Clinical Study of Acute Appendicitis with Special Reference to Alvarado Score

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Abstract

Background: Acute appendicitis is the acute inflammation of the appendix. It is a surgical emergency, which is associated with morbidity and mortality occasionally. There are many scoring systems for the diagnosis of acute appendicitis, of these Alvarado score is simple scoring system that can be instituted easily in outpatient setting. It is purely based on history, clinical examination and few laboratory tests. The objectives of the study were to evaluate efficacy of Alvarado scoring system in preoperative diagnosis of acute appendicitis and correlating it with postoperative findings. Material and Methods: A prospective study was conducted on 45 patients presenting with symptoms and signs of acute appendicitis at Dr. Vasantrao Pawar Medical College, Nashik from August 2014 to December 2016. The patient who met the inclusion criteria were evaluated using Alvarado scoring system. Result: In present study 45 cases with a clinical diagnosis of acute appendicitis were studied. Majority (44.44%) were in the age group of 21-30 years. In this study, 24 patients (53.33%) were male and 21 patients (46.67%) were female with male to female ratio (1.1:1). Pain was the most common presenting symptom (100%). Out of 45 patient, 34 patients (75.56%) have score >7 and 11 patient (24.44%) have score <7 and among these 38 patients (84.44%) got operated. Appendix was inflamed in 63.16% cases. Conclusions: Alvarado scoring system is an easy, simple, cheap, reliable and safe tool in pre operative diagnosis of acute appendicitis and can work effectively in routine practice.

Keywords: Alvarado Scoring System, Appendicitis

1. Introduction

Appendicitis is an acute inflammatory condition of the appendix. It is a surgical emergency and most of the cases require immediate removal through surgery either open or laparoscopic appendicectomy. There are many diagnostic modalities available like x ray, ultrasonography, computed tomography and barium enema study etc for diagnosis of appendicitis, but even these the rate of misdiagnosis of appendicitis and negative appendicectomy has remain constant. There are many scoring systems for discriminating between acute appendicitis and nonspecific abdominal pain. Alvarado scoring system is one of them, available for the diagnosis of acute appendicitis and is purely based on history, clinical examination and few laboratory tests and is very easy to apply. It is an aid in diagnosing acute appendicitis and arriving at a conclusion whether a particular case should be operated or not, thereby reducing the number of negative laparotomies.

The present study aims at evaluating the efficacy of Alvarado scoring system in preoperative diagnosis of acute appendicitis and correlating it with postoperative finding.
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2. Methods

The present study is a prospective study of 45 patients presenting with symptoms and signs of acute appendicitis to the Surgery department between a periods of August 2014 to December 2016.

2.1 Inclusion Criteria

All clinical suspicious cases of first episode of acute appendicitis irrespective of age and gender.

2.2 Exclusion Criteria

- Case of recurrent appendicitis.
- Pre existing co morbid appendicular pathology such as malignancy, appendicular mass or abscess.
- Patient with pre existing ileocecal pathology like tuberculosis or malignancy.
- Patients not willing to give consent.

After initial evaluation of the patient in the casualty/opd of medical hospital by department of General surgery, patients with the diagnosis of acute appendicitis were admitted to the wards. Then after finding the suitability as per inclusion and exclusion criteria, patients were selected for the study and briefed about the nature of the study, the interventions used and the written informed consent was obtained. The detailed history, clinical examination, laboratory investigations were done.

Then they were evaluated using Alvarado scoring system. Each patient was given a score and based on the score were divided into two groups.

Group 1: Score 7 - 10: Emergency surgery group (most likely acute appendicitis).

Group 2: Score <7: Observation group (probably/unlikely acute appendicitis).

Decision for appendicectomy was taken by the surgeon. The Details of intraoperative findings were recorded and definitive diagnosis was based on histopathological assessment of the specimen.

3. Result

Patients were divided in to two groups according to sex, 24 were male and 21 were female (table-1). Men are at greater risk than women for developing appendicitis.

Table 1. Gender distribution

<table>
<thead>
<tr>
<th>Gender</th>
<th>No. of patients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>24</td>
<td>53.33%</td>
</tr>
<tr>
<td>Female</td>
<td>21</td>
<td>46.67%</td>
</tr>
</tbody>
</table>

All the 45 patients presented with pain in right iliac fossa (100%). Nausia/vomiting and fever was next common complaint present in 34 patients (75.56%). Anorexia was present in 32 patients (71.11%) (table-2).

Table 2. Individual feature of Alvarado score

<table>
<thead>
<tr>
<th>Individual feature of Alvarado score</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Migration of pain to right iliac fossa</td>
<td>45</td>
<td>100.00%</td>
</tr>
<tr>
<td>Anorexia</td>
<td>32</td>
<td>71.11%</td>
</tr>
<tr>
<td>Nausea/ Vomiting</td>
<td>34</td>
<td>75.56%</td>
</tr>
<tr>
<td>Right iliac Fossa Tenderness</td>
<td>42</td>
<td>93.33%</td>
</tr>
<tr>
<td>Rebound Tenderness</td>
<td>30</td>
<td>66.67%</td>
</tr>
<tr>
<td>Fever</td>
<td>34</td>
<td>75.56%</td>
</tr>
<tr>
<td>WBC counts</td>
<td>34</td>
<td>75.56%</td>
</tr>
<tr>
<td>Shift to Left</td>
<td>12</td>
<td>26.67%</td>
</tr>
</tbody>
</table>

Out of 45 patients, 13 patients (28.89%) had Alvarado score 8, 11 patients (24.44%) had score 9, 10 patients (22.22%) had score 7, 4 patients (8.89%) had score 6, 4 patients (8.89%) had score 5 and 3 patients had Alvarado score 4 respectively (table-3).

Among 45 patients, 38 patients (84.44%) got operated and remaining 7 patients (15.56%) conservatively treated. In operated cases, simple inflamed appendix were found intra-operatively in 24 (63.16%) patients, 7 (18.42%) had gangrenous appendix and 7 (18.42%) had perforated appendix.

In this study, among 38 operated patients, 4 patients (10.53%) had post operative complications (wound infection) and remaining 34 patients (89.47%) had no post operative complication (table-4).

Table 4. Post operative complication

<table>
<thead>
<tr>
<th>Post-Operative Complication</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wound Infection.</td>
<td>4</td>
<td>10.53%</td>
</tr>
<tr>
<td>Nil</td>
<td>34</td>
<td>89.47%</td>
</tr>
<tr>
<td>Total</td>
<td>38</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

4. Discussion

Acute appendicitis is common abdominal emergency
6. References


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