A case of splenic rupture in patient of situs inversus

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Abstract To the best of our knowledge association of splenic rupture caused by blunt trauma in association with situs inversus has not been reported before. There is no report of emergency splenectomy for situs inversus before. We are reporting a case of splenic rupture caused by blunt trauma in association with situs inversus. Preoperative diagnosis of associated congenital heart defects and associated anatomical defects is necessary before operation.

Keywords Situs inversus · Splenectomy

Introduction

Situs inversus is a congenital condition in which the major visceral organs are reversed or mirrored from their normal positions [1–8]. The prevalence of situs inversus varies among different populations but is <1 in 10,000 people (1:5,000–1:20,000) [2–4]. If the heart is swapped to the right side of the thorax, it is known as situs inversus with or dextrocardia or situs inversus totalis [5]. If the heart remains in the normal left side of the thorax, a much rarer condition (1 in 22,000 of the general population), it is known as situs inversus with levocardia or situs inversus incompletu [6]. It is generally an autosomal recessive genetic condition, although it can be X-linked [7]. There is a 5–10% prevalence of congenital heart disease in individuals with situs inversus totalis [8], most commonly transposition of the great vessels [8]. The incidence of congenital heart disease is 90% *in situs inversus* with levocardia [6]. Situs inversus totalis may be associated with primary ciliary dyskinesia, is known as Kartagener syndrome [3].

Case report

18-year-male was admitted in emergency ward of S.R.N. Hospital Allahabad on 27/08/09 with history of pain abdomen for 6 hours and vomiting 2 episodes. He had history of fall from about 6 feet, 8 hr before admission. On examination abdomen was tense, tender and distended. Bowel sound was absent. At the time of admission pulse rate was 120/min and blood pressure was 100/72 mmHg. Externally bruise was visible over right hypochondrium. A provisional diagnosis of perforation peritonitis or liver laceration was made. Chest X-ray confirmed clinical examination finding by showing cardiac shadow on right side. USG scan showed moderate fluid and spleen on in right hypochondrium with an area of inhomogeneous ecotexture of about 29.4 × 36.6 × 28.0 mm in middle 1/3rd. Diagnosis of situs

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invertus with splenic laceration was made. Patients was hemodynamically stable. Further investigations including CT-Scan and echocardiography was done.

CT-Scan (Fig. 3) situs inversus with large splenic laceration and small right renal laceration at middle and lower pole associated with moderate hemoperitoneum and large hypodense perisplenic hematoma at lower pole.

Exploratory laparotomy was done. About 1500 ml of hemoperitoneum was present. Liver was found on the left side of abdomen with gall bladder and ruptured spleen on right side (Fig. 1). Complete situs inversus observed with caecum and appendix on left side. Splenectomy was done (Fig. 2). Postoperative events were uneventful and he was discharged on day 7.

Discussion

Situs inversus is a rare congenital condition. It leads to difficulty in diagnosis of surgical and medical conditions

Fig. 1 Liver on left and spleen on right

Fig. 2 Lacerated spleen

Fig. 3 CT-Scan

due to presence of sign and symptoms at different sites. Anesthetic management is further complicated by associated congenital heart defects. Preoperative cardiac evaluation and anatomical evaluation is necessary to avoid catastrophe. To the best of our knowledge Association of splenic rupture caused by blunt trauma in association with situs inversus has not been reported before. There is no report of emergency splenectomy for situs inversus before. In our case grade 4 splenic laceration was present. We did not found difficulty in splenectomy but anatomical variations must be considered during splenectomy specially in elective cases.

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