A Study on Need of Emergency Laparascopic Appendicectomy for Appendiceal Masses

L. Manohar Reddy¹, Venkata Rama Bai², V. Vijaya Lakshmi³

¹Assistant Professor, Department of Surgery, Government General Hospital, Ananatapuram, Andhra Pradesh, ²Assistant Professor, Department of Surgery, Government General Hospital, Ananatapuram, Andhra Pradesh, ³Associate Professor, Department of Surgery, Government General Hospital, Ananatapuram, Andhra Pradesh, India

Corresponding author: Dr. V. Vijaya Lakshmi, Associate Professor, Department of Surgery, Government General Hospital, Ananatapuram, Andhra Pradesh, India.

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INTRODUCTION

Appendiceal mass management is a controversial; Immediate appendicectomy is taking a surge over traditional interval appendicectomy. This study was conducted with an aim to know the study various clinical presentations of appendiceal mass and to know the efficacy of surgery among patients presenting with appendiceal mass.

Material and Methods: This study is a prospective, clinical study conducted from June 2017 to September 2018 on 118 patients. After taking history and examination of study population, advised to undergo haematological & radiological investigations.

Results: 65.2% had simple mass, 17.7% showed adhesions, 10.1% showed perforated appendix and 6.7% showed loculated abscess. Intra operative difficulties faced were 20.3% difficulty in localization of appendix, 15.2% difficulty in adhesiolysis, 5.9% minor trauma to bowel, 1.6% minor bleeding and no intestinal perforations happened. Among Post operative complications observed, 16.9% patients had infection, 15.2% had delayed bowel recovery, 5.9% had faecal fistula.

Conclusion: For management of appendicular mass, emergency surgery helps to reduce large financial costs at healthcare centres and reduce economic burden on patients and their families.

Keywords: Appendicular Mass, Surgery, Appendicectomy
Exclusion criteria
Patients unfit for surgery
Patients with signs of diffuse peritonitis
Study population clinical history pertaining to age, sex, personal habits, family history, socioeconomic status, presenting complaints was recorded. After taking history, patient is examined for general physical examination and systemic examination.
Patients were advised to undergo preliminary haematological and urine investigations and Confirmation of diagnosis was done by clinical findings and radiological investigations. These patients were followed up by a variable period of time.

STATISTICAL ANALYSIS
This full data related to study subjects was entered into spread excel sheet. Results were analysed and tabulated. Statistical analyses were expressed as numbers, percentages.

RESULTS
In the present study, out of 118 patients with appendiceal mass, majority of them were observed in the age group of 21-30 years i.e., 49.1% (58/118), followed by 31-40 years of age i.e., 22.03% (26/118), <20 years of age i.e., 20.3% (24/118) and >40 years i.e., 8.4% (10/118). Out of 118 patients 76 (64.4%) were males and 42 (35.5%) were females.

All the patients presented with abdominal pain (100%), followed 87.2% had anorexia, 72.03% had nausea/vomiting, 46.6% had fever, 18.6% suffered with altered bowel habits and 2.5% complained of abdominal distension. On clinical assessment 100% patients had RIF tenderness, 64.4% showed rebound tenderness and 54.2% had palpable mass (Table 1). 65.2% had simple mass, 17.7% showed adhesions, 10.1% showed perforated appendix and 6.7% showed loculated abscess (Table 2 & Fig 1).

Intra operative difficulties faced were 20.3% difficulty in localization of appendix, 15.2% difficulty in adhesiolysis, 5.9% minor trauma to bowel, 1.6% minor bleeding and no intestinal perforations happened (Fig 2).
Among Post operative complications observed, 16.9% patients had infection, 15.2% had delayed bowel recovery, 5.9% had faecal fistula. No failure in treatment noted in these cases (Fig 3).

DISCUSSION
After acute attack of appendicitis, a tender mass form in the right iliac fossa on 3rd day. This mass is composed of greater omentum, edematous caecal wall, and edematous portions of small intestine. Mass becomes circumscribed on 4th or 5th day, as rigidity passes off its periphery it can be defined clearly. Between 5th to 10th day, the swelling becomes larger and can result in abscess collection. Slowly this mass becomes smaller and subsides as the inflammation resolves.7
Treatment of appendicular mass is controversial; however, there are several management options like non surgical treatment, interval appendicectomy, and emergency appendicectomy. Each management option has its own advantage and disadvantage. Successful Non surgical treatment of appendicular mass helpful to patient as there is no need to undergo surgical intervention; but it may hide true diagnosis in few cases and also the underlying diseases such as cancer or crohn’s disease may get delayed.8

Interval appendicectomy is a traditional method followed to avoid difficulties during operation due to inflammatory tissues; usually operative finding is normal status of appendix. The Disadvantages are need second admission, more complications, more morbidity and cause economic burden to patient.9,10
Immediate appendicectomy maybe technically little problematic due to distorted inflammed tissues, adhesions of adjacent viscera and difficulty in closure of damaged tissues; however, it is a safe, feasible, less complications and helps for final diagnosis.11,12

In the present study, out of 118 patients with appendicular mass, majority of them were observed in the age group of 21-30 years i.e., 49.1% (58/118). Out of 118 patients 76 (64.4%) were males and 42 (35.5%) were females. Bahram MA et al13 did a 4 year period randomized study, reported the mean age patient as 24±8.76. Bulent Kaya et al14 observed the mean age of patient is 37.23±15.60 and male predominance observed (53.2%). Al- Samarrai et al15 documented 68% of males had appendicular mass.
65.2% had simple mass, 17.7% showed adhesions, 10.1% showed perforated appendix and 6.7% showed loculated abscess.

| Symptoms                        | No. of patients | Percentage | Signs                  | No. of patients | Percentage |
|---------------------------------|-----------------|------------|------------------------|-----------------|------------|
| Abdominal Pain                  | 118             | 100%       | RIF tenderness         | 118             | 100%       |
| Nausea/Vomiting                 | 85              | 72.03%     | Rebound tenderness     | 76              | 64.4%      |
| Fever                           | 55              | 46.6%      | Palpable mass          | 64              | 54.2%      |
| Anorexia                        | 103             | 87.2%      |                        |                 |            |
| Altered bowel habits            | 22              | 18.6%      |                        |                 |            |
| Abdominal distension            | 3               | 2.5%       |                        |                 |            |

Table-1: Clinical features of patients with appendicular mass

| Findings                        | No. of patients | Percentage |
|---------------------------------|-----------------|------------|
| Simple mass                     | 77              | 65.2%      |
| Loculated abscess               | 8               | 6.7%       |
| Adhesions                       | 21              | 17.7%      |
| Perforated appendix             | 12              | 10.1%      |

Table-2: Findings during operation
abscess as per this study. In similar to this study, Malik Arshad et al.\textsuperscript{16} observed 72.7% had simple mass, 9.1% perforated appendix, 8% abscess, 5.7% adhesions. Shindholimath VV et al.\textsuperscript{17} noted 36.8% of perforated appendix, 31.5% appendicular abscess, 26.3% gangrenous appendix and 1 case of Loculated pus (5.2%). Whereas Samuel M et al.\textsuperscript{18} reported higher percentage of cases had abscess i.e., 79.2% and adhesions in 81.3%.

Among Post operative complications observed, 16.9% patients had infection, 15.2% had delayed bowel recovery, 5.9% had faecal fistula. No failure in treatment noted in these cases in this study. Malik Arshad et al.\textsuperscript{16} reported 21.6% post operative complications and Samuel M et al.\textsuperscript{19} reported no post operative complications. Zaza Demetrashvili et al.\textsuperscript{19} documented out of 48 patients with appendiceal mass and abscess only 4 patients had post operative complication due to infection.

Chin et al.\textsuperscript{20} mentioned that in their study they observed morbidity rate of 15.7% and they found laparoscopic appendicectomy is a safe and feasible study. Richards et al.\textsuperscript{21} did a study on perforated appendicitis, observed as laparoscopic study is a safe method with fewer complications, reduced hospital stay and lower hospital cost than open surgery. Shindholimath VV et al.\textsuperscript{17} did a study on laparoscopic study, stated that all appendiceal mass patients were treated successfully by laparoscopic surgery. In contrast to our study Valla et al.\textsuperscript{22} recommended open appendicectomy for appendiceal masses.

Bhumika Jayantilal Patel et al.\textsuperscript{23} stated that among interval appendicectomy patients average length of hospital stay was 11 days whereas in emergency surgery cases hospital stay was 4 days. Poor patient compliance, failure of treatment, residual collections/abscess, readmission and failure to locate appendix on delayed appendicectomy were problems faced in Interval appendicectomy.

Senapathi PS et al.\textsuperscript{14} opted laparasoscopic appendicectomy for 10 patients with appendicular mass and 50 patients with appendicitis. They didn't find any statistical difference in terms of operative time (median [interquartile range]: 45 [36-60] vs 40 [25-50] min, p = 0.085) and postoperative hospital stay (median [interquartile range]: 2 [1-2] vs [1-2] days, p = 0.1).

Goh BK et al.\textsuperscript{24} studied on 88 patients performed LA for 22 patients with appendiceal mass, 36 patients with simple appendicitis, 23 patients with other complicated appendicitis and 7 patients with normal appendix. Patients who underwent early LA for an appendicular mass had a statistically significant (P < .05) with regards to longer operating time (median, 103 minutes; interquartile range, 90-151 minutes, vs median, 87 minutes; interquartile range, 71-112 minutes), prolonged time to ambulation (median, 2.0 days; interquartile range, 2-2.5 days, vs median, 1.0 days; interquartile, 1-2 days), increased time to resumption of diet (median, 4 days; interquartile, 3-5 days, vs median, 2 days; interquartile, 2-3 days), and longer postoperative stay (median, 6.0 days; interquartile, 5.5-6.5 days, vs median, 4.0 days; interquartile, 3-5.5 days) compared with patients presenting with appendicitis without mass formation.

Zaza Demetrashvili et al.\textsuperscript{19} did a comparative study of emergency appendicectomy and interval appendicectomy on patients with appendicular mass and abscess. They have observed there is no statistical difference of both groups in terms of operation time without colonic resections, postoperative complications and the post operative hospitalization period. The only parameter found statistically reliable between two groups was operation time with colonic resections (P=0.04).

Garg P et al.\textsuperscript{25} stated that there is chance of mismanagement conservatively, may miss diagnosis of certain conditions like intussusceptions and carcinoma ceacum.

Most of the studies concluded that immediate appendicectomy and interval appendicectomy have shown the same results, statistically there is no much difference. Selection of procedure depends on clinical situation,
investigation related. In each particular case therapeutic approach is different.

CONCLUSION

For management of appendicular mass, emergency surgery helps to reduce large financial costs at healthcare centres and reduce economic burden on patients and their families. Emergency surgery is a safe, feasible method. CT scan is a useful method to diagnose this condition. Immediate appendicectomy helps to rule out other diagnoses, alleviates needs for readmission, time saving, shortens hospital stay.

REFERENCES

1. Jordan JS, Kovalcik PJ, Schwab CW. Appendicitis with a palpable mass. Ann Surg; 1981; 193(5):227–9.
2. Yamini D, Vargas H, Bongard F, Klein S, Stamos MJ. Perforated appendicitis: is it truly a surgical urgency? Am Surg. 1998;64(2):970–975.
3. Erdogan D, Karaman I, Neci A, Karaman A, Cavusoglu YH, Aslan MK, et al. Comparison of two methods for the management of appendicular mass in children. PediatrSurg Int. 2005; 21(2):81–3.
4. Kaya B, Sana B, Eriş C, Kutanis R. Immediate appendectomy for appendicular mass. Ulus Travma Acil Cerrahi Derg 2012;18(6):71–4.
5. Garg P, Dass BK, Bansal AR, Chitkara N. Comparative evaluation of conservative management versus early surgical intervention in appendicular mass—a clinical study. J Indian Med Assoc 1997;95(1):179–80, 196.
6. Shindolimath VV, Thakuran K, Rao TN, Veerappa YV. Laparoscopic management of appendicular mass. J Minim Access Surg 2011;7(4):136–40.
7. Karaca I, Atintoprak Z, Karkinler A, Temir G, Mir E. The management of appendicular mass in children, is interval appendicectomy necessary? Surg Today, 2001; 31(8):675–7.
8. Andersson RE, Petzold MG. Nonsurgical treatment of appendiceal abscess or phlegmon: a systematic review and meta-analysis. Ann Surg. 2007;246(1):741–748.
9. Verwaal VJ, Wobbes T, Goris RJ. Is there still a place for interval appendectomy? Dig Surg. 1993;10(5):285–288.
10. Corfield L. Interval appendicectomy after appendicular mass or abscess in adults: what is “best practice”? Surg Today. 2007;37(3):1–4.
11. Yamini D, Vargas H, Bongard F, Klein S, Stamos MJ. Perforated appendicitis: is it truly a surgical urgency? Am Surg. 1998;64:970–975.
12. Tingstedt B, Bexe-Lindskog E, Ekelund M, Andersson R. Management of appendiceal masses. Eur J Surg. 2002;168(3):579–582.
13. Bahram MA. Evaluation of early surgical management of complicated appendicitis by appendicectomy mass. Int J Surg. 2011; 9(1):101–3.
14. Bulent Kaya, Baris Sana, Cengiz Eris, Riza Kutanis. Immediate appendectomy for appendicular mass. Ulus Travma Acil Cerrahi Derg 2012; 18 (1):71–74.
15. Al - Samarral A. Surgery for appendicular mass. Saudi J Gastroenterol. 1995;1:43–6.
16. Malik Arshad, Laghari A. Aziz, Mallah Qasim, K. Altaf Hussain. Talpur Early appendicectomy in appendicular mass - a Liaquat university hospital experience J Ayub Med Coll Abbottabad 2008;20(1).
17. Shindolimath VV, Thakuran K, Narayana Rao T and Veerappa YV. Laparoscopic management of appendicular mass. J Minim Access Surg. 2011; 7(2):136–140.
18. Samuel M, Hosie G, Holmes K. Prospective evaluation of nonsurgical versus surgical management of appendicular mass. J Pediatr Surg. 2002;37(6):882–6.
19. Zaza Demetrasvili, Giorgi Kencadzhe, Iradi Pipia, Eka Elakadze and George Kamkamidze. Management of Appendicel Mass and Abscess – An 11 year experience. Int Surg. 2015;100(6):1021–1025.
20. Chin CY, Shil C, Chun YC. Laparoscopic appendectomy for ruptured appendicitis. Surg Laparosc Endosc. 1999;3(2):271–5.
21. Richards KF, Fisher KS, Flores JH, Christensen BJ. Laparoscopic appendectomy: Comparison with open appendectomy in 720 cases. Surg Laparosc Endosc. 1996;6(1):205–9.
22. Valla JS, Steyaert H, Alain LJ. Management of appendicular peritonitis in children: Traditional surgery vs. laparoscopy. Retrospective comparative study of pediatric video surgery group. Int J. Pediatr Surg Sci. 1996;10(4):13–6.
23. Bhumika Jayantilal Patel, Kalpesh Himatlal Patel. A comparative study of appendicular lump management. 2015;2(2).
24. Senapathi PS, Bhattacharya D, Amori BJ. Early laparoscopic appendectomy for appendicular mass. Surg Endosc. 2002; 16(12):1783–5.
25. Goh BK, Chui CH, Yap TL, Low Y, Lama TK, Alkouder G, Prasad S, Jacobsen AS. Is early laparoscopic appendectomy feasible in children with acute appendicitis presenting with an appendicular mass? A prospective study. J Pediatr Surg. 2005;40(7):1134–7.
26. Garg P, Dass BK, Bansal AR, Chitkara N. Comparative evaluation of conservative management versus early surgical intervention in appendicular mass—a clinical study. Indian Med Assoc.1997; 95(6):179–80.