

Incidentally Detected Situs Inversus Totalis in FDG PET/CT in a Case of Gastro-esophageal Junction Carcinoma: A Case Report

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Abstract: Situs inversus totalis (SIT) is a rare congenital condition in which the viscera are transposed as a mirror of normal arrangement. We present a 70-year-old man with Gastro-esophageal (GE) junction carcinoma who underwent FDG PET/CT for initial staging, in addition to hypermetabolic lesions in the GE junction, scan showed transposed heart, liver, spleen and stomach, suggestive of SIT.

Keywords: Situs inversus totalis, Gastroesophageal cancer, Staging, FDG PET/CT.

INTRODUCTION

Situs inversus is a rare congenital anomaly characterized by transposition of organs to the opposite side of the body. The overall incidence of this anomaly is in the region of 1:5000 to 1:20,000, and being slightly more common in males [1]. Situs inversus may be complete (situs inversus totalis)(SIT) or partial (situs inversus partialis) confined to either the thoracic or the abdominal viscera. Unlike partial situs inversus, in cases of SIT, the left and right aspects of the thoracic and intra-abdominal organs are inverted like a mirror image. This anomaly apparently does not influence normal life expectancy [2]. Generally, this rare genetic anomaly is discovered or diagnosed incidentally during thoracic and abdominal imaging. The exact etiology of situs inversus is still unknown, but an autosomal recessive inheritance mode has been speculated [3]. SIT itself is not a premalignant condition; however, rare synchronous and metachronous multiple primary gastrointestinal malignancies have been reported in the literature [4].

CASE REPORT

We present a case of 70 year old man with dysphagia and he underwent endoscopy which showed a GE junction growth which on biopsy confirmed adenocarcinoma. He was referred for FDG PET/CT for staging which showed an intensely hypermetabolic uptake (maximum standardised uptake value (SUVmax

of 8.7) in the primary site of GE junction with no metastasis (Figure 1). Also incidental SIT noted with heart on right side, liver on left side and spleen on right side. (Figure 2). Various modalities can be used to diagnose SIT, such as electrocardiograms, radiographic studies, and computed tomography scans with oral and intravenous contrast, ultrasound, and barium studies [5]. There are case reports of FDG PET /CT incidentally detecting SIT [6, 7]. This is the first case of FDG PET/CT showing SIT in a GE junction Carcinoma. There are no data on the relationship between gastric cancer and situs inversustotalis. It is very important to carry out a careful and cautious assessment of abnormalities by preoperative examination, especially by laparoscopic procedures [8].

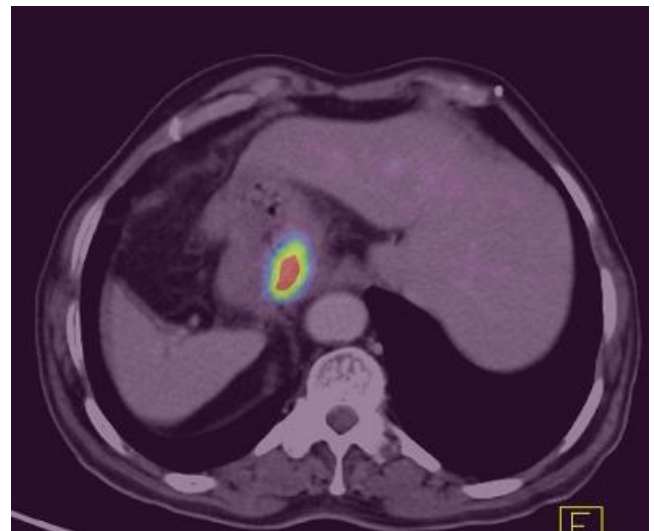


Figure 1: Axial fused F-18 FDG PET/CT positron emission computed tomography-computed tomography (PET /CT) showing hypermatbolic uptake in Gastroesophageal junction carcinoma.

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Figure 2: Coronal Fused F-18 FDG PET/CT showing heart on the right side and liver on the left side suggesting situs inversus totalis.

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