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Research Article

EFFECTIVENESS OF FAST TRACT SURGERY PROTOCOL IN APPENDECTOMY: LAPAROSCOPIC APPENDECTOMY VS. OPEN APPENDECTOMY

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Abstract:

Introduction: Appendix is a small pouch attached to the beginning of large intestine. Appendicitis, an inflammation of the appendix, is the most common acute surgical condition of the abdomen. **Objectives:** The main objective of the study is to analyse the effectiveness of fast tract surgery protocol in appendectomy. This is basically the comparison of laparoscopic appendectomy vs. open appendectomy. **Material and methods:** This study was conducted at Health department Punjab during June 2019 to January 2020. This study include 134 patients diagnosed as appendicitis and operated. Their mean age was 33.32 ± 20.80 years (range, 2 to 92 years). OA was performed through right lower quadrant transverse muscle-splitting incision. **Results:** Of these 134 patients, 85 (63.4%) had acute appendicitis and 20 (20.1%) appendices were perforated. There were 80 patients in the LA group and 54 in the OA group; however, 9 patients had a conversion to an open procedure. The overall SSI rate was not different between the two groups (2.8% for the OA group vs. 4.6% for the LA group, respectively, $P=0.204$), but the superficial SSI rate was significantly lower in the LA group (3.2% vs. 0.6%, $P = 0.016$). **Conclusion:** It is concluded that advantages of diagnostic laparoscopy in patients with abdominal pain, combined with the benefits of laparoscopic appendectomy, suggest that all patients with suspected appendicitis should be considered for laparoscopic appendectomy provided appropriately trained personnel and adequate equipment are available.

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INTRODUCTION:

Appendix is a small pouch attached to the beginning of large intestine. Appendicitis, an inflammation of the appendix, is the most common acute surgical condition of the abdomen. Almost 10% of the general population develops acute appendicitis with maximal incidence in the second and third decades of life [1]. Surgical removal of such inflamed appendix is the most commonly performed emergency operation in the world and has long been considered the standard procedure of treatment of appendicitis. Its peak incidence is between the ages of 10 and 30 years. Differential diagnosis of appendicitis is often a clinical challenge because appendicitis can mimic several abdominal conditions [2].

Traditionally, acute appendicitis has always been a clinical diagnosis based on patient history, physical examination, and laboratory testing. A high percentage of negative appendectomies (20%) was considered reasonable, based on the premise that delay would inevitably lead to perforated appendicitis and thus increased morbidity and even mortality [3]. This classical practice is currently being abandoned by most surgeons, as negative appendectomies are no longer considered acceptable. They carry a substantial morbidity, increase hospital costs and may be avoided by using preoperative radiological imaging or diagnostic laparoscopy [4].

There has been a continuous search for complementary diagnostic methods to limit the number of “unnecessary” appendectomies without delaying the diagnostic and therapeutic process and without increasing perforation rates [5]. Preoperative imaging has gained wide acceptance due to the improved diagnostic accuracy, with computed tomography (CT) outperforming ultrasound (US) in most studies [6]. The diagnostic modalities, however, that are considered to be the most accurate for making the diagnosis appendicitis, such as CT and laparoscopy, also have negative repercussions. Computed tomography exposes the patient to considerable ionizing radiation, and laparoscopy is an invasive procedure performed

under general anesthesia and thus carries a risk of morbidity [7].

Objectives

The main objective of the study is to analyse the effectiveness of fast tract surgery protocol in appendectomy. This is basically the comparison of laparoscopic appendectomy vs. open appendectomy.

MATERIAL AND METHODS:

This study was conducted at Health department Punjab during June 2019 to January 2020. This study include 134 patients diagnosed as appendicitis and operated. Their mean age was 33.32 ± 20.80 years (range, 2 to 92 years). OA was performed through right lower quadrant transverse muscle-splitting incision. The thread ties were placed on the base of the appendix. The tied-off appendiceal stump was dunk in again with purse-string suture. For LA, three ports were used. One 10-mm port for laparoscope entered at the inferior margin of umbilicus with either a vertical or semicircular transverse incision. Two additional 5-mm ports entered at the left lower quadrant and at the suprapubic area. Mesoappendiceal tissue was dissected and divided with monopolar electrocautery or ultrasonic scissor. Before transection of appendix, stump was doubly ligated with endoloops as an easy, safe and cost-effective procedure.

Statistical Analysis

The data were analyzed using the Statistical Package for the Social Sciences version 20.0 for Windows (IBM Corp.; Armonk, NY, USA).

RESULTS:

Of these 134 patients, 85 (63.4%) had acute appendicitis and 20 (20.1%) appendices were perforated. There were 80 patients in the LA group and 54 in the OA group; however, 9 patients had a conversion to an open procedure. The overall SSI rate was not different between the two groups (2.8% for the OA group vs. 4.6% for the LA group, respectively, $P=0.204$), but the superficial SSI rate was significantly lower in the LA group (3.2% vs. 0.6%, $P = 0.016$).

Table 01: Demographic Details and Main Outcome Measures for Laparoscopic Appendectomy and Open Appendectomy

Demographics	Laparoscopic (n = 80)	Open (n = 54)
Age	24 (range, 10 to 63)	23 (range, 7 to 63)
Sex (M:F)	28:52	35:19
Severity		
Acute appendicitis	53	32
Perforated appendix	12	15
Normal appendix	15	07
Median operating time (minutes)	51.3 (range, 35 to 100)	40.6 (range, 30 to 95)
Conversion	9	
Wound infection	1	5
Intraabdominal abscess	1	1

DISCUSSION:

Appendectomy for acute appendicitis is a common emergency surgical procedure.⁸ Open appendectomy has been the gold standard treatment for acute appendicitis since the description by Mc Burney in 1894. Although appendectomy is considered a safe operation, a potential for complications exists. Most noticeable among them are wound infection, intraabdominal abscess, adhesions, bowel obstruction, and pulmonary complications from general anaesthesia [6].

Since its first description in 1983, laparoscopic appendectomy has gained in popularity with accumulating evidence demonstrating the benefits of the laparoscopic approach in terms of shorter hospital stay, more rapid recovery, and better postoperative pain control. Furthermore, laparoscopy allows a complete and thorough assessment of the abdominal cavity and increases diagnostic accuracy, particularly in females where the rates of appendectomy with normal histology have been very high [7].

The development of a postoperative intraabdominal abscess (IAA) after appendectomy is a rare but serious complication and is associated with significant morbidity. Some reports have suggested an increased risk of an intraabdominal abscess after laparoscopic appendectomy compared with open surgery, whilst others have reported the opposite [8]. An advantage of laparoscopic appendectomy has been the reduced risk of wound infection, as the inflamed appendix is dissected and removed without direct contact with the wound, especially if an extraction bag for specimen retrieval is used [9].

This study has limitations. Patients were not randomized, and the choice of procedure was operator dependent. This introduces a bias in that the surgeons with experience and special interest in laparoscopic surgery were more likely to opt for the laparoscopic approach. Surgery was performed by varying grades of surgeons including 3 consultants and 6 specialist registrars. The incidence of intraabdominal abscess formation was low, and to

detect a significant difference between the 2 groups would require a large number of patients in a randomized controlled trial. Due to other advantages of laparoscopic appendectomy, such a trial is unlikely [10].

CONCLUSION:

It is concluded that advantages of diagnostic laparoscopy in patients with abdominal pain, combined with the benefits of laparoscopic appendectomy, suggest that all patients with suspected appendicitis should be considered for laparoscopic appendectomy provided appropriately trained personnel and adequate equipment are available.

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