

**PONS HEPATIS – A BRIDGING HEPATIC PARENCHYMA OVER FISSURE FOR
LIGAMENTUM TERES - CASE REPORT****Dr. Jahira Banu T.¹ and Dr. Yogesh Ashok Sontakke*²**¹Junior Resident, Jawaharlal Institute of Postgraduate Medical Education and Research, Puducherry, India.²Associate Professor, Jawaharlal Institute of Postgraduate Medical Education and Research, Puducherry, India.***Corresponding Author: Dr. Yogesh Ashok Sontakke**

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ABSTRACT

Knowledge of morphological variations on the surface of liver is important to have safe surgical outcome. During routine dissection for MBBS students, a variant liver was found. A liver had a bridging tissue that crossed the fissure for ligamentum teres hepatis. The bridge of tissue connecting quadrate lobe with left lobe of liver on its inferior aspect called pons hepatis. Size of the bridge was 3 cm x 2.5 cm. A conical process measuring about 1.5 x 1 cm with apex pointed anteriorly also found extending from bridge. The liver variations on the external surface of liver is important as it may mislead the surgeons and radiologist.

KEYWORDS: Liver, Ligamentum teres hepatis, pons hepatis.**INTRODUCTION**

Liver is the largest intra-abdominal organ located in the upper outer quadrant of abdomen. It is divided into four lobes by the ligamentous attachments and into eight functional segments based on the vasculo-biliary structures by Couinaud. Fissure for the ligamentum teres hepatis continues with the fissure for ligamentum venosum and separates the large right lobe from the left lobe. Fissure for ligamentum teres contain remnants of left umbilical vein, major branch of left hepatic vein, umbilical portion of left portal vein, segmental bile duct, terminal branches of left hepatic artery.^[1]

The ligamentum teres fissure acts as a surgical landmark for upper abdominal surgery and liver surgery. The presence of numerous structures in the ligamentous fissures made its importance more for the surgeons and radiologists.^[2]

CASE REPORT

During routine dissection for the undergraduate students, we noticed a variant liver in a male cadaver. Gross observation of liver was normal and healthy. The falciform ligament attached normally over the anterior surface of liver and fissure for ligamentum venosum was found normally. Bridge of tissue was found across the upper third of ligamentum teres fissure along with a conical process projecting anteriorly. (Figure 3 and 4) The measurements were taken using measuring scale. The length of pons hepatis (bridging tissue) was 3 cm x 2.5 cm and the conical process about 1.5 cm x 1 cm and the remaining fissure was 3 cm in length. Upon

dissection of ligamentum teres fissure shows the ligamentous structures and fibrosed part of left umbilical vein joins to left branch of portal vein. Histology of pons hepatis stained with haematoxylin and eosin shows normal vascular parenchyma with large vasculo-biliary structure. (Figure 1 and 2).

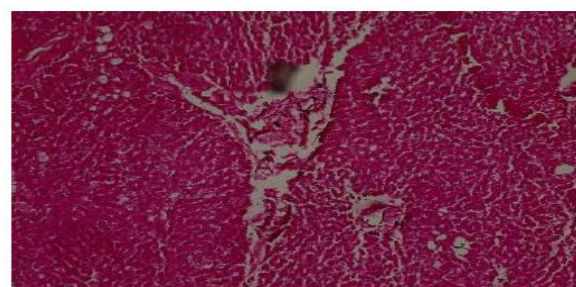
**Figure. 1.****Figure. 2.**

Figure. 1: Shows normal liver parenchyma. **Figure 2** shows portal pedicle. HA – hepatic artery, BD – bile duct, PV – portal vein.

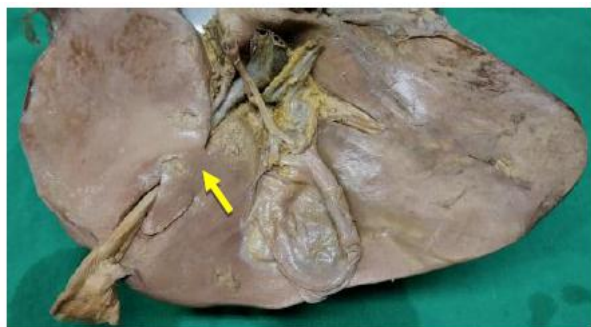


Figure. 3.

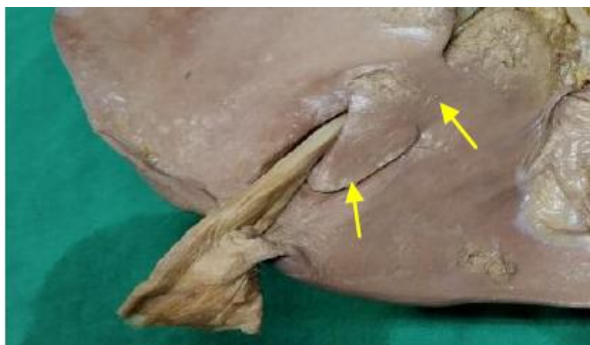


Figure. 4.

Figure. 3: Yellow arrow shows pons hepatis connecting the left lobe of liver to the quadrate lobe of liver. **Figure 4:** Upper arrow shows pons hepatis and lower arrow shows conical projection from the pons hepatis.

DISCUSSION

The liver anomalies are not uncommon. Reports on anomalies of ligamentum teres fissure were scanty. We report here one variant liver with bridge of tissue connecting the left lobe to quadrate lobe of liver on its inferior surface over the ligamentum teres fissure. The normal fissure for ligamentum teres was not visible due to the presence of this bridge of tissue. The bridging tissue called pons hepatis present only in the upper third of fissure with a conical process projecting anteriorly. Previous literature explained that bridge of tissue connecting the left lobe to the quadrate does shows no major vasculo-biliary structures, so it can be cauterized easily.^[1] We have taken the bridging tissue after its gross observations and measurements for histology processing. The histology of bridging tissue showed, the presence of major vasculo-biliary structure with surrounding normal liver parenchyma.

Ebby *et al* described the presence of complete bridge and ligamentum teres fissure was not visible.^[3] Aktan *et al* reported the absence of ligamentum teres fissure along with absence of quadrate lobe.^[4] Nayak BS *et al* described a variant liver with complete obliteration of fissure for ligamentum teres.^[2] Nayak BS *et al* reported an accessory liver lobe over the ligamentum teres fissure and the histology of accessory lobe showed the normal liver architecture.^[7]

The vasculo-biliary structure called the liver pedicles acts as a landmark for defining the segments of liver. To avoid perioperative bleeding, the anatomy of portal pedicles is important.^[5] The presence of vasculo-biliary structures in the pons hepatis should be borne in mind important while doing surgery in and around the ligamentum teres fissure. The ligamentum teres fissure is used as a radiological landmark in case of pneumoperitoneum. The presence of pons hepatis may obscure the view of ligamentum teres fissure. Therefore, the pons hepatis structure and its content should be borne in mind while doing radiological and surgical procedures.^[6]

CONCLUSION

The knowledge of the possibility of pons hepatis over the ligamentum teres fissure and the presence of vasculo-biliary structures in the pons hepatis may help surgeons and radiologist to avoid surgical complications and misinterpretations of diagnosis.

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