CASE REPORT

PERFORATED DUODENAL ULCER ASSOCIATED WITH *SITUS INVERSUS* AND DEXTROCARDIA

Mumtaz Ibrahim, Dildar Hussain, Seema Waheed*, Raazia Tahir, Ghulam Haider, Nauyan Ali, Shahid Latif Sarfraz**

Department of Surgery, Dubai Hospital, Dubai, *Department of Obstetrics and Gynaecology, Zulekha Hospital, Dubai, **Department of Surgery, Kalba Hospital, Kalba, Sharjah-UAE

A 32 years old gentleman, presented in emergency department, with complaints of sudden onset of severe upper abdominal pain, associated with nausea and vomiting. He was a known case of acid peptic disease. His abdominal examination showed signs of peritonitis. X-ray chest showed pneumoperitoneum, with dextrocardia. Ultrasound showed *situs inversus*. Exploration confirmed the diagnosis of perforated ulcer and *situs inversus*. Grahm's patch repair of perforation was done. His postoperative recovery was smooth.

Keywords: *Situs inversus*, perorated ulcer, dextrocardia

J Ayub Med Coll Abbottabad 2016;28(1):199–200

INTRODUCTION

Dextrocardia with *situs iversus* is a relatively uncommon condition. The first case of perforated duodenal ulcer with dextrocardia and *situs inversus* was reported in 1986.[1] This can be classified as total and partial. Total *situs inversus* is characterized by heart in the right side of the chest, liver and gall bladder in the left side. Exact aetiology of this condition is unknown. This is autosomal recessive condition caused by mutation in the gene encoding axonemal heavy dynein 11.[2] It may also be attributed to clockwise rotation of viscera during early embryonic life.[3]

We are reporting the first case of perforated duodenal ulcer with *situs inversus totalis*, presenting as peritonitis in a Dubai Hospital.

CASE REPORT

A 32 years gentleman, presented in emergency department, with complaints of sudden onset of severe upper abdominal pain, associated with nausea and vomiting of 8 hours duration. He was a known case of acid peptic disease. He had history of alcohol intake and smoking. His general and physical examination showed: a pulse rate of 110/minute and blood pressure of 100/80 mm Hg. He was febrile with 38^0c temperature and dehydrated. His abdominal examination revealed board like rigidity and guarding more pronounced in the upper abdomen.

Laboratory investigations showed haemoglobin of 10.9 gm/dl, Leucocytosis of $16x10^3$ IU. X-ray chest showed dextrocardia with pneumoperitoneum, and air fluid level in the stomach on the right side. (Figure-1) Ultrasound of the abdomen was done, which showed *situs inversus*, and free fluid in the peritoneal cavity. (Figure-2) A Clinical diagnosis of perforated peptic ulcer with dextrocardia and *situs inversus* was made. After resuscitation with intravenous fluids, antibiotics, pantoprazole and analgesics, a nasogastric tube and a Foleys catheter were inserted. The patient was explained about the disease, and after taking an informed consent, exploratory laparotomy was performed. Diagnosis of perforated duodenal ulcer with *situs inversus* was confirmed, showing liver in the left side, and spleen in the right side. Ascending colon and appendix were in the left iliac fossa, and sigmoid colon was in the right side. Grahm's patch repair of the perforated ulcer was done with polydioxanone (PDS) suture. A thorough peritoneal lavage was performed and abdomen was closed. His postoperative recovery was uneventful. He was started on oral diet and discharged on 5^{th} postoperative day. He was given eradication therapy for *H pylori*, on the advice of the gastroenterologist.

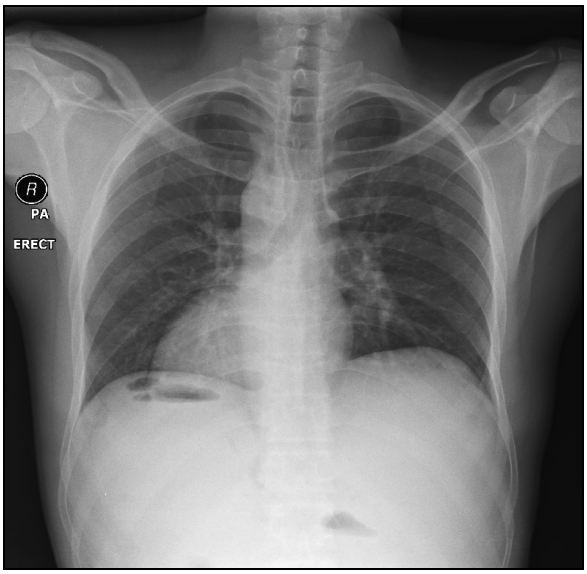

Figure-1: X ray chest, showing pneumoperitoneum and dextrocardia

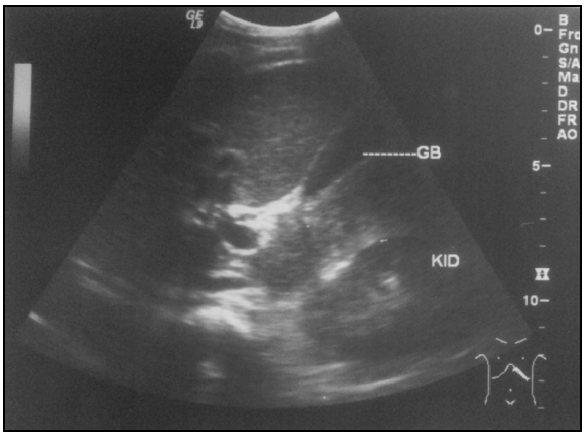

Figure-2: Ultrasound abdomen showing gall bladder in the left side of abdomen

DISCUSSION

Situs inversus with dextrocardia is a relatively uncommon anomaly. Its incidence ranges from 1 in 4000 to 1 in 20,000 population.[4] This is an autosomal recessive condition caused by mutation in the genes.[2] It is suggested that immobility of nodal cilia inhibits the flow of extra embryonic fluid during the embryonic period, which leads to the development of *situs inversus.*[5] Now this has been suggested that mutations affecting CCDC11 and DNAH11, with mutation in TGF-B family gene have significant role in the process of *situs inversus*.[6]

This condition usually remains undiagnosed until the patient presents with some respiratory, cardiac or abdominal complaints. Some cases of *situs inversus* associated with chest infection, lung abscess, perforated peptic ulcer, acute appendicitis and cholecystitis, have been reported in the literature.[7]

The diagnosis of this condition is usually done when patient is being evaluated for chest and abdominal complaints. Diagnostic modalities for the diagnosis of *situs inversus* and dextrocardia include: X-ray chest, Ultrasound abdomen, CT Scan abdomen with contrast, and echocardiography.[8]

Association of gastric carcinoma with *situs inversus* is very rare, and few cases have been reported.[9] Bile duct carcinoma and renal cell carcinoma in patients with *situs inversus* have been reported in the literature.[4,10] Repeated respiratory tract infections and lung abscess associated with *situs inversus totalis* was reported in another case report.[6]

Preoperative recognition of this condition is important for better explanation of the disease to the patient and choice of surgical procedure. During the procedure the surgeon has to be very careful, as he may not encounter the usual anatomy of the abdominal organs, and the surgeon should also look for the associated anomalies.

CONCLUSIONS

Situs inversus totalis is a rare condition. The surgeon and the radiologist should be familiar with the anomalies associated with this condition. Preoperative diagnosis is important for planning surgical procedure.

REFERENCES

1. Budhiraja S, Singh G, Miglani HP, Mitra SK. Neonatal intestinal obstruction with isolated levocardia. J Pediatr Surg 2000;35(7):1115–6.
2. Bartoloni L. Blovin JL. Pan Y. Gehrig C. Mai A. K Scamu N. Rossier C. *et al*. Mutation in the DNAH11(axonemal heavy chain gynein type 11) gene cause one form of situs inversus totalis and most likely primary cilliary dyskinesia. Proc Natl Acad Sci USA 2002;99(16):10282–6.
3. Djohan RS, Rodriguez HE, Weisman IM, Unti JA, Podbielski FJ. Laparoscopic cholecystectomy and appendectomy in situs inversus totalis. JSLS 2000;4(3):251–4.
4. Benhammana H, Kharmoum S, Terraz S, Berney T, Nguyen-Tang T, Genevay M, *et al*. Common bile duct adenocarcinoma in patient with situs inversus totalis- Report of a rare case. BMC Res Notes 2012;5:681.
5. Nonaka S, Tanaka Y, Okada Y, Takeda S, Harada A, Kanai Y, *et al*. Randomization of left –right asymmetry due to loss of nodal cilia generating leftward flow of extraembryonic fluid in mice laking KIF 3B motor protein. Cell 1998;95(6):829–37.
6. Agarwal A. Situs inversus totalis complicated with left middle lobe lung abscess. NJIRM 2013;4(2):178–80.
7. Tayeb M, Khan FM, Rauf F. Situs inversus totalis with perforated duodenal ulcer: a case report. J Med Case Rep 2011;5:279.
8. Bhattacharyya SK, Mandal A,Thakur SB. Clinicoradiological profile of lung abscess- Analysis of 120 cases. Int J Med Med Sci 2010;2(7):222–5.
9. Kim HB, Lee JH, Park DJ, Lee HJ, Kim HH, Yang HK. Robot assisted distal gastrectomy for gastric cancer in situs inversus totalis patient. J Korean Surg Soc 2012;82(5):321–4.
10. Treiger BF, Khazam R, Goldman SM, Marshall FF. Renal cell carcinoma with situs inversus totalis. Urolgy 1993;41(5):455–7.

Address for Correspondence:

Dr. Mumtaz Ibrahim, Surgery Department, Dubai Hospital, PO Box 7272, Dubai-UAE
Tel: +971 501311071
Email: itsmumtaz@hotmail.com