

## LEFT SIDED ACUTE APPENDICITIS WITH SITUS INVERSUS IN AN ELDERLY- AN UNUSUAL CASE

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### Abstract

**Situs inversus** and intestinal malrotation – symptoms of these congenital anomalies occur rarely after the age of one year. We present a case of left sided acute appendicitis in an adult who was previously unaware about his situs anomaly. A 50 years old man was admitted in surgery unit-III Chittagong Medical College Hospital on the 5<sup>th</sup> April'2007, with H/O acute left lower abdominal pain, vomiting and fever. Clinically he was suspected as acute diverticulitis with localized peritonitis. Subsequently, plain abdominal x-ray and ultrasound confirmed the diagnosis as situs inversus and acute left sided appendicitis. He was successfully underwent appendicectomy and his post operative recovery was uneventful. Although technically and clinically more challenging because of reverse presentations, only plain abdominal x-ray may be helpful in the diagnosis of situs inversus and left sided appendicitis.

### Background

It is general concept that situs inversus is a disease of infancy. It has associated congenital abnormalities and requires the emergency operation if a symptom develops. This report represents the rare case of situs inversus in an adult discovered by left sided acute appendicitis as it happened.

### Keywords

Appendicitis, situs inversus, malrotation.

### Introduction

Left sided acute appendicitis occurs in association with two types of congenital anomalies, situs

inversus and intestinal malrotation<sup>1</sup>. Intestinal malrotation is defined as an anomaly of rotation and fixation of the midgut<sup>2</sup>. Most children also have associated congenital anomalies. Mortality is high if the diagnosis is delayed. Less than 10% of cases of subclinical malrotation are found in school age children<sup>3</sup>. Because the appendix is located in an abnormal position, it is difficult to obtain an accurate diagnosis of left sided appendicitis. We do not often consider situs inversus during physical examination of an adult with acute abdominal pain which results in a delayed diagnosis. Sometimes these anomalies may go unrecognized until incidentally detected during imaging for unrelated condition or during emergency surgery<sup>4</sup>. Abdominal x-ray and ultrasound in addition to full blood count may help in the diagnosis. In difficult cases laparoscopy is indicated for diagnosis and appendicectomy<sup>5</sup>. CT imaging is useful in preoperative diagnosis of situs inversus<sup>1</sup>. Sometimes contrast enema with gastrographin reveals malrotation and situs anomaly<sup>6</sup> when the diagnosis for acute abdominal pain is not turned on.

### Case Report

A 50 years old man was admitted in surgery unit-III, Chittagong Medical College Hospital on the 5<sup>th</sup> April '2007, with history of left lower abdominal pain, vomiting, fever for the past 2 days. On examination he was febrile with a temperature of 37.5 ° C and had tachycardia 96/min. There was tenderness with rebound tenderness in left iliac fossa(LIF) and muscular rigidity in left lower quadrant. Clinically he was suspected as a case of acute diverticulitis with localized peritonitis. He was normotensive and non-diabetic. CBC-11600/mm<sup>3</sup> with 78% neutrophils, other haematological tests were within normal limit. X-ray abdomen revealed fundal gas shadow under the right dome of diaphragm and liver shadow under the left dome (Fig.1). Ultrasound of abdominal organs detected liver on the left side, spleen on the right side and an inflammatory mass in the LIF, collection in LIF and pelvis. This changed the diagnosis to situs inversus and inflammatory mass in LIF was thought to be appendicular origin. X-ray chest PA view revealed dextrocardia (Fig.2). ECG showed lateral ischaemia with

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dextrocardia. Echocardiography was consistent with dextrocardia and anterior ischaemia, ejection-fraction- 55% with good left ventricular function. Emergency appendicectomy was done by left sided grid iron incision (Fig.3), Caecum was in LIF, appendix was post- ileal in position with small pocket of pus, terminal ileum was oedematous, post operative recovery was uneventful.

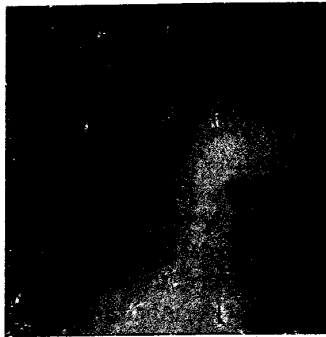


Fig-1: X-ray of abdomen in erect posture

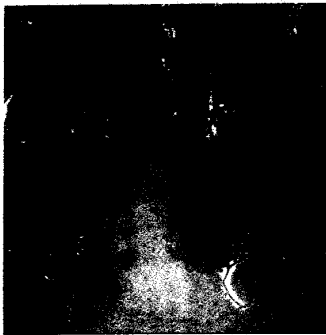


Fig-2: X-ray of chest PA view



Fig-3: Appendicectomy through left grid iron incision

### Discussion

The differential diagnosis of left lower quadrant abdominal pain in an adult man includes among others sigmoid diverticulitis, renal colic, epididymitis, incarcerated hernia, bowel obstruction, regional enteritis, psoas abscess and in the rare instances situs inversus with acute appendicitis<sup>7</sup>. The incidence of situs anomalies reported in the literature varies from 0.001 to 0.01% in general population<sup>4</sup>. The overlapping features of some situs anomalies and the presence of acute acquired diseases may result in confusing imaging findings. Diagnosis of acute disease processes is challenging in these patients due to altered anatomy<sup>8</sup>. The differential diagnosis of situs inversus patients may not be readily seen in the emergency settings and is often delayed as a result of lack of uniformity in physical signs<sup>9,10</sup>. Although the viscera are transposed, it is thought that the CNS may not show the reverse transposition, leading to confusing symptoms and signs. The pain of the left sided appendicitis has been reported to the right iliac fossa in about 50% of the patients of situs inversus<sup>4</sup>. The pain and tenderness in the left iliac fossa can also be due to right sided long dilated appendix located in the left lower quadrant<sup>11</sup>. CT-scan revealed the diagnosis pre operatively. So far case reports are available CT-scan is found useful in diagnosis. In one report contrast enema with gastrographin revealed diagnosis of left sided acute appendicitis with malrotation<sup>6</sup>. In other case report laparoscopy has its dual role in diagnosis and treatment<sup>4</sup>. In the present case, only plain abdominal x-ray and ultrasound were utilized for diagnosis of situs inversus and left sided appendicitis, which was confirmed per operatively.

### Conclusion

When we examine an adult with acute abdominal pain that is difficult to diagnose, we should perform a careful examination to determine whether the patient has situs inversus or malrotation. This report represents that even simple investigations like plain abdominal x-ray and ultrasound may be able to diagnose such situs anomaly with left sided appendicitis.

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