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The anatomy of the lives

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The anatomy of the liver.

The liver is supposed to be the first visibly developed organ of the foetus. it forms half the bulk of the embryo at three weeks. which proportion continues through the first half of foetal life. from this period until puberty it rapidly diminishes in size. At birth it forms by weight one eighteenth of the body. at puberty it has acquired a relative bulk which continues to old age. viz about four pounds or the thirty sixth part of the entire body. Notwithstanding the decrease in this organ it remains the largest glandular structure in the human system.

It is of a dark red colar situated beneath the diaphragm in the right

hypacandrium its smaller portion occupying a part of the epigastric region. It presents two surfaces. an upper surface which is convex and a lower concave surface. it also has two margins a posterior thick, and an anterior thin.

Its upper surface which presents forwards is molded as it were in the concavity of the diaphragm which separates it from the cavity of the thorax, and to which it is attached over a considerable oval space by means of the coronary ligament, it is somewhat deep in front which divides it into two unequal portions the right, and left lobes. The inferior concave surface presents remarkable diversity

of structure. on this surface is seen the umbilical fissure which extends from the notch in the front margin to the posterior boundary. this fissure contains in the foetus the umbilical vein which in the adult is but a mere cord. posterior to this is to be found the remains of the foetal ductus venosus. the anterior portion of the fissure is frequently crossed by an isthmus the (pons hepatis.) The umbilical fissure indicates upon the caecal surface of the liver its division into two lobes the right, and the left.

The transverse fissure passes from the left into the right lobe, it crosses the umbilical fissure at right angles. it is about two inches in

length, and affords a passage to the hepatic artery - portal vein, and nerves. upon this surface is found two other fissures fissure for the gall bladder and fissure for the vena cava.

The liver is divided into five lobes two superior, and three inferior, these lobes are separated by fissures of which there are also five in number. - The two great lobes are indicated on its convex surface by the suspensory ligament - the notch in front - and the umbilical fissure.

The right lobe of the liver is about five times as large as the left - and upon this lobe is found the other three minor lobular enlargements the lobulus Spigelii. lobulus caudatus and the lobulus quadratus

The labulus spigelii is partially concealed by the lesser omentum and hepatic vessels it is found behind the transverse fissure and forms the pyramidal elongation seen on this portion of the liver.

The labulus caudatus, is simply a process of the labulus spigelii, and is gradually lost upon the right lobe. The labulus quadratus is also found on the under surface of the right lobe between the fossa magin and transverse. Just to the right of this lobe is found the gall bladder. The coats of the liver are two in number the peritoneal and the fibrous tunic. The peritoneal coat invests the whole of the gland

excepting the diaphragmatic border, and the depression for the gall bladder it is from this coat that the ligaments of the liver are derived

The fibrous coat is the inner tunic of the liver, its appearance is white resembling that of the common areolar tissue, and not only invests the liver but penetrates into its substance, and embraces its tabulated structure, and the ultimate granules.

It is this coat that forms sheaths for the blood vessels, and excretory ducts forming in the transverse fissure the basis of Glissons capsule.

The blood vessels of the liver are remarkably large, they are the hepatic artery the vena portarum and the hepatic vein The

hepatic artery for nutrition is derived from the coeliac axis, and divides into two branches in the transverse fissure one of which is distributed to the right the other to the left.

The size of the arteries are small when compared with the vast amount of glandular structure to which they are distributed. It terminates in the vena portarum and biliary ducts. The vena portae for secretion is found by a junction of all the veins of the chylopoietic viscera which are formed into a single trunk behind the pancreas, then ascending the transverse fissure it divides into two branches one being distributed to either lobe of the liver. the

distribution of its branches is not unlike that of the hepatic artery penetrating as they do the ultimate godmular structure in which are given off vaginal, and interlabular veins. these terminate in the labular venous plexuses formed by the capillary radicles of the hepatic vein

The hepatic veins the office of which is to convey residual blood into the inferior vena cava have their origin in the acini of the liver where the two systems become continuous.

The liver is supplied with innumerable lymphatics which are divided into two series one deep seated, the other superficial

The deep seated lymphatic vessels pass out of the transverse fissure, and terminate in the proximate lymphatic glands.-

The superficial is found upon the surface in the form of a network. The nerves of the liver which are small in proportion to its bulk, are derived from the great solar plexus, and from the pneumogastric, and ~~right~~ phrenic nerves. Those from derived from the solar plexus embrace the hepatic artery forming a secondary plexus which receives the name of the hepatic.

The biliary ducts are small canals which have their origin in the ultimate granules of the

liver a number of those ducts are combined forming larger trunks that finally make their exit at the transverse fissure in the form of the hepatic duct.

This is subsequently joined by the cystic duct from the gall-bladder forming by this junction the ductus communis choledochus which opens into the duodenum and there discharges the biliary secretion.

With regard to the substance of the liver various opinions have been entertained by anatomists.

It is however now well ascertained that the whole mass of the glandular aggregation of smaller glands each one possessing within itself the structure, and

function of the entire organ.

The small glands which thus compose the substance of the liver are of the smallest size perhaps not larger than a millet seed of an irregular form with certain nodular enlargments of their periphery, and have been termed penicilli.

These acini are connected by a cellular structure called the Capsule of Glisson. The lobules of the liver may be divided into base, and periphery. The base of each lobule rests on the hepatic vein from this circumstance the vein has been called the sublobular. Within each lobule occupying its center

is found a vein which is formed by the converging branches from the lobules venous plexus, this receives the name of Intra lobular vein. it penetrates the base of the lobule connecting it with and terminating in the sublobular vein.— The periphery of the lobule receives a covering from the capsule of Glisson, and is called its unattached or capsular surface.— The capsul of Glisson serves to connect each lobule with, and at the same time to separate it from the contiguous lobules.— The form of the lobules is different owing to the greater or less amount of pressure which they sustain, in

the intisias of the liver when they are most numerous, and most compressed, they are angulas but as they become superficial when they are less closely connected, and fewer they are rounded the degree of compression being less.

Commencing at the transverse fissure ramifying throughout the substance of the entire gland is a number of tubulas passages the proper parietes being composed of tubules these are the portal canals

Every canal hamenes small contains a branch of the hepatic artery portal vein, and hepatic ducts lined by a prolongation of the capsule of Glisson, all of which terminate in the tubules,

The capsule of Glisson is a cellulo vasculas membsane, and is said by some anatomist to be to the liver what the pia mater is to the brain from the manner of its distribution it is divided as are all the vessels of the liver into vaginal intralobular, and labular portion

The purpose served by the liver in the physiological performance of the functions of the system, is to secrete from the portal blood a viscid fluid of a yellowish green color extremly bitter to the taste with a peculiar odor this has been denominated by anatomists the bile.

This fluid containing at least

three distinct substances, Cholesterine - bilic acid, and coloring matter. - It is secreted in the cells of the lines which after traversing the various biliary ducts is poured into the duodenum a portion of it however is regurgitated into the gall bladder through the cystic duct, where it remains for some time becoming more viscid than the recently secreted bile

One of the most important offices of the bile in the animal economy is to assist in performing the function of digestion,

The food is conveyed from the stomach into the duodenum in the form of chyme the bile

acts upon its fatty matter rendering it more soluble, and fluid, and thereby more easy of conversion into chyle. It also acts as a stimulus to the mucous membrane of the intestine causing an increase secretion from that surface. The bile is also of excrementitious a portion of it uniting with the residuum left after chylification it acts as a stimulus to the muscular coat thereby promoting its peristaltic motion. The lungs during foetal life serves as a decarbonizing organ which after birth is superceded by the lungs but continues throughout life to separate from the blood the superfluous

hydro-carbon acquired by the
circulation through the tissues.

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