

**Original article:**

## Study of Complications of Appendicular Perforation

<sup>1</sup>Dr R N Patil\* , <sup>2</sup>Dr. Aakash Dinesh Joshi , <sup>3</sup>Dr. Dilip K Apturkar

<sup>1</sup>Department of Surgery, Gadag Institute of Medical Sciences, Gadag , Karnataka

<sup>2,3</sup>Department of Surgery, Rural Medical College, PIMS (DU) , Loni

Corresponding author\*

### Abstract:

**Introduction:** The appendix was first described in 1521 and inflammation of the appendix has been known to be a clinical problem since 1759. The term 'appendicitis', However, was not used until Reginald Fitz described this condition in 1886. One of the commonest clinical presentations that require emergency surgery is appendicular perforation.

**Methodology:** This was a prospective clinicopathological study with included 100 cases. This study included randomly all operated patients (100) suspected of appendicular perforation between 17<sup>th</sup> September 2016 to 16<sup>th</sup> September 2018 in the Department Of Surgery.

**Results:** By applying Chi-Square test there is a significant association between Modified Alvarado score and histology report ( $p < 0.05$ ) Overall sensitivity of Alvarado score = 92.8%, specificity= 81.25%, PPV= 96.2% and NPV = 68.4%.

**Conclusion:** At the end we continue to stress that history and clinical examination by a skilled surgeon still remain indispensable in diagnosing appendicular perforation and its importance cannot be undermined, all the above can be kept in diagnostic armamentarium of the surgeon to complement his clinical diagnosis.

### Introduction:

The appendix was first described in 1521 and inflammation of the appendix has been known to be a clinical problem since 1759<sup>(1, 2)</sup>. The term 'appendicitis', However, was not used until Reginald Fitz<sup>(3)</sup> described this condition in 1886. One of the commonest clinical presentations that require emergency surgery is appendicular perforation<sup>(4, 5)</sup>. It is rare amongst the elderly, but is common in children, teenagers and young adults<sup>(6)</sup>. Much effort has been directed towards early diagnosis and intervention as approximately 6% of the population will suffer from this disease during their life time<sup>(7)</sup>. Delay in diagnosis leads to increase morbidity and costs.

### Methodology:

This was a prospective clinicopathological study with included 100 cases. This study included randomly all operated patients (100) suspected of appendicular perforation between 17<sup>th</sup> September 2016 to 16<sup>th</sup> September 2018 in the Department Of Surgery.

### PATIENTS SELECTION:

### INCLUSION CRITERIA:

- All cases diagnosed as acute appendicitis clinically on admission.
- All patients diagnosed as appendicular perforation clinically on admission.
- All patients diagnosed on laparotomy.

- Patients ready to give informed written consent.

**EXCLUSION CRITERIA:**

- All cases with either primary peritonitis or that due to anastomotic dehiscence.
- All patients with Intestinal perforation.
- All patients not willing for operative procedure.

**Methodology:**

Clinical signs of appendicular perforation determined by the surgeons and the duration of the symptoms were documented on admission. An informed consent was obtained from all registered cases.

In all patients with pain in right iliac fossa the provisional diagnosis of appendicular perforation was made on the basis of history, clinical signs and relevant clinical data.

Among 100 cases of operated appendectomy in this study patients age group ranged from 0-10 to 90 years. Maximum group of patients belonged to 11 to 20 years(40 patients i. e, 40%)

Among 100 patients of operated appendectomy in this study, 28 were female (28%)and 72were male (72%).Out of total 100 operated patients 90 patients diagnosed as HPE positive ( 90%)Rest 10 patients had HPE negative (normal appendix)i. e, 10%.The negative appendectomy rate in this study is 10%

**Results:**

**Table No. 1 Post operative complication**

Complication	wound infection	Soakage	paralytic ileus
no of patients	5	2	2

**Table no 2. Modified Alvarado score and HPE report**

Modified Alvarado score	Histology report		Total
	Positive	Negative	
>7	69	1	81
<7	20	10	19
Total	89	11	100

Value of  $\chi^2 = 43.266$ ,  $p < 0.05$ , significant

By applying Chi-Square test there is a significant association between Modified Alvarado score and histology report ( $p < 0.05$ )

Overall sensitivity of Alvarado score = 92.8%, specificity= 81.25%, PPV= 96.2% and NPV = 68.4%.

**Table no 3. Sex Distribution for Modified Alvarado Score<7**

No. of cases	No. of cases with HPE appendicitis	No. of cases without HPE appendicitis	Total
Male n=13	4(30. 7%)	9(69. 2%)	13
Female n=6	1(16. 6%)	5(83. 33%)	6
Total= 19	5	14	19

Value of  $\chi^2 = 3.97$ ,  $p < 0.05$ , significant

By applying Chi-Square test there is a significant association between No. of cases with HPR appendicitis and sex ( $p < 0.05$ )

**Discussion:**

In our study total 100 patients underwent appendectomy out of which 9% developed complication. Most common POC – wound infection (in 5 patient), 2% had soakage and 2% had paralytic ileus. This study was done in Department of General Surgery, Pravara Institute of Medical Sciences, Rural Medical College from September 2016 to September 2018. A total of 100 patients were included in this study. Out of 100 patient 28 were female and 72 were male. Maximum group of people belong to 11-20 years (40 patients) i. e. 40%. Appendicular perforation is mainly a disease of adolescents and young adults<sup>(8)</sup>.

Clinical diagnosis was found to be correct in 90% of cases and negative appendectomy rate was 10% in this study. A high degree of accuracy is required to reduce the incidence of negative appendectomies which still remain around 20%<sup>(8)</sup>. This was comparable with study done by Khan MN et al<sup>(9)</sup> and Asfar S et al<sup>(10)</sup>. Intra-operatively position of appendix was noted. Out of total 100 patients 89% patient had retrocaecal appendix, 8 Patient had pelvic and 3 had sub-caecal appendix in position. In the present series the males outnumbered females, male-72 female 28. Pain was the commonest presenting symptom and has been observed in all the cases (100%) in the present series. The classical shifting of pain from umbilical region to RIF was seen in 100%.

Next common symptoms observed were nausea, vomiting in 85% and fever was present in 69% of cases. Anorexia was seen in 65% with Burning micturition was seen in 11%

On clinical examination, tenderness at McBurney’s point was the commonest sign (100%). Guarding was present in 70% of patients. Rebound tenderness was present in 64% of cases. Abdominal rigidity was in 70%. Rovsing’s sign was positive in 25%. This sign is seen whenever there is inflammation in the RIF. In the present study the TLC was increased in 70%, and it was within normal range in 30%. Out of 65 males, score of > 7-9 (Modified Alvarado score) were 52 and score of <7 (Modified Alvarado) were 13. Out of 35 female patients, 29 had score > 7-9 (positive), 6 had score <7(negative). The sensitivity of Modified Alvarado score >7 was 92. 8% and specificity was 81%. The sensitivity of Modified Alvarado score <7 was 80% and specificity of 35%. It was concluded that Modified Alvarado scoring system significantly reduces the rate of negative laparotomies. Out of 100 patient 5 patients developed wound infection and developed soakage and 2 developed paralytic ileus.

**Conclusion:**

At the end we continue to stress that history and clinical examination by a skilled surgeon still remain indispensable in diagnosing appendicular perforation and its importance cannot be undermined, all the above can be kept in diagnostic armamentarium of the surgeon to complement his clinical diagnosis.

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