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Case report *Medical research*

Elongation of the left lobe of liver: A case report

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ABSTRACT

Elongation of left lobe of liver may be attributed due to its non regression during embryonic development. Deformities of the liver confined to left lobe sufficiently extensive may cause symptoms due to pressure over fundus of stomach, spleen which may cause pain in epigastrium and left hypochondrium. Such cases regarded as analogous were recorded (Langenbuch, in Deutsche Chirurgie, I897, Lie-ferung 45, Leber u. Gallenblase, II 2).The study was conducted by observing livers from cadavers in Anatomy dissection hall of Apollo institute of medical sciences and research. It was observed, liver from one of the cadavers has presented an elongated left lobe. The findings of the present study may benefit radiologists and surgeons to diagnose properly and plan appropriate surgical approach. Such cases are usually treated by incision and resection of left lobe of liver.

Keywords: Liver, Lobes, congenital anomalies, abdominal symptoms.

INTRODUCTION

The embryological development of liver begins as an ventral out pouch on endodermal tube at the junction of foregut and midgut. The liver is the most massive of the viscera, occupying a substantial portion of abdominal cavity. It has four lobes or eight segments. A sound knowledge of normal Anatomy of liver is very important in the era of Diagnostic imaging and minimally invasive surgical procedures. It is essential to life, since it carries multiple metabolic activities necessary for homeostasis, alimentation and defence. It's a wedge shaped organ, it is convex in front, to the right. It is customarily apportioned by anatomists into larger right lobe and much smaller left lobe. During

foetal lie, the left lobe is as large as right lobe and the haematopoietic activity of liver is assumed by spleen and bone marrow, because of which left lobe undergoes some degeneration. This paper discusses the elongation of the left lobe of the liver. Demarcation of the right and left lobes anteriorly, is along the line of attachment of the falciform ligament. Posteriorly, it is along the fissure for ligamentum venosum, and inferiorly, along the fissure for ligamentum teres. A general review of hepatic anomalies can be divided into two categories, i.e. anomalies due to defective development and anomalies due to excessive development of the liver by Champetier J.et al. Despite recent technological advances in the evaluation of liver parenchyma using imaging techniques, such as computed tomography or nuclear magnetic resonance (Meirelles,Tiferes and D'ippolito, 2003), detailed studies of the macroscopic anatomy of cadaveric livers can still contribute to the identification of important anatomical variations. In many cases, such variations have enabled researches to understand specific responses to therapies that have been applied in the treatment of liver disease (1).

CASE REPORT

During routine cadaveric dissection in the Anatomy Department of Apollo Institute Of Medical Sciences and Research, a cadaver of a male aged 55 years was observed having an elongated left lobe of liver. The liver was taken out and was preserved in 10 %formalin. This lobe was found to be covering the fundus of stomach and diaphragmatic surface of spleen. On gross examination, the colour, consistency and texture of elongated left lobe of liver was studied and various parameters like length, breadth, thickness were measured under daylight. The land marks were taken at base, middle, apex of elongated lobe, at tuber omentale, at the upper end of the left lip of the groove for ligamentum venosum, and at the lower end of the left lip of the groove for ligamentum teres hepatis. Fixed planes for divisions of the left and right lobes of the liver were considered as described above.

Table 1 Measurements of left lobe of abnormal liver no.1 and normal liver

Measurements	**Abnormal liver No.1**	**Normal liver of similar weight and size**
From upper end of left lip of groove for ligamentum venosum up to apex of left lobe	10.7 cm	6.7 cm
From lower end of left lip of groove for ligamentum teres up to apex of left lobe	17.5 cm	14.7 cm
From tuber omentale to apex of left lobe	11.2 cm	8.4 cm
Sum	39.4	29.8
Mean	13.133	9.933
S.D	±3.790	±4.215
S.E.M	±2.188	±2.433

DISCUSSION

Liver is the chief haemopoietic organ in the foetus. During 12 weeks of gestation it fills the abdominal cavity and left lobe of liver is nearly as large as right lobe of liver. The branches of portal vein and tributaries of hepatic veins are very well developed before birth and most of them regress after birth. After 12 weeks of intra embryonic life, haemopoietic

activity is taken up at a maximum by spleen and bone marrow because of which there is regression of left lobe.(2). Congenital anamolies of liver pertaining to left lobe should be studied carefully which can cause pressure symptoms and pain. In literature till date only one case is reported where analogous left lobe of liver was found. It was reported (3)in 'congenital elongation of the left lobe of the liver', that 'a girl 16 years of age, for a painless tumorous distention of the epigastrium, which she had noticed for nine years, though she had been suffering from spells of distressing discomfort at times for only about two years. On operation, the left lobe of the liver extended entirely across the lesser curvature into the left hypochondrium, where it was flattened out at the extremity over the spleen. The photograph and coloured plate show the tumorous distention and the exact relation of the tongue-like elongation of the organ at the time of operation. The length of the lobe from the free margin of the liver to its apex was six and one-quarter inches; width, one and three-quarters inches. It was also reported (4) from computed tomographic scan (CT scan) the presence of elongated left lobe of liver extending posteriorly and laterally to spleen. According to Hagga et al (5), (6) the elongation of left lobe can extend as far as left upper quadrant of liver, covering the spleen Reduction in the size of left lobe of liver is attributed due to diminishing haematopoietic function during last two months of intrauterine life (7).

CONCLUSION

Persons with elongated left lobe may present with non specific abdominal pain or epigastric pain. The knowledge of such variations is important for Anatomists, Radiologists and Surgeons for proper diagnostic and therapeutic purposes. Elongated left lobe of liver may also harbor hepato cellular carcinoma and metastases.

FIGURE LEGENDS

Figure 1: Liver in situ

Figure 2: Liver with elongated left lobe- Visceral surface and normal liver

Figure 3: Liver with elongated left lobe- Anterior surface



Figure 1 Liver in situ



Figure 2 Liver with elongated left lobe- Visceral surface and normal liver



Figure 3 Liver with elongated left lobe- Anterior surface

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