

Feasibility of Miniappendicectomy As A Day Surgery Procedure

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Abstract: In this study of 105 cases of miniappendicectomy as the day surgery procedure with above technique is safe with no mortality and reduced morbidity. Moreover, the operative time is reduced, dosage of analgesic used is reduced and patients were able to do routine work early. As miniappendicectomy cause less tissue dissection so there is less pain, wound infection, hematoma and incisional hernias. This decreased the duration of hospital stay and helps in early recovery. Patients with perforation peritonitis, appendicular lump, obesity and doubtful diagnosis are excluded from the procedure. It is true that miniappendicectomy as a day surgery procedure improves the quality of surgical treatment but also increases efficacy of health care institutions. Miniappendicectomy as day surgery procedure also improves quality of life in patients at minimum cost.

Key Words: Miniappendicectomy, Button-Hole Appendicectomy, Day Surgery, Minimum Invasive Surgery

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I. Introduction:

Acute appendicitis is among the most common surgical condition requiring emergency surgery. The urgent emergency surgery for acute appendicitis is appendicectomy to avoid the complications associated with this condition. The era of large incision called Mcburney's incision appears to be obsolete. The urge for scar less surgery has led to use of various incisions of appendicectomy. Surgeons have tried various cosmetically better incisions from time to time but have become outdated because of large size of the incision [1]. As appendicitis is a disease of young person, minimum hospital stay and good cosmetic results have become the basic requirement for this day surgery. The minimum invasive surgery has pioneered as day surgery procedure. With the beginning of minimal incision surgery which provides better comfort and recovery the flow of surgeons has shifted towards it [2]. Laparoscopic appendicectomy is the most upcoming technique of appendicectomy which gives minimum scar and can be performed as day surgery procedure [3]. Another surgical technique of appendicectomy performed through a small incision also gives minimum scar and can be performed as day surgery procedure. This surgical technique is called as button-hole or key-hole appendicectomy [4]. This is also called as mini appendicectomy. This study was planned and conducted in patients of acute appendicitis in whom the mini appendicectomy was done as day care procedure.

II. Material And Methods:

This study was done in department of surgery in patients presenting with acute appendicitis of less than 48 hours duration in total of 105 patients. Out of these 105 cases; 51 were male patients and 54 female patients. Patients of the age group 14 to 60 were included in this study. Children less than 14 years of age were not included in this study as children are admitted in paediatric surgery department.

Inclusion criteria

- Patients with acute appendicitis presenting with acute appendicitis within 48 hours of onset of symptoms.

Exclusion criteria

- Obese patients
- Appendicular lump or abscess
- Perforated appendicitis
- Doubtful diagnosis

A detailed history and clinical examination was done in all the patients. These patients were investigated by haematological investigations like Haemoglobin levels, Bleeding time, Clotting time, Total and Differential leucocyte count, Blood Urea and Blood Sugar and complete urine examination. Ultrasonography was done in all the patients. After clinical decision of appendicectomy was done. Miniappendicectomy was done in all these patients with technique described.

Technique of Miniappendicectomy:

To start with the operative technique, McBurney’s point and lateral border of rectus muscle was marked. McBurney’s point is the junction of medial two third and lateral one third of the line joining the umbilicus to anterior superior iliac supine. Incision was started from lateral border of rectus muscle and was extended lateral 2.5 to 3.5 cm to McBurney’s point. Skin incision was deepened to anterior sheath, which was also incised in the line of skin incision. The rectus muscle was retracted medially with the help of long pronged retractors. Peritoneum was opened in the line of skin incision. We enter the abdominal cavity, retractors were removed and appendix was traced with little efforts and manipulations. Look into the peritoneal cavity if appendix is seen then take it out with help of Babcock’s forceps. If not possible then try to put little finger and deliver the appendix out of wound. Then ligate the mesoappendix and transfix the appendix at base and cauterise the stump to achieve hemostasis. Close the peritoneum with continuous polyglactin 2-0 suture. The internal oblique is closed with one or two interrupted polyglactin 2-0 suture. The external oblique was closed with continuous polyglactin 2-0 suture. Single stitch is applied to close the skin. A small size dressing was applied to cover this single stitched wound. If there was difficulty in tracing the appendix, this small incision was extended laterally to trace the retrograde appendix. No abnormally placed appendix was present in this series.

The postoperative care was done using intravenous fluids, antibiotics and metronidazole. The observations were done for postoperative pain and vomiting. For pain and vomiting injectable medicine were used. In routine all patients were given oral medicines and discharged on next day in less than 23 hours.

III. Results:

Key hole appendicectomy was completed uneventfully in 101 cases with 05 cases requiring extension of incision to a length of 5 cm maximum. Average time required for the operation was 24 minutes, analgesic used injection diclofenac sodium usually single injection, hospital stay was one day on average, only two patients required extended stay. The return to routine work took 9.1 days on average.

There was no mortality and negligible morbidity in the form of wound infection in five cases, wound hematoma in two cases and surgical emphysema in two cases. In 78 cases bowel sounds were heard on the same day and passage of flatus was on the first day in 78 patients. Intravenous fluids were stopped on the first day in 78 patients and on second postoperative day in majority. In intraoperative findings, 89 cases appendix were acutely inflamed and four cases had appendicular lump which were missed preoperatively in clinical examination. In five cases incision were extended to a length of 5 cm. In follow up period of surgery from 15 days to six months no complications were observed and patients were quite satisfied with the outcome of surgery.

Table 1	
Perioperative Parameters in Miniappendicectomy	
Length of Incision	2.5 To 3.0 Cm (2.8 Cm)
Operation Time	21 – 48 Min (24 Min)
Incision Extension	5 Patients
Analgesics Used	1-2 Doses (1.5)
Hospital Stay	16-23 Hours
Return to Routines	7-10 Days (9.1 Days)
Satisfaction with Scar	96% (N=101)
Minor Complications	8% (N=9)

IV. Discussion:

Appendicectomy is the most common surgical operation performed by surgeons. Mc Burney incision, a muscle splitting incision was introduced first. Following this other incision like Rocky Daves, Rutherford Morison and Lanz incisions were introduced for appendicectomy [5]. Lanz’s incision was introduced for cosmetic reasons. The era of small incisions led to introduction of Button-hole, Key-hole appendicectomy or mini appendicectomy [6]. The present era has seen a spurt of laparoscopic appendicectomy. Both mini appendicectomy and lap appendicectomy are minimum invasive procedures. These procedures can be performed as day surgery procedures giving early recovery and good cosmetic results [7]. Lap appendicectomy produce scars in the abdominal wall. These abdominal wall scars are not acceptable to women particularly Indian women who wear saree as dress in which abdominal is exposed [8]. We are comparing our experience of mini appendicectomy with lap appendicectomy in surgical literature.

Preoperative imaging can provide more accurate diagnosis of acute appendicitis than clinical diagnosis.

'Big surgeons make big incisions has lost its essence in present time as minimum invasive surgery predominates. Our experience of miniappendectomy and laparoscopic appendectomy both being the minimum invasive surgery techniques have been compared as day surgery procedures in this study [9].

Conventional appendectomy performed through Grid-Iron incision has the advantage of treating perforated appendix, appendicular lump and abscess. The miniappendectomy done as day surgery procedure is a safe technique with better cosmetic results and minimum morbidity as compared to laparoscopic appendectomy [10].

Miniappendectomy procedure takes less operative time, one day hospital stay, less need for oral analgesics and early return to work as compared to laparoscopic appendectomy. One small incision causes less trauma, less pain, decreased risk of wound infection and incisional hernia [11].

The miniappendectomy has disadvantage as compared to laparoscopic appendectomy in obese patient with thick anterior abdominal wall [12].

The success rate of miniappendectomy in this series was 98%. The conversion to a conventional Grid-Iron incision was used in 2% of the patients. This demonstrates that miniappendectomy can be done in every patient presenting with acute appendicitis except very obese patients. The success rate of laparoscopic appendectomy in literature is 96.0%. So, it is concluded that miniappendectomy is more promising than laparoscopic appendectomy in select group of patients both being the minimum invasive procedure [13].

This study was conducted as a clinical study of miniappendectomy where in 2.5 to 3.0 cm transverse incision is made in the right lower quadrant near ileocaecal region in 105 patients with success rate of 96%. In our study group age of the patients were 14 to 60 years. Time taken to conduct surgery is average 24 minutes which is less compared to conventional and laparoscopic appendectomy. The use of analgesics is also less 1-2 doses compared to conventional appendectomy. The average hospital stay duration is 23 hours and return to work is 9.1 days. there is no mortality in our case study but morbidity is 8% with anterior abdominal wall wound infection in five patients, wound hematoma in two cases and subcutaneous emphysema in two cases. In our study the patients are well satisfied with operation and scar. In our study incision was small and without muscle and nerve derangements, hence we could not encounter any case of incisional hernia. This observation is on follow up period extended from 15 days to six months. No serious complications were observed in any of the patients in this series.

V. Conclusion:

In this study, it is concluded that miniappendectomy is a safe and feasible as day surgery procedure. The upcoming laparoscopic appendectomy as day surgery is more invasive and expensive. The use of radiological techniques like ultrasonography and CT scan can help in diagnosis and selection of patients. This is reflected in a very quick recovery, less analgesia and early discharge.

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