

Variations in Quadrate Lobe of Liver

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Anatomical variations in the quadrate lobe of liver had been seen in 3 cadavers out of 20, in routine dissection in anatomy dissection hall of Fatima Jinnah Medical College, Lahore. The incidence of variation was 15%. In two of the variant cases quadrate lobe was on the inferior surface but was reduced to small appendage and in one of the variant case quadrate lobe and ligamentum teres were present on anterior surface of liver instead of inferior surface.

Key words: Quadrate lobe

Anatomy is central to medical terminology. The central concepts in many medical terms is of abnormal structure or process combined with anatomical site. Liver is largest gland in body and is situated in epigastrium, right and left hypochondrium. It is invested by visceral layer of peritoneum. Liver is divisible into large right and much smaller left lobe on the anterior and superior surfaces the two lobes meet along the line of attachment of falciform ligament. On posterior and inferior surfaces the separation is more obvious due to two fissures i.e. fissure for ligamentum venosum and fissure for ligamentum teres.

The portion of right lobe which adjoins the left lobe on inferior and posterior surfaces is further subdivided into two smaller lobes termed quadrate and caudate lobes¹.

Quadrate lobe is placed on inferior surface and is somewhat rectangular and is bounded by fissure for ligamentum teres on left and by fossa for gallbladder on right. Caudate lobe is situated on posterior surface which is bounded on left by fissure for ligamentum venosum and on right by groove for inferior vena cava.

Liver is not subject to great or frequent deviations from its usual form and relation. There is a report of an accessory liver adherent to pancreas. Its bile duct drained into the pancreatic duct system². A detached portion forming a sort of accessory liver is occasionally found attached to left extremity of gland by fold of peritoneum containing blood vessels³.

Materials and methods

Routine abdominal dissection of cadavers was done in the anatomy dissection hall of Fatima Jinnah Medical College Lahore. Livers were dissected out, their surfaces and lobes were studied. Twenty dissected specimens were taken and divided into two groups. Normal livers were labeled as group A, whereas variant liver were labeled as group B.

Results

Three out of twenty dissected livers showed anatomical variations (Table 1). In two of the specimens quadrate lobe was present on the inferior surface but was reduced to small appendage (Fig. 1). In one of the specimens out of 3 quadrate lobe and ligamentum teres was absent on inferior

surface and was present on the anterior surface of liver (Fig 2,3).

The incidence of variation turns out to be 15% (Graph 1).

Table 1 anatomical variations

Groups	Results
A	85%
B	15%

Graph 1. Anatomical variations

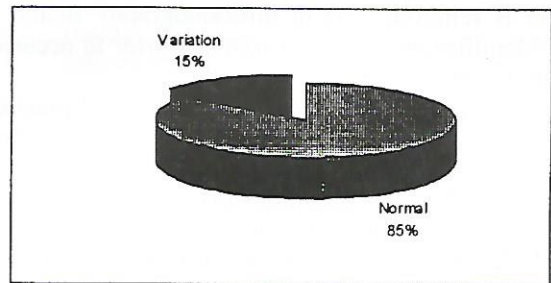


Fig. 1. Quadrate Lobe

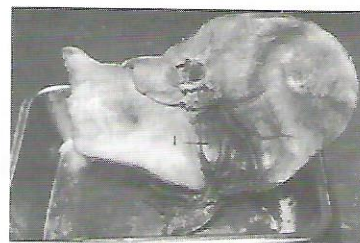


Fig. 2. Anterior surface 1-Ligamentum teres. 2-Quadrate lobe.

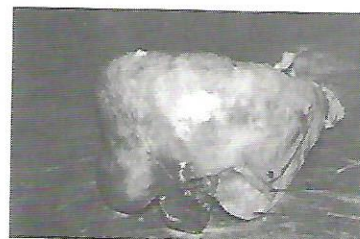
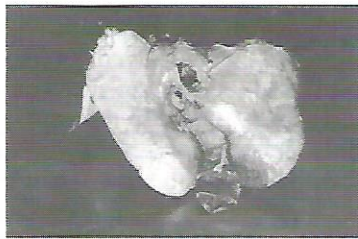


Fig. 3. Inferior surface; quadrate lobe is absent



Discussion

Anatomical variations in the liver have been previously reported in many studies^{2,3,5}. Knowledge of anatomical variations is important clinically. An accessory lobe may stimulate tumor. If accessory lobe has a pedicle, torsion is common event leading to discovery of abnormal mass.

Variations in quadrate lobe of liver have been infrequent. No report regarding total absence of quadrate lobe on inferior surface and its shift to anterior surface is present. Quadrate lobe has been labeled as medial inferior segment (segment IV)⁴. Knowledge of hepatic segments is important for surgeons during hepatectomy, in which part of liver is removed. Use of ultrasonography should now allow identification of such variations prior to occurrence of a complication.

Four case studies encountered in surgical practice in adult have been reported. In these cases accessory lobe has been found in infrahepatic position. Despite their diversity of shape and size such accessory lobes had common features allowing them to be considered as an entity⁵.

Agenesis of right lobe of liver was diagnosed by computed tomography, which excluded secondary liver atrophy due to cirrhosis or tumor. Main pathophysiological

hypothesis was arrest of hepatic development during fetal life⁶. Cases have been reported in which absence of left lobe of liver had been diagnosed on C.T. scan or by radiological examination^{7,8,9,10}.

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