

## Sub Hepatic Appendectomy: A Case Report

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### Abstract

Appendectomy for appendicitis is one of the common surgical operations in the clinical practice. Appendectomy can be performed by open operations or through laparoscopy. Appendectomy can be difficult depending on the positions for example if it is in the sub hepatic location then the technique of appendectomy needs to be modified as we have done in our case.

**Keywords:** Appendectomy; Appendicitis; Laparoscopy

### Introduction

Appendicitis is a common surgical condition requiring an operation, clinical presentation with normal appendicular anatomy is well documented in the literature [1].

Whenever the appendix is located in an abnormal position, it requires modifications in the surgical approach regarding incision and technique.

We had such a case of subhepatically located appendix needing extensions of the incision and appendectomy [2].

### Case History

A 20 years young lady presented with the history of pain in the right lower quadrant associated with vomiting and fever since 2 - 3 days. No associated symptoms of genito-urinary tract. She had normal regular menstrual cycle.

The patient gave a history of episodes of severe abdominal pain lasting 2-3 days in the past 2 to 2<sup>1/2</sup> years for which she had taken treatment from local general practitioners. She was even admitted once in ESI hospital in her home town and was managed non-operatively, with IV fluid, IV antibiotics and analgesics. This time the pain was more acute and she came for a definitive treatment to our hospital.

### Family history

Patient's mother had undergone appendectomy 1 year back.

On examination the patient was a young lady moderately built and nourished. She had stable vital signs. BP 110/70mm of Hg, Pulse 80/minute, RR 18/minute.

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The patient was alert and co-operative.

Examination of the abdomen revealed tenderness in the right iliac fossa i.e. McBurney's point, and other abdominal examination was within normal limits. A clinical diagnosis of acute appendicitis was made and she was managed as such.

### Investigations

- Hematology findings: Hb-13.5, TLC-10,100, Platelets-2,28,000,
- Serum chemistry: RBS-85, Urea-23, Creatinine-0.66,
- Urine analysis: Urine Specific Gravity-1.020, Urine Albumin-absent, Urine pH-6.0, Reaction-ACIDIC, Glucose-Absent, Ketone Bodies-absent, Appearance-Slightly Turbid, Pus Cells-10-15, Epithelial cells-8-10, RBC-Nil,
- Ultra-sonography of abdomen- showed appendix measuring 5.8 mm with mild peri-appendiceal fat stranding with right iliac fossa probe tenderness suggestive of acute appendicitis.

The patient was scheduled for appendectomy under spinal anaesthesia. Lanz incision was made after the routine preparation of the patient. The abdomen was opened in layers.

### Difficulties encountered

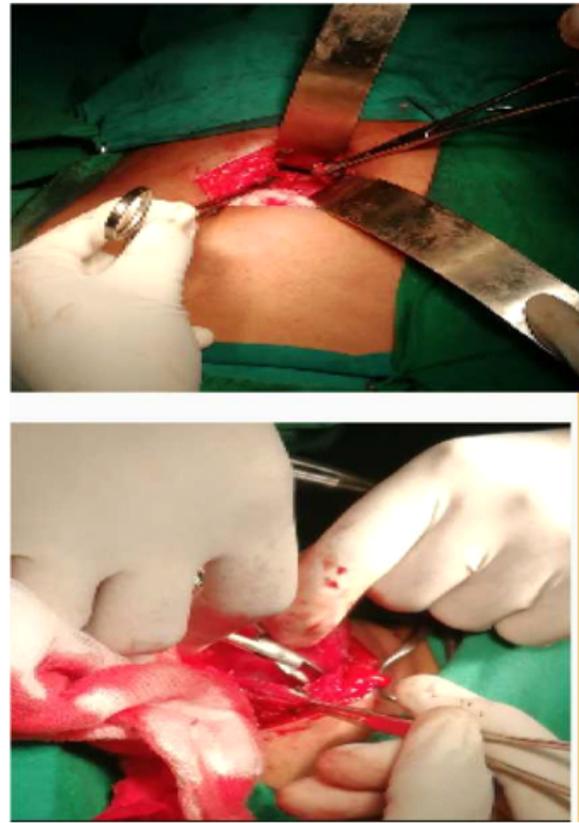
Ileo-caecal region was not seen in the operative field. After diligent search it was noted that the appendix was high-up in the sub-hepatic region. It was decided to extend the incision and slow and careful dissection was needed to perform appendectomy.

The appendix was inflamed, thick and oedematous. Haemostasis was achieved. The surgical incision was closed in layers.

The post-operative period was uneventful. She received pre-operative antibiotic which was continued post-operatively for the next 3 days.

- INJ. TAXIM 1 gm IV BD
- INJ. MEZOL 100 ML IV BD
- INJ. OMEZ 40 mg IV BD
- INJ. DYNAPER 75 mg in 100 ml NS SOS
- INJ. EMSET 8 mg SOS
- I.V fluids-2.5 litres/day for 2 days.

The patient was discharged on the 7<sup>th</sup> Post-operative day in good condition. The patient came for regular follow up and was doing well. The appendix which was sent for histo-pathological examination, was reported as acute on chronic appendicitis.



**Figure 1:** Intra-operative.



**Figure 2:** Appendix specimen.

### Discussion

Appendectomy can be an easy operation or a difficult operation. Whenever we say it is difficult operation it refers to i) Abnormal position of the appendix. Normally the appendix is situated posterior-medially in the caecum 2 cm below ileo-caecum junction [3].

According to a large cadaveric study the positions of the appendix were as follows in 377 adult cases [4]:

- A. Retro ceacal - 43.5%
- B. Sub-ceacal - 24.4%
- C. Post-ileal - 14.3%
- D. Pelvic - 9.3%
- E. Para ceacal - 5.8%
- F. Pre-ileal - 2.4%.

Others - 0.27% (left sided appendix).

Length of appendix varied from 1 cm - 20 cm.

Difficult appendectomy can also be due to appendicular pathology:-

- A. Gangrenous appendix
- B. Ruptured appendix and pus
- C. Appendicular abscess
- D. Acutely inflamed and friable appendix
- E. Inflamed and adherent appendix.

In the above said cases one has to be very careful in handling the appendix in dissection and ligation. In our case we planned for appendectomy under spinal anaesthesia.

The procedure-Lanz incision was made to give good cosmesis. Once the abdomen was opened, to our surprise the ileo-caecal junction and appendix was not seen in the operative area. After careful mobilization and search the ileo-caecal junction was seen high up in the sub hepatic. It was decided to extend the incision on either side about ½ to 1 cm and appendectomy was performed after little mobilisation of the ileo-caecal junction. The post-operative period was uneventful except for pain at the operated side. Patient was discharged in good condition. Her follow-up was satisfactory.

Sub-hepatically located appendix is less common and the reported incidents is around 0.08% from a study of 7210 patients who underwent laparoscopic appendectomy [5].

We went through the literature search there were few case reports.

In a case report of a female patient having repeated episodes of pain in right iliac fossa following laparoscopic cholecystectomy 1 month back. Later USG revealed an appendix like tubular structure between right kidney and liver. The patient underwent diagnostic laparoscopy after mobilization of the right colon appendectomy was performed. Post-operatively the patient had paralytic ileus which was managed conservatively after getting a computed tomography-Scan [6].

In another case report the patient had an ultra-sonography which showed small collection with echogenic comet in the right iliac fossa with the tail artefact in the upper limits of right iliac fossa. Open appendectomy was performed through McBurney's incision which needed extension to reach sub-hepatic appendix and appendectomy. The patient made an uneventful recovery [7].

A 11 year old boy attended the emergency with severe abdomen pain, fever and vomiting for 1 day. He was treated symptomatically in another hospital for 3 days. All the work up was done including ultra-sonography of the abdomen which showed a collection in sub-hepatic region in relation to the right kidney, a provisional diagnosis of PERINEPHRIC ABSCESS was made and IV Fluids, IV anti-biotics was started. The patient got a Computed tomography abdomen done, which showed a well-defined tubular structure lateral to the colon in the right hypochondrium with fat stranding. Revised diagnosis of inflamed, dilated appendix with perforation and localized collection. The patient underwent laparotomy, appendix was placed at sub hepatic region, ascending colon was absent and dilated, redundant transverse colon was noted. Careful mobilization was done pus was suctioned and appendectomy was performed with drain kept. Post-operative period was uneventful [8].

A new strategy has been advocated, in cases of complicated open appendectomy to be converted to laparoscopic appendectomy.

A study of 214 complicated appendectomy was included. 155 open (lengthened incision appendectomy) and 59 open operations were converted to laparoscopic appendectomies. The author's concluded that lengthened incision appendectomy increases the incidence of complications and length of the hospital stay. Conversion to laparoscopic appendectomy is feasible and efficient in managing the complicated appendicitis including sub hepatic appendicitis. It also helps in early post-operative recovery and lessens the hospital stay [9].

### Summary

A careful pre-operative assessment needs to be done, whenever there is a long history, suggestive of or re-current appendicitis. Ultra-sonography abdomen in most cases, are not helpful in locating the position of the appendix. A computed tomography scan is very helpful whenever it is availability and affordability to give a detailed pathology and the position of the appendix.

Conversion to laparoscopic operation from open appendectomy is a new surgical method in complicated laparoscopic appendectomy. Open appendectomy still has a large role to play in surgical practice.

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