



EARLY SURGICAL INTERVENTION IN APPENDICULAR LUMP – A RETROSPECTIVE REVIEW

General Surgery

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ABSTRACT

BACKGROUND: Appendicular lump is usually encountered when the treatment of acute appendicitis is delayed; its formation is attributed to the protective mechanism of the body to localize the infection. The traditional treatment of this appendicular lump is conservative followed by appendicectomy after 4-6 weeks. But this may not be always successful as a considerable number of patients may fail to respond to conservative treatment. Also there is always a chance for missing some hidden pathology. Moreover many patients fail to turn up for appendicectomy later. So our aim is to do early appendicectomy and assess the outcome.

MATERIALS AND METHODS: Early appendicectomy was performed in 41 patients and the outcomes were reviewed retrospectively. Operations were performed within 36 hours of their admission by open technique. Intra-operative findings including any difficulty encountered during surgery were recorded. Findings of post operative period like any complications occurred were recorded.

RESULTS: An appendicular lump was encountered in all 41 patients. In 6 patients there were localized pus collection and in 4 patients, gangrene of the base of the appendix. The McBurney's incision has to be extended in 9 patients due to difficulty encountered. There were no major bowel injury in the study. The appendix could be removed successfully in all the 41 patients. The average duration of hospital stay was 5-6 days.

CONCLUSION: Early appendicectomy in appendicular lump can easily and safely be performed. It not only shortens the duration of hospital stay but also eliminates the need for a second admission.

KEYWORDS

Appendicitis, Appendicular lump, Early Surgical intervention

INTRODUCTION

Acute appendicitis is a very common surgical condition for which a patient has to come to the hospital for treatment. The mode of treatment of such a patient is appendicectomy which has to be performed as early as possible. If the treatment is delayed an appendicular lump may be formed, a condition seen in 2% - 6% of patients.^{1,2} It is the defensive mechanism of our body to localize the infection inside the peritoneal cavity.

The treatment of appendicular lump is conservative, which is followed traditionally for ages. In conservative management the patient is given IV fluids, nasogastric suction tubes, broad-spectrum antibiotics etc, and after 4-8 weeks when the lump is resolved, an elective appendicectomy is performed.

It is often seen that during the conservative management in up to 10% of cases, the lump fails to resolve.³ There is formation of appendicular abscess or even development of gangrene or perforation, for which emergency surgery has to be performed.⁴

So, early appendicectomy in patients with appendicular lump cures the problem in the first hospital admission itself. The duration of hospital stay becomes shorter and overall expenditure of the treatment is also reduced. The period of recovery from the illness is much less with satisfactory outcome.

MATERIALS AND METHODS

The records of 41 patients with appendicular lump admitted in Unit I and IV of the department of surgery of Tezpur Medical College who were operated with early appendicectomy from January 2015 to December 2018 were reviewed. The appendicular lumps were diagnosed by a thorough history, clinical examination, ultrasonography, in a few cases with CT scan abdomen, or accidentally detected after anaesthesia and surgical exploration for acute appendicitis.

Age and sex of the patients, duration of the symptoms and physical examination findings were recorded.

Operations were performed within 36 hours of their admission after obtaining all the required investigations. Informed consent was taken from all patients before the surgery.

In our study all the operations were performed by open method. Patients who are not fit for surgery, patients with signs of diffuse

peritonitis and patients with associated pregnancy were not included in our study.

McBurney's incision was used in our cases with extension of the incision when difficulty encountered. The diagnosis of appendicular lump was confirmed when an inflammatory mass encountered in right iliac fossa. A careful dissection was performed to release the appendix from the adherent structures mostly using blunt and non traumatic methods. If pus encountered, a thorough irrigation of the area was done.

Intra-operative findings including any difficulty encountered during surgery, amount of blood loss, time taken for the surgery, use of intra abdominal drains etc were recorded in the pre-formed proforma. Post operative findings like any discomfort faced by the patient or any complications occurred were also recorded.

Patient's duration of stay in the hospital were recorded. After discharge patients were followed up after one week and four weeks time.

RESULTS

Out of 41 patients with appendicular lump that were operated with early appendicectomy, 24 were male and 17 were female, their ages ranged from 10 to 50 years with a mean of 30 years. Male preponderance is observed in the study group with male to female ratio of 1.8:1.

The predominant symptoms were pain in right lower abdomen in all the 41 patients (100%), nausea and vomiting in 29 (70.7%) cases and fever in 11 (26.8%) cases. Leucocytosis ($>11000/\text{cu mm}$) observed in 12 (29.3%) patients.

In 37 patients diagnosis were made preoperatively, while in 2 patients the lump was diagnosed after anaesthetisation of the patient when the abdominal muscles become toneless. In another 2 patients appendicular lumps were accidentally detected after opening the abdomen for acute appendicitis.

In our study all the patients were operated by open method. A McBurney's incision was made in all the cases. The average operating time was 70 minutes, which ranged from 35-110 minutes. In two cases, the operating time extends beyond 100 minutes.

INTRA-OPERATIVE FINDINGS

Appendicular mass were encountered in all 41 patients, formed with

neighbouring bowel loops and omentum. Localised pus collection seen in 6 (14.6%) patients. Gangrene of the base of the appendix with impending perforation encountered in 4 (9.6%) patients.

INTRA-OPERATIVE DIFFICULTY

The incision have to be extended (Rutherford Morrison extension) in 9(21.9%) patients with cutting of the muscles due to difficulty in localisation of the appendix and presence of firm adhesions. Adhesiolysis were performed very gently with blunt dissection in all the cases. Firm adhesions were encountered in 6(14.6%). During adhesiolysis, a serosal tear occurred to the caecum and small bowel in 3(7.3%) patients which were repaired conveniently. Mild intra operative bleeding occurred in 4(9.6%) patients which could be controlled without much difficulty. An abdominal drain was kept in 8(19.5%) patients to be on the safer side and could be removed in 2-3days.

Table 1: Intra Operative findings

Findings	Number of cases	Percentage (%)
Inflammatory mass with adhesions	41	100
Localized abscess	6	14.6
Gangrene & Impending perforation	4	9.7

Table 2: Intra Operative difficulty/Problem

Difficulty/Problem	Number Of cases	Percentage (%)
Firm adhesions causing difficulty	6	14.6
Difficulty in localization of the appendix	7	17
Serosal tear of the bowel	3	7.3
Minor bleeding	4	9.7

Post operative period

In our study, post operative wound infection was encountered in 5(12.2%) patients. Paralytic ileus with mild to moderate abdominal distension encountered in 4(9.6%) patients, recovered within 2 days following nasogastric aspiration.

The average duration of hospital stay in our study was 5-6days, the shortest being 3days in 2 patients, but in 4 patients it extends upto 7-9 days due to post operative infections.

Table3: Duration of hospital stay

Duration	Number of cases	Percentage (%)
3 - 4 days	6	14.6
5 – 6 days	31	75.6
≥ 7 days	4	9.7

DISCUSSION

Appendicular lump usually forms after 48-72 hours following an attack of acute appendicitis.⁵ It is a protective mechanism of the body where the neighbouring omentum, caecum, terminal ileum, mesoappendix and sometimes sigmoid loops and right fallopian tubes in female wrap around the inflamed appendix forming a mass thus preventing the spread of infection.^{6,7}

Patients are usually presented with fever, nausea and vomiting, leukocytosis, lower abdominal pain and a mass in right lower abdomen. In some situations like in obese patients and with considerable muscle rigidity, the mass may be missed initially but ultrasonography or CT scan may help to confirm its presence.

Although the initial conservative management of appendicular lump followed by interval appendicectomy after 6-8 wks is an established form of treatment⁸, it is found to be not always successful. A considerable number of patients are estimated to have failed to respond to the conservative management and requires emergency appendicectomy.⁹ Those surgeons who recommend early appendicectomy in appendicular lump, think that it will avoid misdiagnosis like missing a hidden pathology, and also a more difficult appendicectomy when the conservative management fails after repeated hospital admissions. Many studies found this early appendicectomy approach as a safe and harmless procedure.¹⁰

Early appendicectomy cures the patient on their first admission itself thus reducing the total number of days of hospital stay. It also reduces the total cost of the treatment significantly.

In our study the commonest age group is 21-30years as 19(46.3%) out of 41 patients fall in this group. However the age varied from 10 to 50 years suggesting that any age group of patients may be affected. Out of 41 patients we have 24 male and 17 female patients and the male to female ratio of 1.8:1 which is comparable to other studies.^{11,12}

In 60% of cases in our study who presented with a lump had symptoms for 3-4 days. But in some of the cases they even presented after 6-7days.

Per operatively in our study we encountered an appendicular mass in all the 41 cases which was formed by the omentum and neighbouring bowels. During adhesiolysis localized pus collection was seen in 6(14.6%) patients and gangrene of the base of the appendix with impending perforation in 4(9.6%) cases. Our findings are comparable with the findings of William R et al.¹³

In our study average operating time is 70 minutes. In 2(4.8%) patients the operating time extends beyond 100minutes due to difficulty in localization of the appendix. According to Malik et al, the operating time and the hospital stay is much shorter in the early appendicectomy group than the conservative group followed by interval appendicectomy.¹⁴ Okune et al in their study recorded operating time of 50 minutes on an average. No bowel injury or faecal fistula occurred in their study.¹⁵ Okune et al also found lower incidence of wound infection in the conservative group followed by appendicectomy but they recorded two cases of misdiagnosis - one a carcinoid tumour of appendix and another a mucinous adenocarcinoma.

Kumar et al in their study found that there is higher incidence of adhesions which required extension of incision in early appendicectomy with a lump.¹⁶ In our study we had to extend our incision in 9 of the cases (21.9%) due to adhesions and difficulty in localization of the appendix.

According to Jordan et al¹ who performed early appendicectomy in 42 patients of appendicular lump from 1974 to 1979, early intervention is recommended. But he also reported a high complication rate of 36% in his study and said that it may lead to spreading of infection and fistula formation. In our study we didn't encounter any significant complications, probably due to improved surgical equipments and suture materials. Serosal tear of the intestine occurred in 3(7.3%) case in our study which could be repaired without difficulty. Major complications like faecal fistula or major bleeding were not detected.

In a study by Cunnigaiper et al¹⁷ also, in 114 numbers of cases they operated with early appendicectomy there were no significant complications.

Wound infection is a major problem following any surgery in an inflamed and infected field. We encountered wound infection in 5(12.2%) of our cases. Arshad et al in their study reported wound infection in 19.3% of cases after early appendicectomy.⁷

We encountered paralytic Ileus in 4(9.6%) of our patients which is comparable with the findings of Bulent k et al in their study.¹⁸

We put a drain in 8(19.5%) of our patients for safety concern in the difficult cases which we could remove in 2nd to 3rd post operative day.

In our study the average hospital stay was 5-6days which is significantly shorter than seen in the conservative group, with the necessity of a second admission for interval appendicectomy. Our data is comparable to the studies of Puri P et al and Vakili C et al.^{19,20}

CONCLUSION

Now a days appendicectomy in appendicular lump has become easier and safer because of the availability of improved anaesthesia, better antibiotics and improved post operative care. It involves a lesser period of overall hospital stay, low cost of treatment without any possibility of major additional complications.

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