

Appendectomy and Laparoscopic Appendectomy

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Received: 02-Jun-2022, Manuscript No. IPJUS-22-12566; **Editor assigned:** 05-Jun-2022, Pre-QC No ipar-22-12566 (PQ); **Reviewed:** 23-Jun-2022, QC No. IPJUS-22-12566; **Revised:** 24-Jun-2022, Manuscript No. ipar-22-12566 (R); **Published:** 31-Jun-2022, DOI: 10.36648/2254-6758.22.10.51

Keywords: Laparoscopic appendectomy; Suspected appendicitis

Introduction

An appendectomy is the surgical removal of the appendix. It's a common emergency surgery that's performed to treat appendicitis, an inflammatory condition of the appendix. The appendix is a small, tube-shaped pouch attached to your large intestine. It's located in the lower right side of your abdomen. The exact purpose of the appendix isn't known. However, it's believed that it may help us recover from diarrhea, inflammation, and infections of the small and large intestines. These may sound like important functions, but the body can still function properly without an appendix. An appendectomy is the surgical removal of the appendix. It is a common procedure that surgeons usually carry out in an emergency. A person is under general anesthesia when doctors remove the appendix, meaning they should not feel any pain during the procedure. However, the surgical area may become tender as it heals.

Background

Good outcome has been reported with the laparoscopic approach in uncomplicated appendicitis, but a higher incidence of postoperative intraabdominal abscesses has been reported after laparoscopic appendectomy in complicated appendicitis. Objective was to study the efficacy of laparoscopic appendectomy.

When the appendix becomes inflamed and swollen, bacteria can quickly multiply inside the organ and lead to the formation of pus. This buildup of bacteria and pus can cause pain around the belly button that spreads to the lower right section of the abdomen. Walking or coughing can make the pain worse. You may also experience nausea, vomiting, and diarrhea. It's important to seek treatment right away if you're having symptoms of appendicitis. When the condition goes untreated, the appendix can burst (perforated appendix) and release bacteria and other harmful substances into the abdominal cavity. This can be life-threatening, and will lead to a longer hospital stay.

Appendectomy is the standard treatment for appendicitis. It's crucial to remove the appendix right away, before the appendix can rupture. Once an appendectomy is performed, most people recover quickly and without complications.

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Citation: Aydemir E (2022) Appendectomy and Laparoscopic Appendectomy. J Uni Sur, Vol.10 No. 6: 51.

Appendectomy

Open appendectomy

- A cut or incision will be made in the lower right part of your belly.
- Your abdominal muscles will be separated and the abdominal area will be opened.
- Your appendix will be tied off with stitches and removed.

If your appendix has burst or ruptured, your abdomen will be washed out with salt water (saline).

- The lining of your abdomen and your abdominal muscles will be closed with stitches. A small tube may be put in the incision to drain out fluids.

Laparoscopic appendectomy

- A tiny incision will be made for the tube (laparoscope). More cuts may be made so that other tools can be used during surgery.
- Carbon dioxide gas will be used to swell up your abdomen so that your appendix and other organs can be easily seen.
- The laparoscope will be put in and your appendix will be found.
- Your appendix will be tied off with stitches and removed through an incision.

When the surgery is done, the laparoscope and tools will be removed. The carbon dioxide will be let out through the cuts. A

small tube may be placed in the cut to drain out fluids.

- Procedure completion, both methods
- Your appendix will be sent to a lab to be tested.
- Your cuts will be closed with stitches or surgical staples.
- A sterile bandage or dressing will be used to cover the wounds.

Symptoms of appendicitis include

stomach pain that starts suddenly near the belly button and spreads to the lower right side of the abdomen

- Abdominal swelling
- Rigid abdominal muscles
- Constipation or diarrhea
- Nausea
- Vomiting
- Loss of appetite
- Low-grade fever
- Fever or chills
- Redness, swelling, bleeding, or other drainage from the incision site
- More pain around the incision site
- Vomiting
- Loss of appetite or unable to eat or drink anything
- Constant coughing, trouble breathing, or shortness of breath
- Belly pain, cramping, or swelling
- No bowel movement for 2 days or longer
- Watery diarrhea for more than 3 days

The appendix is a small, finger-shaped organ that branches off from the first part of the large intestine. When it becomes swollen (inflamed) or infected, the condition is called appendicitis. When you have appendicitis, your appendix may need to be removed. An appendix that has a hole in it can leak and infect the entire abdomen area. This can be life threatening.

An appendectomy is a fairly simple and common procedure. However, there are some risks associated with the surgery, including:

- bleeding
- infection
- injury to nearby organs
- blocked bowels

It's important to note that the risks of an appendectomy are much less severe than the risks associated with untreated appendicitis. An appendectomy needs to be done immediately to prevent abscesses and peritonitis from developing.

You'll need to avoid eating and drinking for at least eight hours before the appendectomy. It's also important to tell your doctor about any prescription or over-the-counter medications you're taking. Your doctor will tell you how they should be used before and after the procedure. You should also tell your doctor if you:

- are pregnant or believe you may be pregnant
- are allergic or sensitive to latex or certain medications, such as anesthesia
- have a history of bleeding disorders

You should also arrange for a family member or friend to drive you home after the procedure. Appendectomy, being the most common surgical procedure performed in general surgery, is still being performed by both open and laparoscopic methods due to a lack of consensus as to which is the most appropriate method. Because further trials are necessary and few such studies have been performed in developing countries, we decided to evaluate the outcomes of the 2 procedures to share our experience with the international community.

The VA National Surgical Quality Improvement Program contains prospectively collected and extensively validated data on 1,000,000 major surgical operations. All patients undergoing surgical intervention for appendicitis from 1991 to 1999 registered in this database were selected for study. Independent variables examined included 68 putative preoperative risk factors and 12 intraoperative process measures. Dependent variables were 21 specific adverse outcomes, including death. Stepwise logistic regression analysis was used to construct models predicting 30-day morbidity rate and the 30-day postoperative mortality rate.

Methods

Consecutive patients with suspected acute appendicitis who underwent laparoscopic (LA) (n=48) and open (n=52) appendectomy (OA) over a period of 3 years were studied. Clinical outcomes were compared between the 2 groups in relation to operative time, analgesia used, length of hospital stay, return to work, resumption of a regular diet, and postoperative complications.

When the appendectomy is over, you'll be observed for several hours before you're released from the hospital. Your vital signs, such your breathing and heart rate, will be monitored closely. Hospital staff will also check for any adverse reactions to the anesthesia or the procedure.

The timing of your release will depend on:

- your overall physical condition
- the type of appendectomy performed
- your body's reaction to the surgery

In some cases, you may have to remain in the hospital overnight. You may be able to go home the same day as the surgery if your appendicitis wasn't severe.

Results

Mean age of patients was 25.8 years in the laparoscopic and

25.5 years in the open group. Patient demographics were similar in both groups ($P>0.05$). There was significantly less need for analgesia (1.0 ± 0.5 in LA and 1.5 ± 0.6 doses in OA), a short hospital stay (1.4 ± 0.7 in LA and 3.4 ± 1.0 days in OA), early return to work (12.6 ± 3.3 in LA and 19.1 ± 3.1 days in OA), and less time needed to return to a regular diet (20.1 ± 2.9 in LA and

22.0 ± 4.7 , $P<0.05$ in OA) in the laparoscopic appendectomy group. Operative time was significantly shorter (54.9 ± 14.7 in LA and 13.6 ± 12.6 minutes in OA) in the open group. Total number of complications was less in the laparoscopic group; however, there was no statistically significant difference.

Discussion

Appendicitis is one of the most common intra-abdominal diseases encountered, the solution to which is a relatively simple operation. Although mortality rates attributed to appendicitis have been dramatically reduced over the past century, complications are common.^{6,24,25} This stems from the fact that perforation rates remain high (17–20%), despite the increased use of imaging modalities such as ultrasound and computed tomography.^{2,26} Although the surgeon may not be as involved in the early care of the patient with appendicitis as in years past, there is significant need for the surgeon to influence the observed morbidity of these patients. By using NSQIP data, we investigated the risk factors that contribute to the morbidity and mortality of adults requiring surgical treatment of appendicitis.

Conclusion

The laparoscopic technique is a safe and clinically beneficial

operative procedure. It provides certain advantages over open appendectomy, including short hospital stay, decreased requirement of postoperative analgesia, early food tolerance, and earlier return to normal activities. Where feasible, laparoscopy should be undertaken as the initial procedure of choice for most cases of suspected appendicitis. Morbidity and mortality rates after the surgical treatment of appendicitis in VA hospitals are comparable with those reported in other large series. Most postsurgical complications are associated with an increased 30-day mortality rate. The models presented here are the most robust available in predicting 30-day morbidity and mortality for VA patients with appendicitis. Furthermore, they provide a starting point for the design of similar

models to evaluate non-VA patients with appendicitis using the data the National Surgical Quality Improvement Program is currently gathering from private hospitals.

An appendectomy is a surgical procedure that removes an infected appendix from the abdomen to get relief from a condition known as appendicitis. It is a condition of inflammation of the appendix. An appendix is a small tube-shaped organ in the upper part of the large intestine. If the appendix is not removed, it may burst, spilling infectious material into the bloodstream and abdomen, posing a major health risk.

Acknowledgement

None

Conflict of Interest

None

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