Introduction:

Situs inversus totalis is an uncommon congenital abnormality involving the abdominal and thoracic organs being oriented in a mirror image relative to midline. Although the exact incidence is unknown, it is estimated that situs inversus occurs in 0.00025%-0.025% of the population. In some cases, SIT is associated with other anomalies such as biliary atresia, visceral vascular anomaly.

SIT was regarded as an absolute contraindication for LT. The asymmetric position causes technical difficulties during the positioning of the graft and vascular anastomosis. Biliary atresia (BA) is the most common indication for LT in SIT patients because 10%-20% of SIT patients are also born with BA.

The most liver transplantation cases in situs inversus patients are in the pediatric population, and liver transplantation in adult SIT patients is rare. There are few adult cases reported in the literature with discussion of technical considerations using living donor. We present the case of living donor liver transplant in an adult SIT patient using a left lobe graft with a successful result.

Case report:

The patient was a 58-year-old man with a history of cryptogenic cirrhosis and SI presented for evaluation. His liver disease was complicated by multiple episodes of hemorrhage from esophageal varices, voluminous ascites and spontaneous bacterial peritonitis. He had been subjected to numerous antibiotic regimens and for the treatment of spontaneous bacterial peritonitis and many sessions of ligation of esophageal varices. Despite the progression of his symptoms, his model for end-stage liver disease score remained at 18, and LDLT was considered appropriate. The donor was his 25 year old son, without any comorbidities, and normal liver anatomy.

The procedure was a LDLT using left lobe including the middle hepatic vein. The total ischemia time was 80min, with 32 min of warm ischemia. The recipient was discharged from the ICU in postoperative D3 and remained hospitalized until the D7 postoperatively to adjust immunosuppressive medication.

Discussion:

SIT per se is not a contraindication for liver transplantation. Preoperative evaluation of the native vascular and biliary anatomy is essential. In hindsight, a Roux-en-Y bilio-enteric anastomosis at the outset would have been beneficial and should always be considered while planning the surgery.

There is limited literature regarding the successful performance of liver transplantation in patients with situs inversus. Determination of the best surgical approach has been inconsistent due to variation in donor and recipient characteristics. The main challenge in liver transplantation in situs inversus involves the correct positioning of the liver.

In present case the procedure was a LDLT using left lobe including the middle hepatic vein. In the both procedures the patients are alive and well, on his second year after surgery. The knowledge of exact anatomy, meticulous preoperative planning, and optimization of the recipients condition are essential for the operative success.

References:

- Living Donor Liver Transplantation Using a Right Lobe Graft in an Adult With Situs Inversus Julie K. Heimbach,1 K.V. Narayanan Menon,2 Michael B. Ishitani,1 Scott L. Nyberg,1 Christopher J. Jankowski,3 Keith D. Lindor2 and Charles B. Rosen1- Liver Transplantation, Vol 11, No 1 (January), 2005: pp 111–113