CONGENITAL MALFORMATION OF THE LIVER — ABSENCE OF THE LOBUS SPIGELII, RUDIMENTARY QUADRATE AND LEFT LOBES, WITH ENLARGEMENT OF THE RIGHT LOBE.

By P. A. WAKEFIELD, Rush Medical College, Chicago, Ill., U.S.A.

KAUFMANN, Ziegler and others, in recent works on pathologic anatomy, divide anomalies of the liver into two classes, congenital or acquired. The congenital malformations are of interest, as they throw light on some important problems in the morphological anatomy of the gland.

Abnormal lobulation is not very uncommon, in rare and extreme cases leading to the development of accessory livers. One or the other of the principal lobes may be abnormally small or even completely absent, in which case the other parts hypertrophy. Such malformations are not common, and have but little clinical significance.

"Variations in form occur occasionally, but they are more rare in the liver than in almost any other organ of the body. I have seen the left lobe so small as to appear a mere appendage to the right, being connected to it only by a thin and narrow isthmus. Cruveilhier records an instance in which the left lobe was attached to the right merely by a vascular pedicle about half an inch in length, the extremity of the lobe being adherent to the upper part of the spleen."[1]

At a recent post-mortem at the Cook County Hospital, the following rare instance of congenital anomaly of the liver was found. The liver under consideration was taken from a man, a butcher, 53 years of age. The clinical diagnosis was apoplexy. The following is an extract from the post-mortem record:—

"There was an extensive subdural meningeal hemorrhage. There were no scars on the abdomen. The liver occupied the right half of the abdominal cavity, displacing the cæcum to the median line. There was no liver tissue to the left of the

[1] Erasmus Wilson in *Todd's Cyclopædia*, vol. iii. p. 163.

coronary ligament. The organ extended from the ensiform appendix to below the umbilicus in the median line, and stretched from thence to the right iliac fossa. From the clinical history we learned that its lower border was not palpable during life. The gland measured 32 5 centimetres from above downward, 22·5 centimetres from right to left, and 11 centimetres in thickness. It weighed 2550 grams."

The chief malformation of this liver consists in the absence or

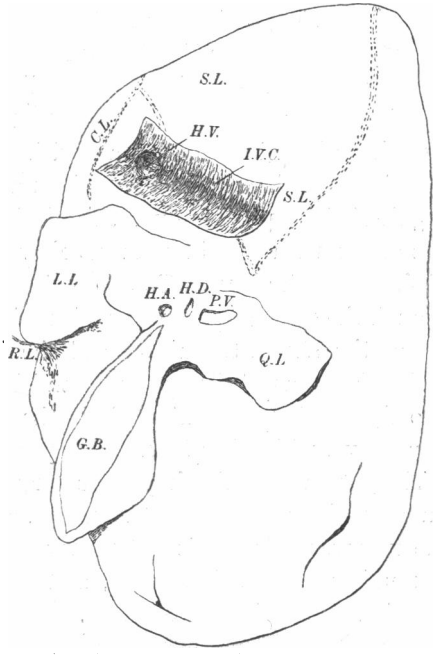

FIG.—Anomalous lobation of the liver, caudad surface. *C.L.*, coronary ligament; *G.B.*, gall-bladder; *H.V.*, opening of hepatic vein into inferior vena cava; *H.A.*, hepatic artery; *H.D.*, hepatic duct; *I.V.C.*, inferior vena cava; *L.L.*, rudimental left lobe; *P.V.*, portal vein; *Q.L.*, accessory lobe; *R.L.*, possible rudiment of the ligamentum teres; *S.L.*, area of attachment to diaphragm.

very slight development of the left lobe, which can be recognised as a process of tissue given off from the left border of the right lobe at about the junction of the middle with the upper third. This process of tissue measures about 5 centimetres in length, 3 to 4 centimetres in width, and from five-eighths to 1 centimetre

in thickness. It is not separated from the main part of the liver, the longitudinal fissure and falciform ligament being absent.

The right lobe is enlarged, weighing, as stated above, 2550 grams. It was suspended from the diaphragm by the coronary ligament on the left, and on the right by a triangular fibrous attachment on the upper part of its posterior surface. These are its only points of attachment.

The anterior or cephalad surface is convex and smooth. The right border is smooth and somewhat rounded. The lower border is also smooth and rounded, and extended, as stated above, from the right iliac fossa to the median line below the umbilicus. The upper border presents, to the left the coronary ligament, and to the right the triangular fibrous attachment to the diaphragm. This border must have been in close contact with the diaphragm. The left border is somewhat irregular. The undeveloped left lobe and the gall-bladder project over this border, which must have been in contact with the intestines below and with the pyloric end of the stomach above. The posterior or caudad surface presents much the same appearance as does that of a normal liver, if we except the shape, the absence of the lobus spigelii, and the slight development of the accessory and left lobes.

Above and to the left is the opening of the hepatic vein into the inferior vena cava, which has been split open longitudinally (see figure). The cut ends of the hepatic artery and duct and the portal vein are to be noticed near the centre, a little to the left of it. The transverse fissure is but poorly developed. The gall-bladder extends forward, downward, and to the left, and rests in a depression of the liver substance. Two slight inconsequential fissures are to be noticed, occurring near the lower border of this surface. The ligamentum teres appears as a fibrous cord below the rudimentary left lobe. There is no trace of a ductus venosus.

Microscopic sections were made, one from the undeveloped left lobe and one from the right lobe. The former shows the left lobe to be composed mainly of fibrous tissue, with some areolar tissue, and here and there streaks of liver tissue, the cells of which were small and compressed, though otherwise normal. Bile-ducts are not present. The section from the right lobe shows beginning cirrhosis, diffuse round-cell infiltration, together with the

formation of new vessels, also some increase in the connective tissue, and consequent slight atrophy of the liver cells proper. The last three changes are not very strongly marked.

From this description it appears that we have here a malformation of the liver, consisting in the absence of the lobus spigelii, and very slight development of an accessory, possibly a caudate lobe, and of the left lobes, and a marked enlargement of the right lobe. How much of the enlargement of the right lobe is purely hypertrophic in its nature and how much is due to the beginning cirrhosis cannot be definitely stated, but surely some degree of compensatory hypertrophy is present.

That this anomalous configuration is congenital in origin there can be no doubt. Note the absent spigelian lobe, the smoothness of the surface of the left lobe and of the entire liver, the absence of any scar in the abdominal wall, and of cicatricial tissue in the liver.

A study of this case brings home the fact that such malformations, though infrequent, might lead to serious mistakes in clinical diagnosis, and that they are therefore worthy of consideration.

Among the many congenital anomalies of the liver described in the literature at our command, any case the exact counterpart of the one here reported was not met with. It is self-evident that the great enlargement of the right lobe, which is probably, to a large extent, hypertrophic in its nature, would naturally be interpreted by the clinician as wholly due to some acquired morbid process. Hence it seems that in the differential diagnosis of enlargements and growths of the liver, those that may be connected with congenital malformations of the organ certainly deserve to be borne in mind.