International Journal of Medical Research Professionals

Original Article

Prospective Study on Surgical Management of Appendicitis and Its Associated Complications

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Article History
Received: 06 Feb 2016
Revised: 03 Mar 2016
Accepted: 28 Mar 2016

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ABSTRACT

Background: Every year 250,000 appendectomies are done in United States. Every one in 15 persons has the tendency to develop appendicitis during his lifetime. There has been a reduction in the morbidity and mortality associated with appendicitis in the 20th century due to better availability of healthcare facilities. The aim of present study is to prospectively analyze the surgical outcome of appendicitis and its associated complications.

Materials and Methods: This prospective study was done in Department of General Surgery Mata Gujri Memorial Medical College, Kishanganj, Bihar, India. The study was conducted from January 2015 to December 2015. This one year of study was approved by the Institute's ethical board. Detailed histories of all the patients were obtained and complete blood examination of all the patients were done. Patients were kept fasting and intravenous antibiotics were instituted. Patients with complications of acute appendicitis were diagnosed and managed. Initially conservative treatment by triple antibiotic regimen was instituted. Analgesics were given to relief pain. All the data was tabulated and analyzed by SPSS software. Percentage of the data was calculated.

Results: In this study a total of 175 subjects were enrolled. There were 126 males (72%) and 49 females (28%). The mean age group of females 32.19+/-9.38 years and mean age of males was 41.27+/-3.14 years. Appendicular mass was seen in 10.28% cases (n=18).

Conclusion: Acute appendicitis is a commonly occurring clinical entity that requires immediate management. There are two types of surgical protocols: - open appendectomy and laparoscopic appendectomy. Open appendectomy is the preferred treatment of choice. Appendicular mass was the most common complication with the incidence of 10.28%.

KEYWORDS: Antibiotics**,** Appendicular, Complications, Laparoscopy**.**

INTRODUCTION

Appendicitis is the most common acute abdominal condition and the most common cause of abdominal surgery.[1,2] Every year 250,000 appendectomies are done in United States. Every one in 15 persons has the tendency to develop appendicitis during his lifetime.[3] It has been estimated that 7-10% of the population develops appendicitis especially during second and third decade of life.[4] Open appendectomy is generally performed for all the cases of acute appendicitis but nowadays laparoscopic approach has gained recent popularity.[5] The first laparoscopic appendectomy was done by Semm in the year 1982.[2]

There has been a reduction in the morbidity and mortality associated with appendicitis in the 20th century due to better availability of healthcare facilities.[6] With the advent of better diagnostic and management techniques, the mortality associated with appendicitis has been reduced to less than 1%.[7] Various advantages offered by laparoscopic appendectomy includes less pain, reduced incidence of post-operative infection and decreased duration of hospital stay.[8,9] Some of the studies have shown that laparoscopic techniques offer a better clinical outcome[10,11] while others show that there are marginal or no significant clinical advantages.[12]

The aim of present study is to prospectively analyze the surgical outcome of appendicitis and its associated complications.

MATERIALS AND METHODS

This prospective study was done in Department of General Surgery Mata Gujri Memorial Medical College, Kishanganj, Bihar, India. The study was conducted from January 2015 to December 2015. This one year of study was approved by the Institute's ethical board. Detailed history of all the patients were obtained and complete blood examination of all the patients were done. Every patient was informed about the study in their vernacular language and a written informed consent was obtained from all. Radiological diagnosis was confirmed by ultrasound of abdomen.

Patients were kept fasting and intravenous antibiotics were instituted. Patients with complications of acute appendicitis were diagnosed and managed. Initially conservative treatment by triple antibiotic regimen was instituted. Analgesics were given to relief pain. Vitals of all the patients were managed closely and patients were reassessed for any tenderness. Patients with systemic conditions were excluded from the study.

All the data was tabulated and analyzed by SPSS software. Percentage of the data was calculated.

Table 1: Complications of acute appendicitis

COMPLICATIONS	FREQUENCY	PERCENTAGE
Appendicular mass	18	10.28
Gangrenous appendix	10	5.71
Appendicular peritonitis	6	3.42
Appendicular abscess	5	2.85
Laparotomy	5	2.85

Table 2: Management of acute appendicitis

MANAGEMENT	FREQUENCY	PERCENTAGE
Conservative	21	12
Open Appendicectomy	149	85.7
Exploratory laparotomy	5	2.2

RESULTS

In this study a total of 175 subjects were enrolled during a period of February, 2014- February, 2015. There were 126 males (72%) and 49 females (28%). The mean age group of females 32.19+/-9.38 years and mean age of males was 41.27+/-3.14 years.

Table 1 denotes the complications encountered in appendicitis. Appendicular mass was seen in 10.28% cases (n=18). The next common complication was Gangrenous appendix which was seen in 10 cases (5.71%). Appendicular abscess was seen in 5 cases (2.85%) and appendicular peritonitis was seen in 6 cases (3.42%). There were 5 cases of laparotomy (2.85%).

Table 2 denotes the management strategies in patients of appendicitis. There were 12% patients (n=21) who were managed conservatively by triple antibiotic regimen. 5 patients of perforated peritoneum underwent exploratory laparotomy. Majority of patients (85.7%) underwent open appendectomy. All the patients showed uneventful recovery and were discharged.

DISCUSSION

Appendix is a tube like structure that originates from the posteromedial wall of the caecum, 2cm inferior to ileum. It was first described by a physician-anatomist, Berengario Da Capri.[13] Later on Mc Burney gave a point of maximum tenderness in acute appendicitis and this came to be known as Mc Burney point. Acute appendicitis is a clinical condition in which mostly surgical treatment is performed immediately after acute attack. If any delay is there, then the condition may get complicated and there is increase in morbidity.[14]

There have been 20 years since first laparoscopic appendectomy was performed but till now open appendectomy is considered as gold standard for the treatment of appendicitis. Diagnosis of appendicitis is made clinically by the use of Alvarado score and Ultrasound.[13] In cases of any doubt; CT scan is the diagnostic aid of choice. In a recent study reviewing open and laparoscopic appendectomy concluded that both of them are effective and a safe treatment choice for management of appendicitis.[15]

According to our present study, the various complications of appendicitis include 10.28% cases of appendicular mass, 5.71% cases of gangrenous appendix, 3.42% cases of appendicular peritonitis and 2.85% cases of appendicular abscess. There were 12% cases which were managed conservatively. There were 85.7% cases of open appendectomy. Exploratory laparotomy was done in 2.2% cases. In a study by Amit Kumar et al[16], acute appendicitis was the most common

presentation and there were 47.83% cases that showed complications. Surgical intervention was done in 86.96% cases. Some of the common complications are wound infection, intra-abdominal mass and paralytic ileus. The incidence of wound infection varies from 5 to 20%.[17] In a study by Amit Kumar et al[16], wound infection was seen in 8.7% cases.

CONCLUSION

Acute appendicitis is a commonly occurring clinical entity that requires immediate management. There are two types of surgical protocols: open appendectomy and laparocopic appendectomy. Open appendectomy is the preferred treatment of choice. Appendicular mass was the most common complication with the incidence of 10.28%.

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Source of Support: Nil.

Conflict of Interest: None Declared.

Cite this article as: Ravindra Kumar Choudhary. Prospective Study on Surgical Management of Appendicitis and Its Associated Complications. Int J Med Res Prof. 2016, 2(2); 336-38.