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Original Research Article

Mini incision appendectomy: an analysis of 70 cases

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ABSTRACT

Background: Appendicitis is a common surgical emergency world over, requiring surgical intervention immediately or as elective procedure to avoid complications. Various methods of appendisectomy are in practice, which includes conventional and laparoscopic appendectomy. One other method of appendectomy called mini appendisectomy is performed in selected patients. This study analyses the advantage, feasibility and utility of using mini incision Appendectomy for patients with appendicitis at Saveetha Medical College and Hospital, a teaching tertiary care hospital, Chennai, India.
Methods: A total number of 70 cases diagnosed with appendicitis underwent this technique of mini incision appendisectomy mostly under spinal anesthesia. The study period was from 2013 to 2016, for 4 years duration. Patients detailed history, physical examination, operative details, post-operative complications, length of hospital stay, pain scores, analgesic requirements and patient satisfaction scores were collected.
Results: Mini-incision appendectomy was performed in 70 patients with 2 cases (2.8%) which required an extension of the incision to 3.5 cm. Wound infection occurred in 2 patients which was treated conservatively. The average operating time was 25 minutes (20-45 minutes). No post-operative mortality. Patients had minimal post-operative pain.
Conclusions: Hence mini incision appendectomy is a safe and advantageous technique in performing appendectomy in all hospitals.

Keywords: Appendicitis, Appendectomy, Mini incision

INTRODUCTION

American C. Mc Burney's Grid iron incision for Appendectomy remained incision of choice even after more than one century since it was devised.[1] Amyand: a surgeon of English army performed an appendectomy in 1735 without anaesthesia to remove a perforated appendix.[2,3]

Subsequently few incisions were devised like Rutherford Morison's, Rocky Dave's, Battle's incision and lately Lanz incision for appendectomy until Kart Semm introduced "laparoscopic appendectomy".[4] Surgeons have tried cosmetically better incisions for appendisectomy.[5,6]

Our study is based on a transverse incision 2 to 2.5 cm over the lateral border of Rectus upto the Mc Burney's point. Since Semm in 1983 introduced laparoscopic appendectomy, it is now becoming more accepted.[7] Many advantages of laparoscopic appendectomy have been shown such as lower hospital stay, shorter recovery period, and shorter period for returning to daily activities, lower postoperative pain, and lower postoperative infections. With the widespread application of laparoscopy, more useful hand-tools were developed and it became possible to perform all gastrointestinal surgical procedures laparoscopically over time with increasing clinical experience. In spite of these advantages, there is controversy over the best model of appendectomy technique in the literature.[8] Despite the given facts Open

appendectomy is still most common procedure adopted in cases of appendicitis especially in rural areas, for lack of available skill and equipments.[9] This study was aimed to show the advantages of this technique called mini incision appendectomy.

METHODS

70 patients, 32 males and 38 females in the age group of 16 to 55 years with clinical, supplemented with Radiological diagnosis of appendicitis were subjected for surgery. Patients with diagnosis of appendicular mass, appendicular abscess and obese patients were excluded. 66 patients were operated under spinal anaesthesia and 4 patients under general anaesthesia.

Preoperatively the point of maximum tenderness was marked in the right iliac fossa to plan the incision site which corresponded to the Mc Burney's point in most of the cases.

Transverse 2 to 2.5 cm incision was made over the lateral border of Right Rectus muscle at the marked site. Anterior rectus sheath was incised in line with the skin incision and rectus muscle retracted medially. Transversalis fascia and peritoneum was incised. Small Langenbeck retractors were useful for the procedure. With index finger appendix is palpated and delivered with help of babcocks forceps. In difficult cases Caecum is identified and subsequently appendix is delivered.

Appendectomy was performed as per standard procedure. Peritoneum was closed with one or two absorbable suture and anterior rectus sheath was closed. Skin was closed with interrupted or subcuticular non-absorbable suture. Patients were started on oral liquids on first post-operative day.

Following parameters were analyzed. Incision length, operative time, post-operative pain score, wound infection, length of hospital stay. Post-operative pain score measured by visual analogue scale with score from 0 (no pain) to 10 (severe pain).

Figure 1: Mini incision appendectomy scar.

RESULTS

There were 32 males and 38 females in the study, and with different age groups 2 were of < 15 years, 40 were of 15-30 years, 20 were of 30-45 years, 8 were of >45 years.

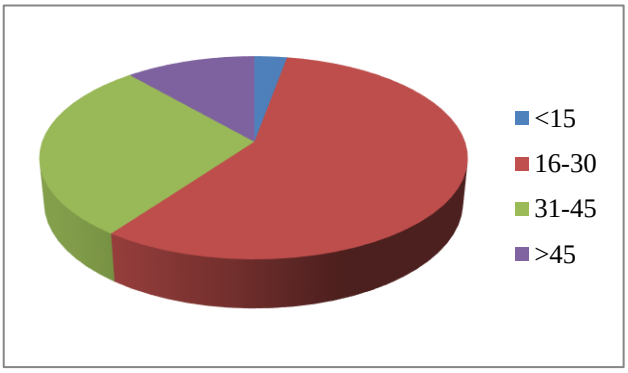

Figure 2: Age wise distribution.

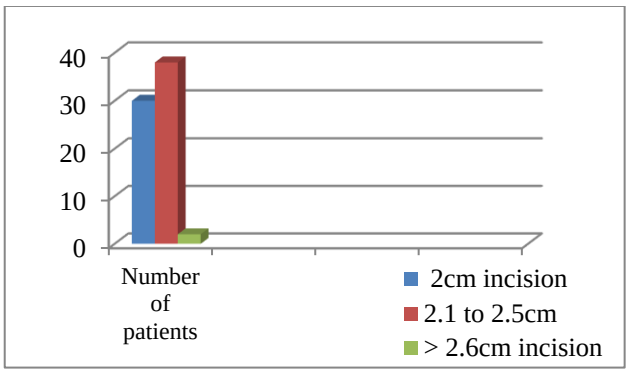

Figure 3: Incisions in patients.

Mini- incision appendectomy was performed in 70 patients with 2 cases (2.8 %) which required an extension of the incision to 3.5 cm. Amongst other cases, in 30 patients (42.8%) the length of incision was 2cm.In 38 patients the length of incision was 2.1 to 2.5cm (54.3%) as shown in Figure 3.

Wound infection occurred in 2 patients which were treated conservatively. The average operating time was 25 minutes (20- 45 minutes). The incision was extended upto 3.5 cm in 2 patients. The results of the study are shown in Table 1.

Table 1: Perioperative parameters in mini incision appendisectomy.

Parameter	Mini appendisectomy
Incision length	2 to 2.5 cm
Incision extended	2 cases
Wound infection	2 cases
Operative time	20-45 m (25 min)
Hospital Stay	2-4 days

DISCUSSION

Appendicitis is a common surgical emergency requiring intervention immediately or as elective procedure. Mc Burney pioneered early surgery, devising muscle splitting incision for Appendectomy named after him.[1,10] It was followed for many years, following which several incisions have been devised like Rutherford Morrisons, Rocky Dave's, Battle's and Lanz incision. Lanz incision is proved to have an advantage of better cosmetic result. Huochuan L et al in 2004 did a study on mini appendectomy in which the length of incision was between 2.5cm to 3cm (average 2.7cm).[11] Where as in our study we had an incision length between 2 cm to 2.5 cm (average - 2.3 cm). Bhasin SK Published an article in 2005 on mini- Appendectomy in 100 cases and concluded that this enables less hospital stay, 2 to 7 days (average - 2.3 days) and requires less analgesics.[12] In our study patients were discharged between 2 to 4 days (average - 3 days).

Ling L et al performed a case study on 316 patients in 2009 and reported similar results for small incision appendectomy.[13] Saurland S et al in the Cochrane database review analyzed 54 studies comparing laparascopic appendectomy (LA) Vs open appendectomy (OA) and observed that the operative time and cost in LA is significantly higher.[14] Shah B et al concluded that small incision open appendectomy is better than LA in terms of operative time, time to return to daily activity and complications and that the cost was higher in LA group compared to SIOA.[15] In a similar study by AC Moberg et al they compared the recovery time after Laparoscopic Vs Open appendectomy on one hundred and sixty three patients found no difference in recovery time, complication rates and mean hospital stay in the patients.[16]

Mini-incision appendectomy has advantage that the procedure can be performed under spinal anaesthesia, with less operative time and is cost effective compared to laparoscopic appendectomy. Patients with diagnosis of appendicular mass or abscess as well as obese patients were excluded. There was negligible morbidity in the form of wound infection in two patients which was managed conservatively. Mini-incision appendectomy performed by the mentioned technique is a better technique compared to conventional appendicectomy in appropriate cases. This procedure needs further evaluations with respect to its comparisons with conventional appendisectomy and laproscopic appendectomy

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