SITUS INVERSUS TOTALIS WITH LIVER ABSCESS

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ABSTRACT

A case of multiple liver abscesses in a patient with situs inversus totalis is presented. Initially the patient was treated conservatively and remained symptom free for 4 days of hospital stay. On a follow up visit after 1 week the patient had high grade spiking fever and ultrasonography showed expanding multiple abscesses. The patient was restarted on intravenous antibiotics which resolved the disease.

Keywords: *Situs Inversus Viscerum, Situs Inversus Totalis, Liver Abscess, Kartagener's Syndrome, Situs Solitus, DNAH11, Mirror Image*

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INTRODUCTION

The first case of dextrocardia was reported in a male in 1906[1]. Situs inversus is a condition of unknown etiology[2]. Situs inversus totalis can be caused by mutation in the gene encoding axonemal heavy chain dynein 11 (DNAH11). Situs inversus viscerum in the mouse is an autosomal recessive trait[3]. Layton (1976) postulated that the normal allele shows complete dominance and controls normal visceral asymmetry. Absence of control allows the situs of visceral asymmetry to be determined randomly[4]. Lian et al. (1986) found an increased incidence of situs inversus in the offspring of older fathers[5]. The incidence is thought to be in the region of 1:5000 to 1:20000[6]. It is the mirror image of situs solitus. The pulmonary atrium, stomach, single spleen, and cardiac apex and aortic arch are on the right with a right-sided bilobed lung. Congenital heart disease is present in 3-5% of patients with situs inversus and Kartegener syndrome in 20%[7]. Situs inversus can be classified further into situs inversus with dextrocardia or situs inversus with levocardia. The incidence of isolated levocardia has been estimated at approximately 0.6 per 10,000 livebirths. It is estimated that over 90 percent of affected individuals have associated heart disease[8].

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CASE REPORT

A twelve years old patient presented with twenty days history of high grade fever with chills, anorexia, epigastric and left hypochondrial pain. On examination, a young, emaciated, lethargic, dehydrated, earthy looking girl with pulse rate of 100 beats per minute, temperature of 101.4 F and blood pressure of 110/70 mmHg. The fever was spiking in nature. Abdomen was scaphoid shaped with tender and guarding epigastrium and left hypochondrium. Cardiovascular examination revealed apex beat in right fifth intercostals space just medial to

CHEST X-RAY WITH DEXTROCARDIS, ELEVATED LEFT HEMIDIAPHRAGM & LEFT STOMACH BUBBLE

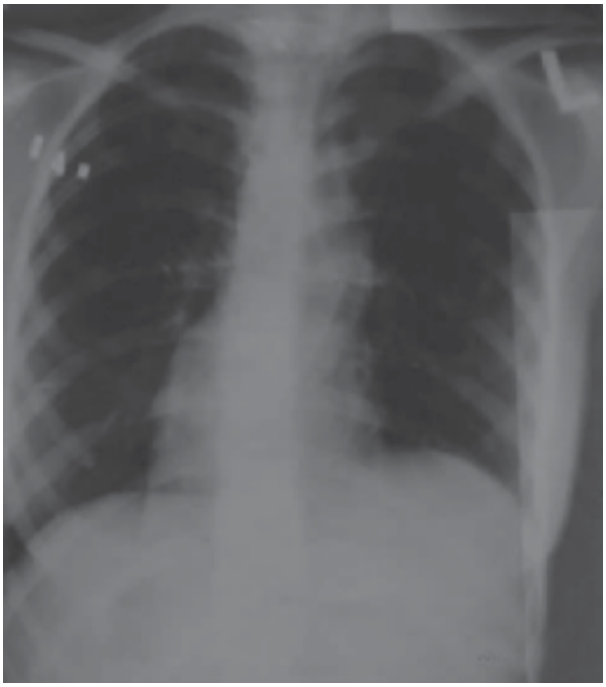

Fig. 1

FLUROSCOPIC STUDY SHOWING DEXTROCARDIA

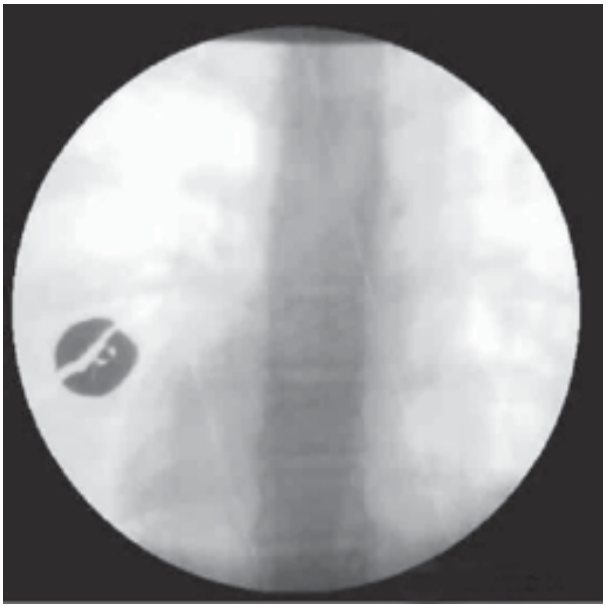

Fig. 2

ULTRASONOGRAPHY, SHOWING ABSCESS IN THE RIGHT LOBE OF THE LIVER & HEPATOMEGALY

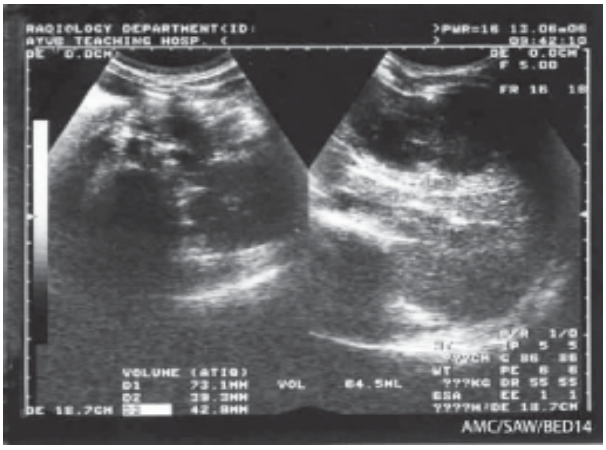

Fig. 3

midclavicular line. Chest x-ray demonstrated dextrocardia, right sided stomach bubble and higher level of left hemi-diaphragm as compared to right sided[1-9]. On fluoroscopic study, right sided beating heart was observed. On Ultrasonography, spleen was found to be on the right side and liver on left side with an ill defined, echogenic area of 7.3cm x 4cm x 4cm dimensions and approximately of 65 ml in volume, liver abscess, in the right anterior lobe of liver. On contrast studies, sigmoid colon was found to be on the right side. The patient was managed conservatively with intravenous metronidazole and ciprofloxacin. After one week, the patient presented with relapse after becoming asymptomatic initially. Antibiotic trial with intravenous metronidazole and cefotaxime was given, to which the patient responded and became

CONTRAST STUDY: (a) ANTERIOPOSTERIR VIEW (b) RIGHT LATERAL VIEW WITH RIGHT SIDED SIGMOID & DESENDING COLON

Fig. 4

asymptomatic. After three days of admission the patient was discharged and on weekly follow-up the patient remained symptoms free.

DISCUSSION

Hepatic abscess may be bacterial, parasitic, or fungal in origin. Development of abscess follows a suppurative process elsewhere in the body. Many abscesses are due to direct spread from biliary infections.

Abdominal infections such as appendicitis, diverticulitis may spread through the portal vein to involve liver with abscess formation. In 25% of cases, no antecedent infection can be documented ("cryptogenic" abscess)[9]. Common organisms are: Enterobacteriaecea (includes E.coli, serratia, klebsiella, enterobacter, citrobacter), enterococci, bacteriodes, Entamoeba histolytica[10]. In travelers with fever, abdominal pain, and hepatomegaly amebic liver abscess must be considered. Medical treatment with metronidazole is effective in more than 90%. Only in very few cases there is a need for invasive therapeutic modalities[11]. Antibiotic options are; Ampicillin 1-2 grams IV every 4 to 6 hours plus Gentamycin IV plus Flagyl 500mg IV every 6 to 8 hours OR Flagyl 500mg IV every 6 to 8 hours plus [Ceftriaxone or Cefotaxime or Unasyn or Timentin or Ciprofloxacin]. (Note Flagyl present for amoeba as well as anaerobes)[10]. In our case, no antecedent infection was found and treated with intravenous metronidazole and cefotaxime and the patient became symptoms free. So it is concluded that antimicrobial therapy is the mainstay in the treatment of liver abscess and only few cases require invasive treatment modalities.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.