Early Surgical Management of Appendicular Mass: A Retrospective Analysis

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Abstract

Introduction: For decades the management of appendicular mass has been of initial conservative treatment followed by interval appendectomy. Early surgical intervention is an effective alternative to the conservative management. In our hospital, we follow early surgical management, usually laparoscopic appendectomy for all the cases of appendicular mass, laparotomy and procedure if the same cannot be done laparoscopically. By doing so, there is no need of the second admission. The purpose of our study is to do the retrospective analysis and assess the outcome of early surgical management in appendicular mass.

Materials and Methods: A retrospective analysis was performed for all the patients who were treated laparoscopically for appendicitis and appendicular mass. A total of 45 patients were treated for appendicitis from September 2015 to October 2016. A retrospective review of these patients demonstrated that 14 patients had appendicular mass in which 11 cases were managed laparoscopically, and 3 were converted to open. Postoperatively, all the patients were recovered satisfactorily with no significant morbidities noted. Masses which were not inflammatory or due to neoplasms were not included in this study.

Results: A total of 45 patients were treated for appendicitis from September 2015 to October 2016. A retrospective review of these patients demonstrated that 14 patients had appendicular mass in which 11 cases were managed laparoscopically and 3 were converted to open. The ages of the patient were in the range of 12-67 years. 9 patients were male and 5 patients were female. The average operative time was 1 h 40 min. The length of hospital stay was in the range of 6-8 days. No morbidities were noted.

Conclusion: The results of our study suggests that early surgical management in the form of laparoscopic appendectomy is safe and feasible for the patient with appendicular mass as it not only reduces the hospital stay but also eliminates the need of the second admission.

Key words: Appendicitis, Appendicular mass, Early laparoscopic surgery

INTRODUCTION

Acute appendicitis is the most common surgical pathology which a surgeon notices in his daily practice. For decades open appendectomy was the standard treatment for all forms of appendicitis.¹ In today’s era laparoscopic appendectomy is the treatment of choice for appendicitis.²

Laparoscopic appendectomy was first performed by Semm in 1983 and initially was performed incidental to other pelvic procedures.³ As the operative techniques were refined, the indications were extended to patients with suspected appendicitis.⁴,⁵

Laparoscopic appendectomies have reported minimal morbidity and a shortened recovery period which demonstrates its superiority over open procedures.

Appendicular mass is usually seen in patients presenting late to the hospital in the course of appendicitis. The initial conservative management followed by interval appendectomy was the traditional approach for the treatment of appendicular mass. With recent advances in
minimally invasive surgical procedures, the management of appendicular masses has seen a tilt towards early surgical intervention.\textsuperscript{6,7}

Early surgical management in the form of laproscopic appendectomy is an effective alternative to the conventional conservative management as it not only confirms the diagnosis and in a single go offers complete treatment in a single sitting thereby eliminating the need of the second admission.\textsuperscript{8}

In our set up, lot of patients belong to the poor socio-economic background where the follow-up of the patient is always difficult and once the symptoms subsides many patients do not turn up for the interval appendectomy. In such scenario, early surgical management is always better as it is cost effective, reduces the hospital stay and eliminates the need of the second admission.

**MATERIALS AND METHODS**

A retrospective analysis was performed for all the patients who were treated for appendicitis and appendicular mass from September 2015 to September 2016 in SIII unit, Department of General Surgery, St. Martha’s Hospital, Bengaluru (Table 1). A total of 45 patients were treated for appendicitis and a retrospective review of these patients demonstrated that 14 patients had appendicular mass in which 11 cases were managed laproscopically and 3 were converted to open. The ages of the patient were in the range of 12-67 years, 9 patients were male and 5 patients were female. All the patients at the time of admission presented with fever, pain abdomen and mass in right iliac fossa. All the patients had leukocytosis (>11000/mm\textsuperscript{3}) (Table 2).

11 patients underwent laproscopic appendectomy, and 3 patients were converted to open appendectomy (Table 3). The reason for conversion was dense interbowel loops adhesions due to which the appendix could not be localized. In two cases there was perforation of the base of the appendix with interbowel adhesions and abscess formation. The average operative time 1 h 40 min. The length of the hospital stay was in the range of 6-8 days. Peroperative findings were listed in Table 4. Intraoperatively, there were no complications.

Postoperatively, all the patients recovered well. No morbidities were noted.

**RESULTS**

A total of 14 cases of appendicular mass were treated from September 2015 to September 2016. All the patients were managed by early surgical intervention. The ages of the patients were in the range of 12-67 years. 9 patients were male and 5 patients were female. All the patients at the time of admission presented with fever, pain abdomen and mass in right iliac fossa. All the patients had leukocytosis (>11000/mm\textsuperscript{3}) (Table 2).

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Postoperatively, all the patients recovered well. No morbidities were noted.
**DISCUSSION**

The management of patients with appendicular mass is controversial. The controversies exist regarding conservative management, surgical management, duration of antibiotic therapy, drain usage and skin closure. Recently, performing laparoscopic appendectomy for appendicular mass has been added to the list of controversies.

Appendicular mass develops in 2-6% of cases following acute appendicitis. Pathologically, this may represent a spectrum ranging from phlegmon to abscess. It is always difficult to distinguish between the appendicular mass and appendicular abscess.

Immediate appendectomy has the advantages of being safe, cost effective, eliminates the risk of recurrent appendicitis and thereby the need of the second admission for the interval appendectomy. In our study, all the patients underwent an immediate appendectomy.

Jordan et al., in 1974-1979 performed 42 open appendectomies in palpable masses and recommended early surgery in patients with appendicular mass. However, he also reported that it has a high complication rate (36%), almost comparable to that for perforated appendicitis. It may also lead to dissemination of infection and fistula formation. In this study, all the cases of appendicular mass underwent early surgical intervention, and we did not come across any such complication.

Nonoperative management has been proposed for the management of patients with localized abscess formation due to perforated appendicitis. Antibiotic therapy is successful in about 93% of these patients; in about 20% of them, image guided percutaneous drainage of the abscess will eventually be required. In our study, 5 patients had appendicular abscess in which laparoscopic appendectomy and pus drainage was done. Postoperatively, patient did not have any complication and was discharged satisfactorily.

The average length of hospital stay in conservative approach is a little more compared to one time early surgical approach, with a further second admission required for interval appendectomy. The length of hospital stay in our study was 6-8 days.

Horwitz et al., and others have reported increased risk of post-operative intraabdominal abscesses in laparoscopically approached complicated appendicitis. In our study, none of our patients developed such complications. In all the cases, collection in the peritoneal cavity was aspirated and a through saline wash was given followed by drain in situ.

Valla et al., suggested open approach in appendicular masses. In our study, out of 14 cases 11 were treated laparoscopically and 3 were converted to open due to dense adhesions. Hence, we suggest laparoscopic approach is more safe and feasible for the patients with appendicular mass.

Richards et al., reported that laparoscopic appendectomy resulted in less complications, a shorter hospital stay, and cost-effective compared to open appendectomy in patients with perforated appendicitis.

Tirabassi et al., reported a high conversion rate (36%) after laparoscopic operation for perforated appendicitis. We had 6% of conversion rate in our study. The reasons for conversion was dense inter bowel adhesions due to which the appendix was not localized.

The laparoscopic approach has lot of advantages in cases with complicated appendicitis. It allows the surgeon to have a panoramic view of the abdominal cavity, easy accessibility, and feasibility to give a thorough peritoneal lavage in compare with the open cases where atypical localization of the appendix may require an extension of the incision. Furthermore, laparoscopic approach allows the patient early mobility, less pain and less hospital stay compare to open cases.

**CONCLUSION**

Early surgical intervention in the form of laparoscopic appendectomy in cases of appendicular mass is safe and feasible option.

**REFERENCES**

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Source of Support: Nil, Conflict of Interest: None declared.