Conventional dissection was done in 25 cadavers (50 sides) in the Department of Anatomy, K.A.P.V. Government Medical College, Tiruchirappalli, Tamil Nadu, India. The inferior epigastric artery was carefully dissected and its level of entry into the rectus muscle and presence of double stem were observed, its pubic branch was meticulously dissected for enlargement and entry into the obturator foramen, and the course behind the pubis relating to the femoral ring was scrupulously noted. After dissection, some specimens were painted and photographed.

OBSERVATION:

I Level of entry into the rectus muscle - upper, middle, or lower third.

In the fifty adult specimens dissected, the inferior epigastric artery was seen to enter the rectus muscle substance in the upper third in 4 (8%) cases. The inferior epigastric artery entered in the middle third of rectus abdominis in 36 (72%) cases(Fig-1), and in the lower third in 10 (20%) cases.

II Single or double stem of the inferior epigastric artery before entering the rectus muscle substance.

The inferior epigastric artery was found to have a double stem before entering the rectus muscle substance in 7 specimens.
In two cadavers the double stem was bilateral observed both in right and left side(Fig.-2), and in three cadavers it was unilateral. The artery had a single stem before entering the rectus muscle substance in 43 specimens (86%).

III Abnormal obturator artery from inferior epigastric artery

In 8 cases the pubic branch of the inferior epigastric artery was enlarged and replaced the obturator artery to enter the obturator canal and supplied the medial part of the thigh (Fig. 3). This abnormal obturator artery was found in this study in (16%). Of these in one male cadaver the abnormal obturator artery was found on both sides.

Among the 8 specimens, the abnormal obturator artery was descending along the medial border of the femoral ring in only one specimen(12.5%) (Fig. 4). In the remaining 7 cases it was related to lateral border of the femoral ring (87.5%) (Fig. 5).

DISCUSSION:

I Level of entry into the rectus muscle

Hollinshead said that the superior and the inferior epigastric arteries usually lie at first on the posterior surface of the rectus abdominis muscle; the superior tends to disappear quickly into the muscle, while the inferior tends to enter its middle third [3].

Frank et al in a study of 115 cadavers found that the inferior epigastric artery enters the rectus muscle substance in the lower third 28 times (17 percent), in the middle third 126 times (78 percent) and in the upper third 8 times (5 percent) [4].
In the fifty adult specimens dissected, the inferior epigastric artery was seen to enter the rectus muscle substance in the upper third in 4 (8%) cases. The inferior epigastric artery entered in the middle third of rectus abdominis in 36 (72%) cases, and in the lower third in 10 (20%) cases similar to Frank et al study.

II Single or Double main stem of inferior epigastric artery

Frank et al on dissection of 115 cadavers found that as the inferior epigastric artery passed superiorly on the dorsal aspect of the rectus, it was found to consist of a single main stem in 139(86 percent) instances, and of a double main stem in 23(14 percent) instances before entering the muscle substance. The inferior epigastric artery was found to have a double stem before entering the rectus muscle substance in 7 specimens (14%) The artery had a single stem before entering the rectus muscle substance in 43 specimens (86%) coinciding with Frank et al study[4].

III Abnormal obturator artery from inferior epigastric artery

Lockhart et al, Harold and Russel have described that the pubic branch of inferior epigastric artery may replace the obturator artery, as the abnormal obturator artery [5,6,7].

In the present study of 50 adult cadaveric halves, the pubic branch of inferior epigastric artery was enlarged in 8 specimens (16%) replacing the obturator artery and passed through the obturator canal as the abnormal obturator artery. The percentage frequency of the abnormal obturator artery given by other researchers is tabulated. (Table-1)

Table-1 Percentage frequency of the abnormal obturator artery

<table>
<thead>
<tr>
<th>Year</th>
<th>Author</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1889</td>
<td>Pfitzner[14]</td>
<td>30.4</td>
</tr>
<tr>
<td>1893</td>
<td>Morris[2]</td>
<td>37</td>
</tr>
<tr>
<td>1897</td>
<td>Parson &amp; Keith[15]</td>
<td>8</td>
</tr>
<tr>
<td>1937</td>
<td>J.C.B.Grant[16]</td>
<td>33</td>
</tr>
<tr>
<td>1942</td>
<td>Arthur H Curtis et al[17]</td>
<td>25</td>
</tr>
<tr>
<td>1954</td>
<td>R.J.Last[18]</td>
<td>50</td>
</tr>
<tr>
<td>1957</td>
<td>Robert F Muller et al[19]</td>
<td>37</td>
</tr>
<tr>
<td>2005</td>
<td>Suppa ut Pungapong et al[20]</td>
<td>13.6</td>
</tr>
<tr>
<td>2015</td>
<td>Akshara et al[21]</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Present Study</td>
<td>16</td>
</tr>
</tbody>
</table>

Relationship of abnormal obturator artery with the femoral ring

Gardner et al and Skandalakis noted that the abnormal obturator artery coursed along the medial border of the femoral ring [8,9].

According to Cunningham, the abnormal obturator artery related to the medial border of the femoral ring is 30%; according to Dwight et al 17.5%, and according to McGregor 10% [10,11,12].

In the present study of 50 adult cadaveric halves, in 12.5% cases, the abnormal obturator artery was related to the medial border of the femoral ring close McGregor’s findings. D.J.Cunningham [10] stated that the abnormal obturator artery descends on the lateral side of the femoral ring in 70% cases and Thomas Dwight et al [11] has described the abnormal obturator artery along the lateral border of the femoral ring in 60% of cases.

McGregor said that the abnormal obturator artery may stick to the side of the femoral vein (lateral border of femoral ring) in 90% of cases [12].

In the present study, in 87.5% of cases the abnormal obturator artery descended on the lateral border of the femoral ring, closely coinciding with McGregor. (Pie chart-1)

The area of the pelvic brim and lateral pelvic wall is very important and it is the anchoring site for the repair of inguinal and femoral hernias. During surgery, the abdominal muscles are retracted laterally by applying pressure on the lateral pelvic wall. Hence a very good knowledge of arterio-venous variations in this area is very important for surgeons[13].

CONCLUSION:

Surgeons and laparoscopists must be aware of the various levels of entry of the inferior epigastric artery into the rectus muscle, percentage frequency of double stem of the artery and unexpected sources of hemorrhage, such as an abnormal obturator artery and its relationship with the femoral ring and take appropriate precautions to avoid injury to these structures.

CONFLICT OF INTEREST:

None declared
REFERENCES:


2. Sir Henry Morris. Human Anatomy. 1893; 11th ed. 376


FOR MOST DIAGNOSES ALL THAT IS NEEDED IS AN OUNCE OF KNOWLEDGE, AN OUNCE OF INTELLIGENCE, AND A POUND OF THOROUGHNESS
INTRODUCTION:

Ingestion of foreign bodies like batteries is a common health issue during childhood. Batteries with a diameter smaller than 20 mm usually pass through the upper gastrointestinal system and are excreted in feces. Larger foreign bodies, on the other hand, may give rise to severe esophageal injury. Button batteries may resolve in stomach and the electrochemical properties of batteries are responsible for their corrosive effects. A battery’s acid content is resolved within the gastrointestinal mucosa, causing coagulation necrosis (1, 2). Heavy metal toxicity may also theoretically occur (3). Cylindrical batteries don’t produce much mucosal damage unless the battery is bitten and causes damage. Foreign body ingestions may also be encountered in adults with psychiatric disorders (4). This report aimed to present a male patient who attempted to commit suicide by ingesting batteries of a TV remote control.

CASE HISTORY:

A 27-year-old man was admitted to our emergency department after ingestion of 2 AAA type batteries of a TV remote control for suicidal purpose 12 hrs ago. His past history known case of psychiatric illness and on treatment. His general condition was stable and vital signs were normal on admission. His laboratory examinations revealed the following: hemoglobin 10 g/dL, leucocyte count 9500 /µL, platelet count 388000/ µL, BUN 15mg/dL, creatinine 0.5 mg/dL, sodium 135 mmol/L, and potassium 4.0 mmol/L. His posteroanterior chest and abdominal x-rays were taken showing 2 A-A-Type batteries in stomach (Figure 1). The patient underwent emergency endoscopy. Two slim batteries were visualized in the antpyloric region of the stomach. (Figure 2). The batteries were removed with the help of a snare with overtube. It should be remembered that adult patients may also present to an emergency department after ingesting foreign materials like batteries. Key-words: Foreign body, adult patient, and AA Batteries

DISCUSSION:

Foreign body ingestion during adulthood are rare, usually

Abstract

Foreign body ingestion is a common problem encountered in children but may also be encountered rarely in adults. Batteries, coins, parts of toys are commonly encountered foreign body ingestion. We present a case of a 27-year-old male patient who attempted to commit suicide by ingesting batteries. He was admitted to our emergency department after ingestion of 2 AAA type batteries of a TV remote control for suicidal purpose. He is known case of psychiatric illness and on treatment. His x-rays were taken, the former showing 2 AAA type batteries in stomach. The patient went for urgent endoscopy. Two AAA batteries were visualized in the antpyloric region of the stomach. The batteries were removed with the help of a snare with overtube. It should be remembered that adult patients may also present to an emergency department after ingesting foreign materials like batteries. Key-words: Foreign body, adult patient, and AA Batteries

Figure 1: X-rays showing batteries
occurring as a result of co morbidities such as mental retardation, psychiatric disorders, pica, or alcohol abuse (4-6). Gastrointestinal passage of a foreign body depends on its length and diameter. It has been reported that 80% of all ingested foreign materials are discharged in feces without causing any noticeable symptoms. The remaining 20%, on the other hand, require endoscopic intervention (7). We diagnosed battery ingestion using a chest X-Ray and determined that the batteries were located to stomach. The length of these standard AA type batteries is 50.5mm and diameter 14.5 mm. Normally, it might be reasonable to wait for gastrointestinal passage of a single battery of this size that had already advanced past the oesophagus. However, as the patient ingested two batteries at a time, and his psychiatric condition would pose a risk during follow-up of gastrointestinal passage, we opted to perform an urgent endoscopic intervention. We also started a proton pump inhibitor following the removal of the batteries. In conclusion, it should be remembered that adult patients may also present to an emergency department after ingesting foreign materials like batteries. These patients should be thoroughly questioned and assessed with regard to underlying neuropsychiatric disorders as well as alcohol and drug abuse.

REFERENCES:


Acknowledgement:
I express my deepest sense of thankfulness to my Professor, assistant professors for their constant support.
INTRODUCTION:

An omphalocele is a birth defect in which an infant’s intestine or other abdominal organs are outside the abdominal wall because of a defect in the umbilical region. The intestines are covered only by a thin layer of membrane. Intestinal atresia is a malformation where there is narrowing or complete obliteration of a portion of the intestine, either the small or the large bowel. The incidence is 1 in 5000 live births and only 1-5% of these cases have colonic atresia. (4,6,7)

It occurs mostly due to intrauterine vascular insult to the developing bowel, leading to ischaemic necrosis and subsequent reabsorption of the affected segments(8,9). It may be associated with other anomalies like omphalocele, intussusception, malrotation, VACTERL and chromosomal abnormalities. Intestinal atresia especially jejunoileal atresia is the most common cause of intestinal obstruction. Intrauterine diagnosis of the condition is possible using USG of the fetal abdomen.

CASE HISTORY:

An one day old male child presented to the department with the complaints of bilious vomiting and not passing meconium after birth. The baby on examination had distended abdomen and a low lying umbilicus with bowel seen through the sac protruding at the umbilical cicatrix. It is a case of exomphalos minor (omphalocele minor). The baby was born at 39 weeks of gestation through uncomplicated normal vaginal delivery.
and his 28th week prenatal ultrasound was normal. Postnatal X ray taken revealed dilated bowel loops. (Fig-2)

**MANAGEMENT:**

The baby was stabilized and taken up for emergency surgery. Laparotomy revealed a bowel loop within the omphalocele with proximal dilated and strangulated bowel and distal atretic colon with a mesentric rent. Limited resection of the distal bowel (atretic colon) and resection of the dilated gangrenous proximal small bowel loop (probably terminal ileum) was done, measuring 15 cm. Patency of the distal bowel was checked.

Terminal ileostomy and colostomy (atretic distal bowel) was done. Oral feed started on Post operative day 3 (POD 3). On POD 17 (20th day of life) relaparotomy was done and ostomies were dismantled and ileocolic anastomosis done. Baby passed greenish stools and oral feeds started on POD 4, and had uneventful period after that.

**DISCUSSION:**

The Incidence of Omphalocele is - 1 in 5000 births. There are two types – major (>4cm) and minor (<4cm), depending on the size of the abdominal wall defect (1,2). Colonic atresia seen in 1.8-5% cases of intestinal atresia (6,7,10,11). In our case it was exomphalos minor with a narrow neck which compromised the blood flow resulting in intestinal atresia and obstruction. The baby had low lying omphalocele (Fig-1) with intestinal atresia (Type IIIa) (12), colon atresia and strangulated bowel. These combinations are rare presentations.

**CONCLUSION:**

This case highlights the fact that any neonate presenting with omphalocele must be evaluated to rule out other associated anomalies, especially those life threatening ones, and appropriate intervention should be attempted at the earliest.

**REFERENCES:**


Acknowledgement:
I would like to acknowledge the Department of Paediatric Surgery, Department of General Surgery, Head of the departments and the Assistant Professors who managed this patient and guided me in presenting this case report.
**INTRODUCTION:**

Electrocution injuries have been classified into low tension (less than 1 kilo volt) and high tension (more than 1 kilo volt) injuries. Electrical injury is produced by conversion of electrical energy into heat energy while passing through the tissues. Usually electrocution injuries will have an entry wound at the site of contact and an exit wound where the current passed out. Bowel perforation due to an electrocution is a rare and serious injury. Here we report a case of an electrocution causing descending colon perforation in an otherwise stable patient. Extensive Medline search revealed very limited cases of electric current induced enteric perforation. Such enteric perforations has a potential to progress as coagulative necrosis of intestines/gall bladder, liver failure, gastrointestinal hemorrhage from stomach and duodenal ulcers, curling ulcers, acute appendicitis, pancreatitis, small bowel perforation, splenic injuries and mesenteric abdominal trauma, if overlooked. Here we report a case of an electrocution causing perforation of descending colon in an otherwise stable patient.

**CASE HISTORY:**

A 40 year old male construction worker by occupation, with history of high tension electric current that he sustained while using a crow bar which accidentally came in contact with a high tension electric wire. He was managed conservatively in a nearby hospital and sent home. After 4 days he was referred to our hospital with abdominal pain and progressive abdominal distension. On examination the patient was conscious, oriented, dehydrated with tachycardia.
toe, second toe and third toe of right foot was seen. Signs of peritonitis was present and bowel sounds were sluggish. Basic investigations revealed elevated total count and urine routine revealing microscopic hematuria. Doppler study of right lower limb was normal. ECG shown tachycardia. CT abdomen revealed thickening in the descending colon with fat stranding, pneumo peritoneum with perforation noted with bilateral basal atelectasis.

Figure 3 Intraoperative picture
Patient underwent immediate exploratory laparotomy with per operative findings such as 500 cc of black coloured fluid was present, stomach was normal, stomach and large intestine were congested and edematous, solid organs were normal. There was a perforation of size 2x1.5 cm on the antimesentric part of the descending colon approximately 7cm below the splenic flexure. There was no faecal contamination. The margin of the perforation was charred and necrosed due to electrocution. Diversion transverse colostomy done, post operatively patient was shifted to ICU since we had difficulty in extubating the patient. Gangrenous toes in the right foot were amputated. Post op period was uneventful and patient was discharged on pod-16.

DISCUSSION:

Electrical burn patients account for approximately 5% of the hospital admissions in major burn centres. High voltage currents (>1000 volts, 50Hz) can occur either directly or indirectly through conductive materials or equipments. Both direct and indirect current causes injury and its severity is determined by the voltage, current intensity, types of current, the current pathway, the duration of exposure, the resistance of tissues, contact surface, the extent of multi-system involvement and the circumstances surrounding the incident. During electrical burn, electric current is passed through underlying structures thereby causing coagulative necrosis and cell membrane rupture. As current passes through tissues, electricity generates heat according to Joules law; Heat (Joule,J) = I^2(current) x R (Resistance)[1].

The increase in temperature causes the denaturation of macromolecules which is usually irreversible. However, the resistance of the tissues during the passage of an electrical current is variable (lower for nerves and vessels and higher for fat and bones) and the trauma done by an electrical current varies according to the individual susceptibility and the quality of care provided at the site of the accident. Visceral injuries are usually disproportional (rare but severe) to the body surface burned and injuries at the entrance and exit site of the electrical current are found in the surviving individuals[2,3]. Visceral lesions require active intervention and are associated with high morbidity and mortality. Therefore, visceral injuries should always be remembered in the case of electrical burns and should be managed adequately by a multidisciplinary team[4].

The colon and small intestine were the organs most frequently affected. Less frequently involved organs were the heart, esophagus, stomach, pancreas, liver, gallbladder, lung, and kidney. Depending upon the extent of the perforation and its anatomical site, as well as on the basis of the presence of diffuse or localized peritonitis, the treatment of perforation will vary from simple suturing, with or without a protective colostomy, to exteriorization in the form of a colostomy, and the Hartmann operation. In our case entry wound was in both hands and exit wound was on the right foot with perforation of the descending colon since the patient was not wearing any shoes at the time of the incident and this type of entry and exit is a rare presentation which hasn’t been so far documented in the literature as we have gone through[5-7]. Gastrointestinal tract perforation is the most common cause of generalized peritonitis and pneumoperitoneum. Among these cases, majority of them are due to peptic perforation, ileal perforation in enteric fever, or small bowel perforation in blunt trauma of the abdomen. Large bowel perforation is seen in a few cases only like diverticular disease, carcinoma, obstruction, and rarely due to trauma. A foreign body can be ingested accidentally or in a suicidal attempt. However, an ingested foreign body causing sigmoid colon perforation is extremely rare. Complications caused by ingestion of a foreign body in the gastrointestinal tract include obstruction, perforation, bleeding, or impaction at the sites of physiological narrowing or acute angulation in the gastrointestinal tract.[8,9]

According to literature sources studied, most of the
perforations due to electric current were involving the colon particularly the descending or sigmoid colon, the reason for which is still rarely understood[5]. Since the patient presented late and there was charring of the tissues, primary anastomosis couldn’t be made and so patient underwent diversion colostomy and anastomosis as a second stage procedure.

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Acknowledgement:
I express my deepest sense of thankfulness to my Professor, assistant professors for their constant support.
INTRODUCTION:

Maduramycosis (Mycetoma) is chronic subcutaneous infection characterized by a clinical triad of chronic indurations, draining sinuses and discharge of granules. The granules are microcolonies of causative agent such as madurella mycetomi, madurella grisa which are fungal eumycotic mycetoma whereas actinomyces Israelii, nocardia madurae, nocardia brasiliensis are bacterial mycetoma. It was described for the first time by Gill in 1842 and named Madura Foot. Male to female ratio is 3:1 to 5:1. It develops after traumatic inoculation of contaminated soil, containing the causative agent. Foot is most commonly affected and infection of hand is uncommon. Several clinical strategies of treatment which includes medical management by antifungal such as ketoconazole, itraconazole for eumycetoma and combination therapy comprising of streptomycin, cotrimoxazole for actinomycetoma. Surgery (excision), amputation if bone is involved. Here is a case of mycetoma of left hand with an unusual presentation.

CASE HISTORY:

A 55 yrs old male, farmer from polachur village Kanchipuram Tamilnadu presented with complaints of swelling in left hand for 4 months. He was apparently well 1 yr back and he had an injury in his hand during routine farming work. After that, he developed this swelling which was Insidious onset and gradually increasing over time and he had a small ulcer over the swelling 1 month back which was healed by treatment with the local practitioner. He presented to our institute with swelling in the left hand dorsal aspect in the 1st web space with the healed scar and no discharge. On examination Patient was well built, Well nourished, and overall general survey normal.
Examination of left hand shows Swelling of about 5*4 cm size and globular shape in the dorsal aspect of 1st web space of left hand. Healed scar and peeling of skin are noted with no warmth and no tenderness, Firm in consistency and mobile in both vertical and horizontal directions. Plane of swelling is subcutaneous. Movements of the joints are normal. On contraction of extensor tendons there is no change in the swelling. No regional lymphadenopathy. Right hand normal. Other systems normal

Routine investigations were sent. Complete blood count and Renal function test were normal. X-ray of left hand reveals soft tissue density in the 1st web space and no bony abnormalities, FNAC shows features suggestive of Giant cell tumor of tendon sheath of Left hand. Patient was diagnosed as Giant cell tumour of tendon sheath and after getting pre anaesthetic fitness he was posted for surgery, excision was done and sent for histopathology. Postop period was uneventful.

Histopathology report came as Maduramycosis with multiple microabscess with brownish colonies (microcolonies) surrounded by polymorphs, foamymacrophages, fibrocollagenous tissue, foreign body giant cells. So he was treated with oral antifungal and dapsone therapy.

DISCUSSION:

Two major forms of mycetoma; bacterial (actinomyecetoma) and fugal mycetoma (eumycetoma). Seen in tropical and subtropical regions. Commonly occurs in foot followed by hand, knee, arm, leg, head and neck, thigh and the perineum. Other rare sites are eyelids, testes, lymph node. The organism is inoculated traumatically through soil in the form of thorn prick. Clinically they present as progressive granulomatous lesion, sinus tract formation and discharge of grains, spreading into adjacent tissue, bone fascia and ligaments. [1-5]

Figure 4: Histopathological picture
Grains discharged from sinus tracts may be white, yellow, brown, red or black depending upon the causative agent. Discovery of these typical grains which are compact colonies of the causative organism and their direct microscopy and cultural examination clinches the diagnosis. Microscopic examination of the granules shows branching hyphae[6,7].

Differential diagnosis includes tuberculosis, leprosy, syphilis, elephantiasis, balstomycosis, neoplasm and others. Treatment is by specific chemotherapeutic agents against the causative organism with or without surgery. Amputation may be required for some resistant cases. Ketoconazole or Itraconazole in combination with surgical intervention is recommended for eumycetoma. But, in all cases medical supervision is required as this condition is prone to recurrences.(8)

REFERENCES:

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Acknowledgement:

I express my deepest sense of thankfulness to my Professor, assistant professors for their constant support.
INTRODUCTION:

Brainstem glioma accounts for 10-15% of pediatric CNS neoplasms. Nearly all patients with diffuse brainstem lesion experience a poor outcome regardless of tumor grade or treatment. Spontaneous regression of brainstem glioma is very rare. Here we report one such case in a child

CASE HISTORY:

8 years old girl presented with difficulty in walking. She was born out of full term vaginal delivery without birth asphyxia with birth weight of 2.25 Kgs with no postnatal complications. She was developmentally normal upto 6 months of age after which she attained her motor milestones with delay. At 1 year of age, child had regression of attained motor milestones and had head lag and could not sit. Subsequently after 9 months, child started attaining the motor milestones. Neck holding at 21 months, sitting with support by 2 years, standing with support at 2 ½ years and walking with support at 3 years.

On examination, there was no NF1 (Neurofibromatosis) stigmata. Child was social and was able to interact. Cranial nerves and Fundi were normal. Child had spastic weakness in both upper and lower limbs (LL>UL) with bilateral extensor plantar and tendoachilles contracture. There were no sensory and cerebellar signs. Child was able to sit without support but was not able to stand or walk unsupported.

MRS showed elevated choline and decreased NAA peaks. Imaging features are in favour of low grade glioma. Histological confirmation was not done. Metabolic workup including Tandem Mass Spectrometry was negative. Evaluation for mitochondrial disease including muscle

Figure 1: MRI Brain at 1 year of age showing T2 hyperintense lesion in medulla and pons
biopsy was negative. EEG and NCS were normal. Child was not subjected to any form of therapy. Serial MRI revealed reduction in size of lesion compared to the previous imaging. Recent MRI at 8 years of age revealed reduction in size of previous lesion with area of gliosis.

**DISCUSSION:**

There are several reports of spontaneous regression of brain tumors in the literature particularly in patients with NF and low grade tumors of hypothalamic-chiasmatic region.(8) Spontaneous regression of brainstem glioma is very rare and only 6 cases are reported in the literature.(1)

Based on MRI, brainstem glioma can be classified into focal 5-10%, dorsal exophytic 5-10%, cervicomedullary 5-10%, diffuse intrinsic 70-85%. (4) Surgical resection is treatment for focal and dorsal exophytic tumors and outcome is better. Cervicomedullary tumor responds to radiation. Diffuse intrinsic brainstem tumors have very poor outcome independent of histological
diagnosis. With radiotherapy, mean survival rate is 12 months at best. (3) Biopsy in children in whom MRI shows a diffuse intrinsic tumor is controversial and is not recommended unless there is suspicion of another diagnosis such as infection, vascular malformations or demyelination. (3)

CONCLUSION:
The case is reported for its rarity.
Though most patients with diffuse brainstem glioma have a bad prognosis, one should also be aware of spontaneous regression of glioma in occasional cases.

REFERENCES:
INTRODUCTION:

Papillary carcinoma of thyroid affects any age group with female predominance. It is an indolent neoplasm with excellent long term prognosis. Most patients present with painless neck mass. It shows a propensity to invade locally and to metastasize to regional nodes. It has many variants like follicular, solid, encapsulated, tall cell, columnar, warthin like, oncocytic, trabecular and micropapillary. Warthin like variant was first reported by Apet et al in 1995.

CASE HISTORY:

A 54 years female came with complaints of neck swelling for 6 months duration. Ultrasonogram revealed a 2.5x1.5x1 cm nodule over the left lobe with increased vascularity and microcalcification. Fnc was done and a diagnosis of papillary carcinoma of thyroid was made. The patient underwent total thyroidectomy and a histopathological diagnosis of warthin like papillary carcinoma of thyroid was made. It is a rare variant of thyroid carcinoma which is frequently associated with lymphocytic thyroiditis. It has a prognosis similar to classical thyroid carcinoma. We are presenting this case for its rarity and to avoid confusion with benign lesions of thyroid.

Abstract

We present a case of Warthin-like papillary carcinoma of thyroid in a 54 year-old woman who presented with swelling of 6 months duration. Fnc was done and a diagnosis of papillary carcinoma of thyroid was made. The patient underwent total thyroidectomy and a histopathological diagnosis of warthin like papillary carcinoma of thyroid was made. It is a rare variant of thyroid carcinoma which is frequently associated with lymphocytic thyroiditis. It has a prognosis similar to classical thyroid carcinoma. We are presenting this case for its rarity and to avoid confusion with benign lesions of thyroid.

Key words: papillary carcinoma, warthin like, lymphocytic thyroiditis.

DISCUSSION:

Papillary carcinoma is the most common type of thyroid cancer, more common in females. Although uncommon in early childhood, papillary carcinoma accounts for the vast majority of thyroid cancers in this age group. The lobe measured 4x2.5x1 cm, external surface- nodular. Cut surface revealed an unencapsulated irregular mass, measuring 2.5x1.5x1 cm, occupying the entire lobe and close to the inferior and infero-lateral margin (fig 1). Microscopic features from the Left lobe shows an unencapsulated neoplasm composed of papillary and pseudo-papillary structures (Fig 3a) lined by oncocytic cells with nuclei exhibiting crowding, overlapping, clearing and inclusions. The papillary structures are surrounded by a dense lymphoid stroma with lymphoid follicles (Fig 3b). Some of the tumour cell nests are surrounded by dense hyalinised sroma.

Fig 1: Shows a irregular mass measuring 2.5x1.5x1 cm involving entire left lobe

Fig 2: Showing clusters of oncocytic cells crowding and some cells with inclusions

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e-mail: stalin0688@gmail.com
incidence increases sharply during adolescence and early adulthood and is highest in the fifth decade of life among women and in the sixth to seventh decade of life among men. Most patients present with painless neck mass but some patients present initially with lymph node metastasis and occult primary tumor in thyroid is almost always found on ipsilateral side. Cystic metastasis are problematic because they may be mistaken for branchial or benign cysts.

It is usually an infiltrative tumor with irregular borders and hard consistency. They are white to tan and have a granular texture due to the presence of papillae. Cut surface may be gritty due to psammoma bodies. On microscopy, it shows a irregular growth with infiltrative border. Classic features includes papillary pattern lined by cuboidal to low columnar cells with abundant pale eosinophilic cytoplasm with nuclear features of crowding and overlapping (eggs in a basket appearance), chromatin clearing (orphan annie eye nuclei), irregular contours, grooves (coffee bean appearance) and pseudo inclusions. It has many histological variants.

Warthin like variant may be considered as a subtype of papillary carcinoma of thyroid, which was first described by Apel et al. in 1995. Microscopic appearance resembles warthin's tumor of salivary glands, which is characterized by cells with oncocytic cytoplasm and nuclear features of papillary carcinoma lining papillary structures with dense lymphocytic infiltration in stalks. Tumor is usually well circumscribed and solid. Cells in stalk are a mixture of T and B lymphocytes and plasma cells. Extensive lymphocytic infiltration and frequent association with lymphocytic thyroiditis may suggest a immunologic mechanism for these tumors, also malignant thyroid follicular cells express HLAtype II antigens in response to tumor infiltrating lymphocytes which may play a role in immune response.

It is associated with both RET and BRAF mutation. Warthin-like tumors has to be differentiated from benign lymphoepithelial lesions of the thyroid, Hürthle cell carcinoma, and tall cell variant of papillary carcinoma. Hürthle cell carcinoma lacks lymphoplasmacytic infiltrate and is rarely associated with lymphocytic thyroiditis. Tall cell variant is characterized by papillary structure with elongated oncocytes, with height atleast three times their width, and by neoplastic aggressiveness with frequent mitosis, necrosis and extrathyroidal extension. In immunohistochemistry, it is positive for galectin-3, HBME-1, CK19, TTF-1, thyroglobulin, EMA, AE1/AE3, S-100 protein, cyclin D1 and UCHL1, CD3+, CD20+, and CD79+ (for the lymphocytic population).

**CONCLUSION:**

Warthin like papillary thyroid carcinoma is a rare variant of papillary thyroid carcinoma which must be mentioned in report since it has favourable prognosis compared to tall cell variant. Diagnosis is based on morphology because the role of immunohistochemistry in differentiating from tall cell variant is limited.

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GUIDELINES TO AUTHORS

AIMS AND SCOPE:

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