

## OUTCOME OF EMERGENCY APPENDICECTOMY FOR APPENDICULAR MASS

FARHAN ZAHEER, JAHANZAIB HAIDER, TARIQ MAHMOOD KHAN

Department of Surgery, Dow University of Health Sciences & Civil Hospital, Karachi

Department of Surgery, Karachi Medical & Dental College & Abbasi Shaheed Hospital, Karachi

### ABSTRACT

**Objective:** To evaluate the outcomes of emergency appendicectomy for appendicular mass in terms of duration of hospital stay and postoperative complications.

**Study Design:** Descriptive case series.

**Setting & Duration:** Department of Surgery, unit II, Karachi Medical and Dental College and Abbasi Shaheed Hospital, Karachi from October 2006 to September 2007.

**Methodology:** Fifty patients with appendicular mass/abscess were selected and emergency appendicectomy was performed. Main outcome measures were length of hospital stay (in days) and postoperative complications. Complications were categorized into wound infection; wound hematoma; residual abscesses in peritoneal cavity and fecal fistula. The SPSS version 11 was applied to the data.

**Results:** The overall complication rate was 28% including (16%) wound infection, (6%) wound hematoma, (4%) residual abscesses and (2%) fecal fistula formation. Mean ( $\pm$  SD) duration of hospital stay was 4.96 ( $\pm$  4.89) days with the range of 3 to 35 days.

**Conclusion:** Emergency appendicectomy is safe and effective treatment modality in managing appendicular mass.

**KEY WORDS:** Appendicitis, Appendicular Mass, Emergency Appendicectomy

### INTRODUCTION

Acute appendicitis is the most common cause of acute abdomen and one of the surgical emergencies that require early surgery.<sup>1,2</sup> Delay in intervention can result in the development of generalized peritonitis or an appendicular mass.

Tumor formation is one of the fates after appendicitis.<sup>3</sup> Pathologically, it may represent a spectrum ranging from phlegmon to abscess. Phlegmon is an inflammatory mass consisting of the inflamed appendix, its adjacent viscera and the greater omentum whereas latter is pus containing appendicular mass.

Although the surgical management of acute appendicitis is widely acceptable, management of appendicular mass remains controversial and may be treated in several ways.<sup>3,4</sup> The standard treatment for an appendiceal mass is conservative therapy followed by appendicectomy after 6 to 10 weeks. Low morbidity, reduced hospital stay, low cost and patient compliance favor operative management of appendicular mass by experienced surgeons thus obviating the old practice of conservative treatment followed by interval appendicectomy.<sup>5</sup> The objective of this study is to evaluate the outcomes of emergency appendicectomy for appendicular mass in terms of duration of hospital stay and postoperative complications.

### METHODOLOGY

This prospective study was conducted at Department of Surgery, Unit II of Abbasi Shaheed Hospital, Karachi, from October 2006 to September 2007. Non-probability sampling technique was used. Patients having appendicular mass (diagnosed preoperatively by clinical

### Correspondence:

Dr. Jahanzaib Haider, Senior Registrar Unit VI,  
Dow University of Health Sciences &  
Civil Hospital, Karachi.

Phones: 92 (21) 9215740 – 9, 0333-2267824.

E-mail: jahanzaib\_dr@yahoo.com.

examination or peroperatively in anesthetized patients by palpation before surgical procedure where abdominal wall guarding influenced its existence) above 12 years of age, and gave written consent to participate in this study, were included. Exclusion criteria comprised of those who were unfit for surgery and in whom other pathologies were found peroperatively like ovarian cyst, ileocecal tuberculosis and carcinoma of cecum.

Exploration of abdomen was performed through right lower paramedian incision by senior residents/senior registrars. Adhesions were dissected out with extra care avoiding inadvertent damage to neighboring structures. Any pus found was aspirated and taken for culture and sensitivity. Depending on difficulty encountered, retrograde or antegrade appendicectomy was done using chromic catgut without invagination of appendicular stump. Mopping of peritoneal space (paracolic gutter and pelvis) was carried out and in all cases drain was placed in pelvis. Skin was approximated primarily. A proforma was used to document patient's demographics (age and gender), clinical presentations especially duration of appendicular mass (in days), operative time (in minutes) and peroperative findings. Outcomes of interest included length of hospital stay (in days) and postoperative complications. Complications were categorized into wound infection; wound hematoma; residual abscesses in peritoneal cavity and fecal fistula (i.e. discharge of intestinal contents either through drain and/or wound after disruption of appendix stump). The software program SPSS for Windows (Version 11, 2002, SPSS Inc., Chicago, IL, USA) was utilized for all statistical analyses. Mean  $\pm$  SD (standard deviation) was used to compute quantitative variables, whereas qualitative variables were expressed as percentages and frequencies.

## RESULTS

Out of the fifty patients studied, there were 31(62%) males and 19(38%) females. The male to female ratio was 1.6:1. The ages of the patients ranged from 12-64 years with mean ( $\pm$  SD) age as 33.26 ( $\pm$  13.01) years. Pain was a feature in almost all patients with mean ( $\pm$  SD) duration of appendicular mass was 2.38 ( $\pm$  1.43) days (2-7 days). Figure 1 indicates the rest of the clinical presentations. Peroperatively, 15(30%) patients had a feature of phlegmon whereas findings of appendicular abscesses were encountered in 35(70%) patients. The mean ( $\pm$  SD) operating time was 42.44 ( $\pm$  6.46) minutes. The overall complication rate was 28% (Table I). Wound infection was seen in 8(16%) patients that constituted major complication in this study. All were treated by dressing alone. One (2%) patient developed low output fecal fistula 9 days after appendicectomy. This was

treated conservatively and closed over a period of five weeks. Residual abscesses (4%) were managed by antibiotics and ultrasound guided drainage (where indicated). The average ( $\pm$  SD) duration of hospital stay was 4.96 ( $\pm$  4.89) days with the range of 3 to 35 days.

## DISCUSSION

In past, conservative management was considered to be safe and effective modality of treating appendicular mass.<sup>6,7</sup> With the advent of antibiotics designed to prevent the growth of anaerobes as well as availability of experienced surgeons, early appendicectomy can now be carried out without complications.<sup>8</sup> It not only cures the patient of the disease but also obviates the need for appendicectomy at a subsequent admission. Tumour formation is the end result of a walled-off appendiceal perforation and usually develops after 48 hours when inflamed appendix is surrounded by neighboring structures.<sup>9</sup> In this study, average duration of appendicular mass formation was 2.38 days (2-7 days). The result is analogous to the study conducted by Choudry.<sup>10</sup> Clinically, the clear distinction between appendicular mass and abscess is usually difficult and diagnosis is confirmed on exploration. Jordan<sup>11</sup> also previously mentioned this in their series. In this study, the mean operating time was 42.44 minutes. Khan and associates<sup>1</sup> noticed average operating time as 29.38 $\pm$ 3.19 minutes in their study of 1142 patients who underwent emergency appendicectomy for appendicular mass, which is nearly comparable to this study. Morbidity after early appendicectomy is the major issue of avoiding this treatment modality in cases of appendicular mass. The overall complication rate was 28% in this study. Ohene-Yeboah and Togbe<sup>12</sup> encountered 43.1% of complication rate in their series of 638 routine appendicectomy patients that is quite high as compared to this study. In the presenting study, wound infection (16%) comprised of major morbidity. All were managed conservatively by dressings alone. Taj and Qureshi<sup>3</sup> observed 18.75% of wound infection rates in their series. Arshad and colleagues<sup>13</sup> also noticed 19.31% of wound sepsis in their study. Wound hematoma and residual abscesses

**Table I. Post-operative complications**

Complications	No.	%
<b>Wound infection</b>	<b>8</b>	<b>16</b>
<b>Hematoma</b>	<b>3</b>	<b>6</b>
<b>Residual abscesses</b>	<b>2</b>	<b>4</b>
<b>Fecal fistula</b>	<b>1</b>	<b>2</b>
<b>Total</b>	<b>14</b>	<b>28</b>

were noticed in 6% and 4% of patients in this study. These are similar to results of Choudry.<sup>10</sup> Fecal fistula encountered in 2% of cases, managed conservatively and spontaneously closed within 5 weeks. Choudry<sup>10</sup> also encountered one case of postappendectomy fecal fistula in their series of fifty patients that also healed spontaneously within 4 weeks.

### CONCLUSION

Emergency appendectomy in presence of an appendicular mass is safe and effective treatment modality with the added benefit of returning the patient to a normal lifestyle sooner as compared to conventional management.

### REFERENCES

1. Khan A W, Sheikh S H, Rahman M A. Results of emergency appendectomy for appendicular mass. *Mymensingh Med Journ* 2007; 16:209-13.
2. De U, Ghosh S. Acute appendectomy for appendicular mass: a study of 87 patients. *Ceylon Med Journ* 2002; 47: 117-8.
3. Taj M H, Qureshi S A. Early surgical management of appendicular mass. *Journ Surg Pakistan* 2006; 11: 52-56.
4. Erdođan D, Karaman I, Narci A, Karaman A, Cavuđođlu Y H, Aslan M K. Comparison of two methods for the management for appendicular mass in children. *Pediatr Surg Int* 2005; 21: 81-83.
5. Ho C M, Chen Y, Lai H S, Lin W H, Hsu W M, Chen W J. Comparison of critical conservative treatment versus emergency operation in children with ruptured appendicitis with tumor formation. *Journ Formos Med Assoc* 2004; 103: 359-63.
6. Vargas H I, Averbook A, Stamos M J. Appendiceal mass: conservative therapy followed by interval laparoscopic appendectomy. *Am Surg* 1994; 60: 753-8.
7. Nitecki S, Assalia A, Schein M. Contemporary management of the appendiceal mass. *Br Journ Surg* 1993; 80: 18-20.
8. Marya S K, Garg P, Singh M, Gupta A K, Singh Y. Is a long delay necessary before appendectomy after appendiceal mass formation? A preliminary report. *Can Journ Surg* 1993; 36: 268-70.
9. Lai H W, Loong C C, Wu C W, Lui W Y. Watchful waiting versus interval appendectomy for patients who recovered from acute appendicitis with tumor formation: a cost-effectiveness analysis. *Journ Chin Med Assoc* 2005; 68: 431-34.
10. Choudry Z A, Khan S A, Ghazanfar A, Nasir S M, Ahmad W. Appendectomy for Appendicular Mass. *Ann King Edward Med Coll* 2001; 7: 150-51.
11. Jordan J S, Kovalcik P J, Schwab C W. Appendicitis with a palpable mass. *Ann Surg* 1981; 193: 227-9.
12. Ohene-Yeboah M, Togbe B. An audit of appendicitis and appendectomy in Kumasi, Ghana. *West Afr Journ Med* 2006; 25: 138-43.
13. Arshad M, Aziz L A, Qasim M, Talpur K A. Early appendectomy in appendicular mass-a Liaquat University Hospital experience. *Journ Ayub Med Coll Abbottabad* 2008; 20: 70-72.