

CASE REPORT

LAPAROSCOPIC MANAGEMENT OF ACUTE APPENDICITIS IN SITUS INVERSUS TOTALIS

By

A. Abdelaziz Hassan, Abdalla El Sabagh, A. Hazem Helmy

Department of Surgery, Theodor Bilhariz Research Institute, Giza, Egypt

Correspondence to: A. Hazem Helmy, Email: ahihelmy@hotmail.com

Aim: *Situs inversus totalis is an uncommon anatomic anomaly that complicates diagnosis and management of acute abdominal pain. Expedient diagnosis of common intra-peritoneal disease processes such as biliary colic, acute appendicitis and diverticulitis is often delayed as a result of that.*

Case presentation: *We present a case of 37 years old male patient presented to our emergency room (ER) with a history of left acute lower abdominal pain and vomiting since 3 days with a known history of situs invertus totalis. Subsequent laboratory and imaging studies confirmed the diagnosis of situs inversus and acute left-sided appendicitis. The patient underwent an operative laparoscopy, which revealed appendicular and periappendicular adhesions involving the cecum. Where laparoscopic appendectomy were performed.*

Conclusion: *The laparoscopic approach to an appendectomy is ideal in a patient with situs inversus.*

Keywords: *Laparoendoscopy, Acute abdomen pain, congenital visceral malrotation.*

INTRODUCTION

Situs inversus is a congenital visceral malrotation anomaly that occurs in approximately 2 per 10,000 live births, but it may go unrecognized until discovered during emergency surgery.⁽¹⁾ The differential diagnosis in situs inversus patients may not be readily seen in the emergency setting unless the patient is well known with such anomaly. Symptoms include reversed locations for common physical complaints, whereas physical signs can be used to diagnose and treat these patients. Laboratory data may also be used to diagnose and treat patients with this anomaly. Educating these patients about their malrotation would also aid in future treatment.⁽²⁾

CASE REPORT

A 37 years old man with a known history of situs invertus totalis presented to our ER with a three days history of left

lower abdominal pain, fever and vomiting, on examination, he was feverish with a temperature of 38 C and moderately dehydrated. There was tenderness with rebound tenderness in the left iliac fossa. Clinically he was diagnosed as acute appendicitis versus acute diverticulitis. His subsequent blood investigations data were as follows: white cell count $14.5 \times 10^3/\text{mL}$ (range 4.0-11.0), Urea 6.2 mmol/L (range 2.1-7.1), Creatinine 90 mmol/L (range 62-106), Glucose 4.5 mmol/L (range 3.6-5.5), Sodium 136, Potassium 3.2 and. A routine ultrasound examination of abdomen was requested, which revealed the liver on the left side, spleen on the right side and an inflammatory lesion in the left iliac fossa, confirming the diagnosis of acute appendicitis in situs invertus totalis. The heart sounds were heard over the right chest and subsequent plain X-ray of chest showed dextrocardia. The ECG findings were suggestive of dextrocardia, sinus rhythm. The CT with contrast confirmed the diagnosis of complete

situs inversus with dextrocardia and the appendix was seen as a tubular structure in the left iliac fossa, in front of left psoas muscle with surrounding inflammation (Figs. 1a-e). He was managed with intravenous fluids and parental antibiotics prior to his surgery.

At laparoscopy, the situs inversus findings were confirmed. The cecum and ascending colon was on the left side. An inflammatory tubular structure was seen in left iliac fossa and adherent to the parietal peritoneum of the

anterior abdominal wall, another 5 mm port was inserted in the right iliac fossa and a 5 mm port in the suprapubic region. The appendix was separated from the anterior abdominal wall and was acutely inflamed, but not perforated. The mesentery of the appendix was thick and bulky, diathermized and cut, the appendicular pedicle was ligated twice extraacorporeally. Appendectomy was performed and the appendix was removed from the umbilical port with the aid of zero camera inserted through the 5 mm port.



Fig 1a. Appendix is adherent to parietal peritoneum.



Fig 1d. Extracorporeal double ligation of the pedicle.



Fig 1b. Diathermy of the mesoappendix.



Fig 1e. Removal of the appendix through the umbilical port 10 mm with the aid of zero camera inserted through the left iliac fossa port 5mm.



Fig 1c. Division of the appendix.

Fig 1a-e.

DISCUSSION

Situs inversus is an uncommon condition caused by a single autosomal recessive gene of incomplete penetration.⁽³⁾ Although situs anomalies do not in themselves usually cause symptoms in adults, their presence often creates a confusing clinical picture, especially in the setting of diseases such as appendicitis, cholecystitis, and splenic infarction when the patient's pain does not correlate with the expected locations of the appendix, gallbladder, and spleen. Our patient presentation with left iliac fossa pain was typical for appendicitis. Likewise, situs anomalies may lead to diagnostic dilemmas on imaging examinations if radiologists are not aware of the spectrum of findings associated with these anomalies.⁽⁴⁾ The clinical examination of our patient's chest have shed light on the abnormality that might have been present i.e. chest X-ray confirmed the dextrocardia. This was followed by the abdominal ultrasound that confirmed Situs inversus . The recognition and correct characterization of situs anomalies is important in planning and performing surgical, radiologic, and endoscopic interventions.⁽⁴⁾ In our case we were able to plan our intervention after gathering all the preoperative data and during our intra-operative diagnostic laparoscopy. performed prior to actual procedure. Laparoscopy helps in identifying and treating acute surgical emergencies quickly and efficiently, when the clinical and imaging studies are difficult to interpret in situs anomalies. Our patient ultrasound and CT of his abdomen were accurate to identify the situs anomalies and confirm the clinical diagnosis of acute appendicitis. Laparoscopic approach to an appendectomy has proven to be an ideal procedure in our patient with situs inversus.

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