Study of Prevalence of Appendicitis in children of Bihar Population

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Abstract

Background: Appendicitis is quite common surgical emergency in children because it is longer in children ranges from 2-20 cm than adult 6-10 cm. Moreover it is most constricted part of GIT like pharynx.

Method: 80 children (40 male and 40 females) below 10 years having symptoms of appendicitis and confirmed by USG/CT scan were operated by General anaesthesia and dissected part was sent to histo-pathology test to rule out the exact pathology.

Results: Highest incidence of acute appendicitis was observed in both sexes 23 (57.5%) male, 20 (50%) female and least number of perforated appendicitis 10 (25%) in male, 4 (10%) in female was observed.

Conclusion: Present pragmatic study of appendicitis having acute, chronic and perforation will help the surgeon to treat efficiently to avoid morbidity and mortality in children.

Keywords: Chronic, acute, perforated, Mac Burney’s point USG/CT

Introduction

Appendicitis and pharynx are more constricted part of GIT hence they more prone to get infected (¹). In children the length of appendicitis is proportionally more than adults because there is no any other lymphatic organ in children except thymus. Appendicitis is quite common disease in children due to lack of development of peritoneum and omentum (²). It is suggested that, in the childhood there is peak of development of lymphoid tissue which leads to increased liability of appendix to obstruct (³). As lymphoid organ is called solder of the abdomen due to lack of any other lymphoid organs except thymus more responsibility of defence is with appendix (⁴), hence it has to change its position to combat with infection with its extreme length leads to appendicitis. If undiagnosed or delayed approach to medical aid causes perforation of appendix which alarms the surgical intervention.

Material and Methods

80 children aged between 5 to 10 years (40 male and 40 females) visited to surgery department of Mata Gujri Memorial Medical College hospital Kishanganj – 855107, Bihar were studied.

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Inclusive Criteria: Children of both sexes below ten years having the symptoms of appendicitis and confirmed by USG and / CT scan were selected for study.

Exclusion Criteria: Children diagnosed as Mickels diverticulum, volvulus, and malignancy in right iliac fossa children having any congenital anomalies were excluded from the study.

Method: Every patient presented abdominal pain with Mac Burney’s tenderness; Appendicitis was confirmed by USG/CT scan. Routine blood examination was carried out to rule out any other clinical manifestations and dissected appendix was sent to histo-pathology liberty.

Duration of study was August-2021 to July-2022.

Statistical analysis: Types of appendicitis in both sexes were classified with percentage. The statistical analysis was carried out in SPSS software. The ratio of male and female children was 1:1.

Observation and Results

Table-1: Prevalence of appendicitis in male children

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Types of Appendicitis</th>
<th>Age group</th>
<th>No. of</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Perforated appendicitis</td>
<td>a) 5-6 yrs</td>
<td>7</td>
<td>17.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b) 9-10</td>
<td>3</td>
<td>7.5</td>
</tr>
<tr>
<td>2</td>
<td>Acute appendicitis</td>
<td>a) 5-6 yrs</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b) 7-8 yrs</td>
<td>8</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c) 9-10</td>
<td>5</td>
<td>12.5</td>
</tr>
<tr>
<td>3</td>
<td>Chronic Appendicitis</td>
<td>a) 5-6 yrs</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b) 7-8 yrs</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c) 9-10</td>
<td>3</td>
<td>7.5</td>
</tr>
</tbody>
</table>

Table-2: Prevalence of appendicitis in Female children (aged between 5 to 10 years)

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Types of Appendicitis</th>
<th>Age group</th>
<th>No. of children</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Perforated appendicitis</td>
<td>a) 5-6 yrs</td>
<td>3</td>
<td>7.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b) 9-10</td>
<td>1</td>
<td>2.5</td>
</tr>
<tr>
<td>2</td>
<td>Acute appendicitis</td>
<td>a) 5-6 yrs</td>
<td>7</td>
<td>17.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b) 7-8 yrs</td>
<td>11</td>
<td>27.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c) 9-10</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>Chronic Appendicitis</td>
<td>a) 5-6 yrs</td>
<td>6</td>
<td>15.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b) 7-8 yrs</td>
<td>7</td>
<td>17.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c) 9-10</td>
<td>3</td>
<td>7.5</td>
</tr>
</tbody>
</table>
Discussion

Present study of prevalence of appendicitis in Bihar were studied, Children – In the study of male children 7 (17.5%) aged between 5-6 years, 3 (7.5%) were aged between 9-10 years had perforated appendicitis. In acute appendicitis 10 (25%) were aged between 5-6 years, 8 (20%) were aged between 7-8 years, 5 (12.5%) were aged between 9-10 years. In the case of Chronic appendicitis – 2 (5%) were aged between 5-6 years, 2 (5%) were aged between 7-8 years, 3 (7.5%) were aged between 9-10 years (Table-1). In females below ten years – In the case of perforated appendicitis 3 (7.5%) were aged between 5-6 years, 1 (2.5%) were aged between 9-10 years. In the case of acute appendicitis – 7 (17.5%) were aged between 5-6 years, 11(27.5%) were aged between 7-8 years, 2 (5%) were aged between 9-10 years. In chronic appendicitis – 6 (15%) were aged between 5-6 years, 7 (17.5%) were aged between 7-8 years, 3 (7.5%) were aged between 9-10 years (Table-2). These findings are more or less in agreement with previous studies (5)(6)(7).

The percentage of perforated appendicitis in male children was 25% while in female children it was just 10% and in acute appendicitis 57% in male children while in female children it was 50%. It clearly indicates that, severity and medical emergency of appendicitis is more in male children than female children (8). In the children of both sexes aged between 5-6 years having perforated appendicitis can cause serious complications such as peritonitis and abscess formation which increases morbidity and long stay at hospital, hospital cost too (9). Because of delay in diagnose and mis-interpretation of history and physical examination hence radiological study becomes ultimate diagnostic factor for appendicitis in children (10).

Abdominal pain is the most common presenting symptoms followed by vomiting fever and anorexia on examination localised right lower quadrant tenderness predominate over diffuse tenderness. Other physical signs include involuntary guarding, rebound tenderness and temperature greater than 37°C (11). Increased WBC count, and elevated neutrophil count is one of the laboratory diagnoses but C-reactive (CBP) is non-specific. It has sensitivity from 43% to 92% only in children appendicitis (12), hence ultimately radiological (USG/CT scan) are decisive or confirmatory factors.

Summary and Conclusion

Present study of prevalence of appendicitis in children below ten years had incident of acute appendicitis and least incidence of perforated appendicitis. It needs proper physical examination complete blood examination (CBC count) study and ultimately radiological examination to confirm the appendicitis in children. Delayed approach to medical aid will causes higher rate of morbidity and mortality.

Limitation of study – Owing to tertiary location of research centre, small number of patients and lack of latest techniques we have limited findings and results.

This research paper was approved by Ethical committee of Mata Gujri Memorial Medical college Kishanganj – 855107 Bihar

Conflict of Interest: No

Funding: No

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