PROJECT TITLE

A retrospective survey of appendicitis cases in the B.K.L.Walawalkar hospital Dervan from the year 2010 to 2013.

Submitted in partial fulfillment of the

ADVANCED DIPLOMA IN MEDICAL LABORATORY TECHNOLOGY

SVJCT’s Walawalkar Hospital

Semester 3rd
Batch (2012-2013)

(Institute code 0616)

Institute Name: - SVJCT’S College Of Advanced Studies Dervan.

Transforming lives... One at a time!

By: GHANEKAR NISHIGANDHA RAMCHANDRA SUMEDHA
DEDICATION

I dedicate this hospital research project to,

My most beloved Parents,

SVJCT’s Walawalkar Hospital

My Teachers

&

My all Friends.

Transforming lives...
One at a time!

Miss- GHANEKAR NISHIGANDHA RAMCHANDRA SUMEDHA
ACKNOWLEDGEMENT

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I once again express thanks to all of the staff members and others who have directly and indirectly helped me during my tenure.

Miss: GHANEKAR NISHIGANDHA RAMCHANDRA SUMEDHA
TITLE
A retrospective survey of appendicitis cases in B. K. L. Walawalker hospital dervan from 2010 to 2013.

AIM
To study the retrospective study of appendicitis cases in the patient visiting B.K.L.Walawalker hospital Dervan.

OBJECTIVE
1) To determine the frequency of appendicitis cases in the patients admitted for abdominal ailments in the B. K. L. Walawalker Hospital Dervan in the year 2010 to 2013.
2) To collect the information about histopathological findings of the patient with appendicitis.
3) To determine age group wise distribution of appendicitis cases.
4) To determine sex wise distribution of the appendicitis specimen received in histopathology.

INTRODUCTION
Appendicitis is the most common acute abdominal condition the surgeon is called on to treat. It is the well known medical entity and one of the most difficult diagnostic problems to confront the emergency physician[7].

In 1886 Fitz recognized acute appendicitis as a distinct entity. Claudius Amyand performed the first appendicitis operation at St. George’s hospital, London, in 1735.[2]

Appendicitis can be defined as an inflammation of the inner lining of the vermiform appendix that can spread to its other parts. Inflammation of appendix is mainly disease of adolescent and young adults but it may occur in any age group. Studies have demonstrated that appendicitis is most common in western societies[1]. The rate of appendicitis is found to be varying for different regions and countries. Majority of appendicitis cases are of acute type while few are diagnosed as non acute or chronic appendicitis. Chronic appendicitis is not generally accepted as an independent clinical entity. The diagnosis is often made only after
histological analysis when the patient has undergone appendectomy in a case of persistent or recurrent pain.[9]

ANATOMY OF APPENDIX
The appendix is a part of caecum; located in the right lower quadrant of the abdomen. The adult appendix averages 7cm in length, partially anchored by a mesenteric extension from the adjacent ileum and has no known function. A distinguishing feature of this organ is the extremely rich lymphoid tissue of the mucosa and sub mucosa. In young individuals the lymphoid tissue forms the entire layer of germinal follicles and lymphoid pulp. This lymphoid tissue undergoes atrophy as the age progresses. In the elderly, the distal portion of appendix undergoes fibrous obliteration.[7].

CAUSES
Appendicitis is associated with obstruction in 50 to 80% cases usually in the form of fecalith, gall stone, tumor or parasites. Continuous secretion of mucous fluid in the obstructed appendix leads to increase in intra luminal pressure causing collapse of draining veins the ischemic injury and favors bacterial growth causing edema and exudation.
Appendicitis has been also attributed to inadequate dietary fibers, familial susceptibility, and also includes social economic conditions and susceptibility to pathogenic infections.[1] There are no known predisposing factors, but the individuals having other disorders like edema, presence of foreign body intestinal parasites or tumors are at higher risk of developing appendicitis[8].

CLINICAL FEATURES
Appendicitis is 1.7 times more prevalent in males than female with peak incidence in young age appendicitis commonly develop in three stages
1) The edematous stage in which the inflammation appendix resolves spontaneously.
2) The purulent stage in which appendicitis continue to evolve towards rupture (perforation)
3) The gangrenous stage in which the appendix ruptures causing infection of abdominal cavity (peritonitis).
Classically appendicitis produces following manifestations
1) Periumbilical pain localizing to the right lower quadrant.
2) Nausea and vomiting
3) Abdominal tenderness particularly in the region of appendix
4) Mild fever
5) Increase WBC count up to 15000-20000 cells/cumm.

**DIAGNOSIS**

A different diagnosis of appendicitis must include virtually every acute process that can occur within the abdominal cavity as well as some emergent conditions affecting organs of thorax. Diagnosis is achieved by considering the following points:

1) **History and physical examination** Checking the classical symptoms of appendicitis and history of previous infection or predisposing factors.
2) **Laboratory investigation**
   Laboratory investigation like CBC, C Reactive Protein, abdominal USG and x-rays or CT scan is performed.
3) **Histopathological investigation**
   In majority of cases the disease appendix is surgically removed and sent for histopathological examination to differentiate appendicitis into acute and non acute; mostly referred as chronic.

Appendicitis though most common ailment in an overall population affecting all age groups is under estimated and least studied. There are various theories on the frequency and incidences of appendicitis which are still debated. There is general agreement that in 20-25% cases even the highly competent surgeons make false positive diagnosis of the appendicitis and remove normal appendix. There is need of studying the incidences of appendicitis cases to reveal the true status of current diagnostic and surgical procedure.
METHODOLOGY

1) The abdominal cases out of the total histopathology cases received in the year 2010 to 2013 in the histopathology department of B. K. L. Walawalkar Hospital Dervan were surveyed for cases of appendicitis.

2) In the 2 years i.e. 2010 to 2013, total cases of appendicitis were detected and tabulated.

3) Total number of positive appendicitis cases were determined as per the impressions and diagnosis reported.

4) The total prevalence of appendicitis was determined from the available data.

5) The appendicitis cases were distributed gender wise to determine their gender wise prevalence.

6) The data was distributed age group wise to determine age wise prevalence of appendicitis cases.

7) The data was also distributed diagnosis wise to determine the prevalence of acute and chronic appendicitis cases.

8) Result and conclusion was drawn from the above observations.

DATA ANALYSIS

Table 1:

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Number of cases</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Histopathology cases</td>
<td>2203</td>
<td>-----</td>
</tr>
<tr>
<td>Abdominal cases</td>
<td>384</td>
<td>17.43</td>
</tr>
<tr>
<td>Appendicitis</td>
<td>44</td>
<td>1.99</td>
</tr>
<tr>
<td>Positive appendicitis cases</td>
<td>43</td>
<td>1.95</td>
</tr>
</tbody>
</table>

Total 384 abdominal cases out of Total 2,203 histopathology cases received in the year 2010 to 2013 in the histopathology department of B. K. L. Walawalkar Hospital Dervan were surveyed for cases of appendicitis. About 44 (1.99%) cases of appendicitis were detected out of which 43 (1.95%) were detected positive and only 1 case was found to be normal.
Table 2: Distribution of Histopathology cases

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Prevalence of cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other cases</td>
<td>1,819 (81%)</td>
</tr>
<tr>
<td>Other Abdominal cases</td>
<td>340 (15%)</td>
</tr>
<tr>
<td>Total Appendicitis cases</td>
<td>44 (11.45%)</td>
</tr>
<tr>
<td>Positive appendicitis cases</td>
<td>43 (97.72%)</td>
</tr>
<tr>
<td>Appendicitis Negative cases</td>
<td>1 (12.64%)</td>
</tr>
</tbody>
</table>

Distribution of histopathology cases surveyed shows that there are 1,819 (81%) other cases, 340 (15%) other abdominal cases, 44 (11.45%) appendicitis cases out of which 43 (97.72%) are positive appendicitis cases and 1 (12.64%) are negative cases.

Table 3: Age group wise distribution of appendicitis cases

<table>
<thead>
<tr>
<th>Age group (Years)</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;10</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>10 to 20</td>
<td>7</td>
<td>9</td>
<td>16</td>
</tr>
<tr>
<td>20 to 30</td>
<td>4</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>30 to 40</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>40 To 50</td>
<td>6</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>50 To 60</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>&gt;60</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>23</td>
<td>44</td>
</tr>
</tbody>
</table>

There are maximum numbers of female cases (23 i.e. 52.3%) than the males (21 i.e. 47.7%). The age group wise distribution shows maximum 16 (36.3%) cases in age group 10 to 20 years including maximum 9 (39.1%) female cases and 7 (33.3%) cases of male.
Maximum cases are observed in age group 10 to 20 years followed by age group 20 to 30 years.

There are maximum 9 (39.1%) female cases in age group 10 to 20 years and 5 (21.7%) cases in age group 20 to 30 years. There are maximum 7 (33.3%) male cases in age group 10 to 20 and 6 (28.5%) cases in age group 40 to 50 years it indicates that appendicitis cases in this region are affecting females as compare to males in the age group above 30 years.
Table 4: Diagnosis wise distribution of appendicitis cases

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute</td>
<td>17</td>
<td>20</td>
</tr>
<tr>
<td>Chronic</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Normal</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

There are maximum 37 (84%) cases of acute appendicitis including 20 (45.4%) females and 17 (38.6%) males as compared to 6 (13.6%) cases of chronic appendicitis with 4 (9%) males and 2 (4.5%) females.

There are highest 37 (84%) cases of acute appendicitis with maximum 20 (45.4%) cases in females as compared to 17 (38.6%) cases in males.

**OBSERVATIONS**

1) Total 384 abdominal cases out of total 2,203 histopathology cases received in the year 2010 to 2013 in the histopathology department of B. K. L. Walawalkar Hospital Dervan were surveyed for cases of appendicitis. About 44 (1.99%) cases of appendicitis were detected out of which 43 (1.95%) were detected positive.

2) Distribution of histopathology cases Surveyed shows that there are 1,819 (81%) other cases, 340 (15%) other abdominal cases, 44 (11.45%) appendicitis cases out of which 43 (97.72%) are positive appendicitis cases.

3) There are maximum numbers of female cases (23 i.e. 52.3%) than the males (21 i.e. 47.7%). The age group wise distribution shows maximum 16 (36.3%) cases in age group 10 to 20 years including maximum 9 (39.1%) female cases and 7 (33.3%) cases of male.
4) There are maximum 37 (84%) cases of acute appendicitis including 20 (45.4%) females and 17 (38.6%) males as compared to 6 (13.6%) cases of chronic appendicitis with 4 (9%) males and 2 (4.5%) females.

RESULT
1) Total 384 abdominal cases out of Total 2,203 histopathology cases received in the year 2010 to 2013 in the histopathology department of B. K. L. Walawalkar Hospital Dervan were surveyed for cases of appendicitis. About 44 (1.99%) cases of appendicitis were detected out of which 43 (1.95%) were detected positive.
2) Distribution of histopathology cases Surveyed shows that there are 1,819 (81%) other cases, 340 (15%) other abdominal cases, 44 (11.45%) appendicitis cases.
3) Out of 44 appendicitis cases 43(97.72%) are positive.
4) Maximum cases are observed in age group 10 to 20 years with 9 (39.1%) female cases and 7 (33.3%) male cases followed by age group 20 to 30 years with 5 (21.7%) female cases. There are 6 (28.5%) male cases in age group 40 to 50 years. It indicates that appendicitis cases in this region are affecting females as compare to males in the age group above 30 years.
5) There are highest 37 (84%) cases of acute appendicitis with maximum 20 (45.4%) cases in females as compared to 17 (38.6%) cases in males.

SUMMARY & CONCLUSION
Appendicitis is a common acute abdominal condition which is most difficult diagnostic problem for the physician. Total 2,203 histopathology cases in year 2010-2013 were surveyed for appendicitis 44 cases of appendicitis were detected which accounted for 1.99% of total histopathology cases and 11.45% of total abdominal cases. About 43 (97.72%) cases were positive mostly affecting females as compare to males in the age group >30 years of age. Most of the cases are of acute appendicitis.
The findings are significant and contrasting with the reviewed references which report appendicitis to be most common in the higher age especially in the males. Thus the study signifies the importance of diagnosing appendicitis cases more cautiously especially focusing the females of young age.
REFERENCES
8) Santavorce and J.B. Ochoa; Appendicitis, eMedicine, Eds. Oscar joellines and et al, 2009, Medscape.
9) Mussack T, Schmidbauer S et al; Chronic appendicitis as an independent clinical entity, Chirurg. 2002 Jul; 73(7): 710-5.