

Outcomes of Laparoscopic Appendectomy in Eastern Region of Nepal

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ABSTRACT

Introduction: Acute Appendicitis is the most common intraabdominal condition which requires emergency surgical treatment.

Possibility of appendicitis should be ruled out in any patient presenting acute abdomen symptoms, and a sure preoperative diagnosis is still a challenging task.

There are two ways to perform appendectomy.

1. Laparoscopic Appendectomy and 2. Open Appendectomy.

Recently laparoscopic appendectomy has been gaining popularity in place of open appendectomy procedure. Appendectomy is a frequent surgical procedure. All surgical procedure has their own long term and short term potential complications. The main short term complications of appendectomy such as infections and intra-abdominal abscesses.

Additionally, it's also important to assess the risk of long term complications for abdominal procedures such as ileum and incisional hernia. Finally, mortality is also a complication of surgery. Appendix is a part of digestive tract, but exact function of appendix is yet to be known. Appendix may be associated with immunological function in intestine.

Material and method: Total number of cases undergone LA are 62.

Methods: we completed a retrospective chart review of all patients undergoing LA for a clinical presentation of acute appendicitis from 2018 to 2020.

Exclusion criteria included incidental appendectomy, appendectomy of less than 16 age group. All procedure is done in our hospital. Hospital charts were reviewed and all data collected and entered in to standardized data collection forms. We randomly choose 62 patients (30 female patients, 32 male patients)

Results: Length of stay in hospital

25 patients=2 days 40%

20 patients=3 days 32%

12 patients=4 days 19%

3 patients=5 day 4.8%

1 patient=6 days 1.6%

1 patient=8 days 1.6%

Post-operative Complications were identified in 14 patients

Wound infection: 9 cases (out of 14 cases, 9 patients with post-operative wound infection). Out of these 9 patients, 2 needed secondary suturing.

These wound infections were managed by opening and packing the wound. And no intraabdominal abscess was found in any patient. Peri-operative antibiotics were given to all patients.

No patient was readmitted. No mortality found so far.

3 patients developed nausea, vomiting and loose stool.

Benefits: Peritoneal lavage could be done for pus in other site than RIF in 16 cases.

Other pathology found

2 patients had twisted ovarian cyst.

Single patient had chocolate cyst for which all 3 had undergone appendectomy and cystectomy.

At the end of procedure, each patient also had extensive irrigation of the operative site.

Conclusion: Laparoscopic Appendectomy is a safe technique and clinically beneficial for the patients. It provides various advantages over open appendectomy such as short hospital stay, reduced amount and duration of post-operative analgesia, early food tolerance, early return to normal activities and least post-operative complications. Contrarily, several complications may occur in this procedure too.

Hence, we should assess the condition of the patient to consider laparoscopic Appendectomy as procedure of choice for most of the case of appendicitis.

Key words: Appendectomy, Acute appendicitis, Laparoscopic appendectomy, Open appendectomy

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INTRODUCTION

Acute appendicitis is the most common non obstetric surgical complication that takes place during pregnancy, and its occurrence rate ranges from 1.8 to 41 per 10,000 pregnancies [1-6]. Clinical diagnosis of AA is often involves a combination of clinical, laboratory and radiological findings. The diagnostic methods could be purifying with the involvement of clinical scoring system that involve physical examination finding and inflammatory markers. Many user-friendly scoring systems have been used in the form of organized algorithm for predicting the risk of AA, but none has been accepted worldwide [7-9]. Moreover, the role of ultrasound (USG), computed Tomography (CT), or Magnetic Resonance imaging (MRI) is still controversial [10,11].

Appendectomy is the most common emergency surgical procedure [12,13]. Appendectomy is a simple and well standardized surgical procedure.

It can be of two types 1. Open 2. Laparoscopic.

The laparoscopic way seemingly superior to

open approach in some aspects like pain, wound infection rate, and postoperative ileum [14,15].

Despite numerous studies, it is still not clear whether open appendectomy (OA) or Laparoscopic Appendectomy is the most effective surgical procedure for acute appendicitis [16-23].

It's very challenging to diagnose acute appendicitis during pregnancy, because several nonspecific abdominal symptoms, physiologic leukocytosis

And anatomical changes associated with appendix during pregnancy [24].

MATERIAL AND METHODS

We completed a retrospective chart review of all patients undergoing LA for a clinical presentation of acute appendicitis from 2018 to 2020.

Exclusion criteria included incidental appendectomy, appendectomy of under 16 age group. All procedure are done in our hospital. Hospital charts were reviewed and all data collected and entered in to standardised data collection forms.

RESULTS

Length of stay in hospital

25 patients=2 days

20 patients=3 days

12 patients=4 days

3 patients=5 day

1 patient=6 days

1 patient=8 days

Post-operative Complications were identified in 14 patients

Wound infection: 9 cases

Out of these 9 patients, 2 needed secondary suturing

These wound infections were managed by opening and packing the wound. And no intraabdominal abscess was found in any patient. Peri operative antibiotics were given to all patients.

No patient was readmitted. No mortality found in our study.

3 patients developed nausea, vomiting and loose stool.

Benefits

Peritoneal lavage could be done for pus in other site than RIF in 16 cases.

Other pathology found

2 had twisted ovarian cyst.

Single patient had chocolate cyst for which all 3 had undergone appendectomy and cystectomy.

At the end of procedure, each patient also had extensive irrigation of the operative site.

Moderate amount of post-operative analgesia required in all cases. No mortality reported so far.

DISCUSSION

The success of laparoscopic surgery in gall bladder disease and many other fields has led to reevaluation of many open surgical procedures. Acute appendicitis (AA) is one of the most common conditions that requires emergency surgery. Laparoscopic surgery is a major surgical advancement since last two decades.

Several studies proved the safety, faster return to normal activities, fewer wound complications, and longer operating time in case of Laparoscopic Appendectomy [20,25].

Our study findings also matched with other studies in which laparoscopic appendectomy was performed on several patients. These studies also concluded that laparoscopy should be used as routine procedure for all young females presenting with right iliac fossa pain [26]. Additionally, laparoscopic appendectomy is associated with diminished morbidity in elderly patients [27]. Moreover, LA is safe for advance appendicitis in children [28]. On the basis of level of satisfaction, patients' preference during counseling, study suggested that LA may be adopted safely for cases of suspected appendicitis [29].

The Cochrane systematic review of Randomized controlled trials comparing LA and OA is regularly updated including 39 clinical trials [9]. This meta-analysis suggested that wound infections are about one-half as likely after LA. Additionally, intraabdominal abscesses occur almost 3 times more often after LA. The exact cause for increased occurrence of abscess formation after LA is still unknown [30], fortunately, we don't find any in our study. Another aspect is safety in such common procedures like appendectomy, where the number of procedures performed by each surgeon may be associated with number of complications like length of stay and cost [31,32].

On the other hand, if performed safely with Minimally invasive method, we can get higher success in clinical settings and also hospital stay may be less than one in 90% cases [33,34].

Appendicitis with pregnancy associated with poor pregnancy outcomes, including preterm delivery, fetal loss, and perinatal morbidity and mortality [11]. 20 % women suffered from fetal loss in case of complicated appendicitis, while only 1.5% of women suffered from the same in uncomplicated appendicitis [35-37].

The Preterm delivery takes place more frequently in perforated appendicitis, and preterm delivery rate has been reported to be between 7.5 and 30.0% [38-40]. In our study, no such cases found.

There are many limitations existing in our study. First one is the small sample size; second limitation is that our study is not able to clarify the guidelines for complications of LA during pregnancy. Finally, this study doesn't reveal factors, which can minimize the complications of LA. Last but not the least, this study doesn't

talk about cost effectiveness of LA, might be LA is expensive for a large number of people in lower socioeconomic areas.

CONCLUSION

Laparoscopic Appendectomy is a safe technique and clinically beneficial for the patients. It provides various advantages over open appendectomy such as short hospital stay, reduced amount and duration of post-operative analgesia, early food tolerance, early return to normal activities and least post-operative complications.

Contrarily, several complications may occur in this procedure too. Hence, we should assess the condition of the patient to consider laparoscopic Appendectomy as procedure of choice for most of the cases of appendicitis.

ABBREVIATIONS

LA: Laparoscopic Appendectomy.

RIF: Right Iliac Fossa.

AA: Acute Appendicitis.

OA: Open Appendectomy.

USG: ultrasound/Sonography.

CT: Computed Tomography.

MRI: (Magnetic Resonance imaging.

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