

Topographic and Anatomical Features of the Liver in the Ante and Postnatal Ontogenesis

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ABSTRACT: The purpose of this work was to study the age anatomy of the liver (her gate, furrow, blood vessels), as well as its topography in Ante and postnatal ontogenesis in humans (in fruits, newborns, children of different age, teenagers, young men, adults and elderly people and senile age). Periods of the most intense growth of weight and liver weight and volume are immediately before birth and 4 cm - 9 cm months of breast age. The weight of the liver is maximized by 1- cm. The period of mature age ($1644, 06 \pm 75.90$ g), the volume is in the youth of the age (1435.20 ± 8.56 cm³).

It is shown that the quadrangular shape of the antenatal liver changes in the postnatal period on triangular and in highly age-shaped. A variety of forms of liver shares in fruits is replaced after birth with characteristic sustainable for each share form. It has been established that the perimeter of the extra-breec field of the liver becomes the maximum in the youth of the age, the size of the corpuscular, crucible, and triangular ligaments - in adults, the size of the lig. hepatoduodenal - in the elderly. Revealed age features of the distribution of

types, sizes, and position of the gate of the liver. It is shown that the type of gates (98%) is closed in fruit and newborns (98%) during childhood and adolescence, the open type of liver gate in adults (61%), in elderly and old age (80%).

Keywords: mechanical Asphyxia, anatomy, topography, projection, and syntopia, clinical pediatrics require.

INTRODUCTION

The study of the liver's topographic and anatomical features is a certain interest in hepatology [4,7,11]. Anatomy, topography, projection, and syntopia of the liver after birth and under 90 years old studied many authors [3]. However, until recently, the literature did not have a single opinion about the form, fractions, weight, volume, size, types of gates, topography and liver projections in postnatal ontogenesis, changes in these formations in the process of growth of the organism [10] were not sufficiently studied.

Currently, clinical pediatrics require more accurate age anatomy data. It is known that in the body of the fetus and children, unlike adults, there is an intensive growth of all organs and systems, as a result of which topography, projection, syntopia, and skeleton organs are rapidly changing. Therefore, a very important study of the abdominal cavity's topographic anatomical organs, among which the liver occupies a special place [5,12].

The frequency of damage to the liver in children is 5-24.4% of all closed trauma of the abdominal cavity [1,6].

It is necessary to remember that mortality in young children is associated with the specifics of age anatomy-physiological features that determine the originality of symptomatology and the course of the disease, research methods and treatment [8]. A surgeon who operates the child should always consider the anatomy of a growing organism and be considered the nature of its further development. Therefore, without taking into account all age features, it is impossible to correctly elect the methods and terms of operational intervention

[2,7].

All of the above indicates that so far there are no age-related topographic-anatomical characteristics of liver changes in postnatal ontogenesis, therefore, the present research is certainly relevant.

MATERIALS AND METHODS

The study material was 173 common sex people, starting with the fruits of 7-10 months and from birth to 90 years of age who died from random causes, or from the disease, and related to the pathology of the liver and blood system (crank-brain injury - 46, mechanical Asphyxia - 34, incompatible life, firearms - 15, poisoning - 7, premature genera and generic injury -17, dead fruit - 16; incompatible malformations of heart and light development - 11, intrauterine asphyxia of the fetus - 3, acute infarction Myocardium - 11, stroke - 5, falling from height - 2, brain tumor - 2, abdominal thrombosis - 1, sharp pneumonia - 3.

The study material was divided into groups in the age periodization of a person, according to which the breast age is divided into 4 subgroups; from 1 to 3 months, 4-6 months, 7-9 months, 10-12 months. Such an adjustment is used to obtain more reliable and objective data, which is associated with the intensive growth of breast agencies. To show the true dynamics of changes occurring at this age, the specified change in age periodization was used.

RESULTS AND DISCUSSION

Liver shape.

Fruits from 7 to 10 months of life, as well as a newer liver in 90% of cases (in 45 of 50 observations), has a quadrangle, only in isolated cases - triangular (4%), rounded (2%), oval (2%) And the wrong (2%) form.

At the first age in the first six months after birth, the liver in 60% of cases of observations has (in 12 out of 20 observations, triangular, in 20% of cases - quadrangular, and in the other oval and incorrect form. Starting from 7 months after birth to 2 times of mature age. In 92% of cases (in 81 of 88 observations),

there is a triangular liver.

In the 2nd period of mature, elderly and old age increases the frequency of occurrence of the liver of oval form.

Form of liver shares.

The right lobe of the liver in the fruits of 7 months in half cases has a quadrangular shape, less often - rounded (in 3 out of 10 observations) and oval shape (in 2 out of 10 observations), in the fruit of 8 months, it in 90% of cases (in 9 out of 10 observations) It has a quadrangular shape, in fruits of 9 months - oval (70%), rounded (20%), triangular (10%) form. In the fruits of 00 months, we in 100% of cases found the right share of the liver of quadrangular shape.

From the moment of birth to senile age inclusive, the right lobe of the liver (in 94 out of 100 observations) has a quadrangular and rounded form.

In early childhood, the 2 periods of mature and old age prevail a quadrangular shape, found in 25 of 33 observations, significantly prevails over the round shape of the right lobe of the liver discovered in 8 cases.

The left lobe of the liver in 7-8 months of intrauterine development has a variety of forms: oval (in 8 of 20 observations), quadrangular (in 5 cases), triangular (in 3 cases), rounded (in 2 cases), and incorrect (in 2 cases). For 9-10 months, it has mainly oval (in 13 of 20 observations) and rounded (in 6 cases) form.

In the newborn, the left lobe of the liver in 70% of cases has an oval and in 30% - rounded shape. In breast-age children, it is advantageously found oval (in 32 of 39 observations) and rounded (in 3 cases) the form of the left lobe of the liver, and only in isolated cases - a triangular, elongated, and improper form. In the following age periods, the left lobe of the liver is predominantly oval (in 68 of 82 observations), less often - rounded (in 6 cases), and elongated (in 8 cases).

The shape of the square lobe of the liver in the ante and postnatal periods is most often (in 84 of 170 observations) quadrangular, less often - triangular (in

24 cases), elongated (in 25 cases), incorrect (in 25 cases), oval (in 9 cases) and rounded.

Despite the predominance of the quadrangular shape of the square lobe of the liver over other forms in the ante and intensial ontogenesis, in the period of the breast side, as well as the early and first childhood, the square share of the triangular shape is very often detected, and in adolescent, youth, adolescent and elderly an elongated form.

The tail fraction of the liver in the intrauterine period and in the period of the newborn has preferably quadrangular (in 21 out of 50 observations) and incorrect (in 22 cases), only in isolated cases, it can be triangular, oval, rounded, mushroom, beobovo and elongated. During the first 9 months after birth, quadrangular (IIIZ 30 observations), triangular and incorrect (7 cases) forms of this share are determined.

In the following age periods, including the II period of mature age, the tail fraction has a quadrangular (in 49 of 78 observations), less often - incorrect (in 12 cases) form. In the elderly and old age, the tail share is almost the same in the same way often has a quadrangular (in 3 of 8 observations) and incorrect (in cases of 7) form.

Liver weight.

The weight of the liver in the fruits from the 7th to the 10th month of the intrauterine life increases almost 3 times (from 45.25 ± 0.91 to 129.50 ± 11.77 g), while the most noticeable throughout the 9th and 10 months of the intrauterine period. In newborns, the weight of the liver becomes equal to 164.00 ± 7.40 g, and at the breast age - it increases almost twice. In this period, the increase in the weight of the liver mainly occurs between the ages of 4 and 9 months after birth.

In the future, the increase in weight continues until the 1st period of mature age and reaches its maximum, increasing almost 10 times compared with the period of newborn. Starting with the II period of mature age to senile

age, the weight gradually decreases (from 1644.06 ± 75.90 to 1213.57 ± 40.42).

Liver volume.

The volume of the liver in the intrauterine period (from 7 to 10 months) increases almost 3 times and before birth is 125.75 ± 8.74 cm³. From the moment of birth to youthful age, the volume of the liver increases almost 12 times, in adulthood gradually decreases from 1435.20 ± 86.56 cm³ in young men to 1077.14 ± 61.07 cm³ at high age.

Liver dimensions.

Transverse, longitudinal, front-rear, and oblique liver dimensions in the intrauterine period (from 7 to 10 months) increase almost 1.5 times. From the moment of birth to youthful age, the transverse and oblique liver dimensions increase 2.4 times (from 10.90 ± 0.66 to 24.53 ± 0.42 and from 11.40 ± 0.63 to 27.25 ± 0.40 cm), then gradually decrease to the old age. Longitudinal and front-rear liver dimensions' increase from the moment of birth to the second period of mature age (from 5.60 ± 0.31 to 14.57 ± 1.02 and from 3.25 ± 0.19 to 7.52 ± 0.58 cm), and in the elderly and old age - slightly decrease.

The dimensions of the liver share.

The transverse and longitudinal dimensions of the right lobe of the liver in the intrauterine period of development increase by 1.4 times, the transverse size of the left share increases 1.2 times. A slightly large extent increases the size of the square fraction: transverse - from 1.09 ± 0.10 to 1.75 ± 0.07 cm, longitudinal - from 2.41 ± 0.19 to 3.33 ± 0.07 cm.

The dimensions of the right lobe of the liver increase from birth to the youthful age throughout the mature age change insignificantly, decrease to the old age. It should be noted that if the newborn transverse size exceeds longitudinal, then in adulthood, the longitudinal and transverse dimensions become almost the same.

The transverse size of the left lobe of the liver gradually increases from the moment of birth to adolescence (from 4.60 ± 0.41 to 9.55 ± 0.38 cm), and

the longitudinal period from the period of the newborn to the youth age from 6.97 ± 0.43 up to 16.05 ± 0.32 cm; then dimensions are gradually reduced: transverse - from 9.55 ± 0.38 to 7.27 ± 0.40 cm, longitudinal - from 16.05 ± 0.32 to 13.03 ± 0.54 cm in old age. It should be noted that in all age-related periods, the longitudinal size of the left lobe of the liver is 1.5 times more than the transverse one.

The dimensions of the square lobe of the liver after a birth increase from the period of the newborn to the youth age (transverse of 1.87 ± 0.19 to 3.40 ± 0.19 cm, and the longitudinal from 3.09 ± 0.21 to 8.35 ± 0.28 cm), then the dimensions of this share decrease up to senile age. At the same time, the transverse size of the square share from birth to youth increases 1.8 times, longitudinal - by 2.7 times. In the future, the transverse size of the square share to the old age decreases by 1.7 times (from 3.40 ± 0.19 to 1.96 ± 0.08 cm), longitudinal - 1.7 times (from 8.35 ± 0.28 to 4.81 ± 0.15 cm). It should be noted that the increase in the size of the square lobe of the liver to the youthful age occurs unevenly (longitudinal at 2.7, transversely 1.8 times), while the old age of the square share decreases evenly (1.7 times each).

The dimensions of the caudate lobe of the liver in fruit from 7 to 10 months increase unevenly: a transverse size of 1.3 times (from 1.23 ± 0.07 to 1.62 ± 0.07 cm), longitudinal - 1.2 times (from 1.64 ± 0.07 to 2.03 ± 0.14 cm).

After birth, the sizes of the tail lobe of the liver increase to the youthful age: the transverse size is 1.6 times (from 1.99 ± 0.15 to 3.23 ± 0.15 cm), longitudinal - almost 3 times (from 2.16 ± 0.22 to 6.35 ± 0.34 cm). In the subsequent age periods, the size of the caudate lobe of the liver gradually decreases: transversely 1.1 times, longitudinal - 1.3 times to the old age. It should be noted that if in the intrauterine period, the tailing share is growing faster and the transverse direction, then after birth - in the longitudinal one.

Furrows liver.

The width of the transverse groove of the liver throughout the 7th to the

10th months of the intrauterine period increases almost 2 times (from 1.12 ± 0.07 to 2.17 ± 0.11 cm). In the period of the newborn, during the first six months of life, this size changes little. Starting from 7 months of life, the width of the transverse groove gradually increases and reaches its maximum in the second period of mature age, increasing 2 times from 3.07 ± 0.08 to 6.30 ± 0.27 cm. It should be noted that from 7 months of life up to 7 years, the width of the transverse groove varies insignificantly. In the elderly and old age, its width decreases to 4.20 ± 0.32 cm in old age.

The front-rear size of the transverse groove in the period of intrauterine development changes uneven: from the 7th to 9-6, it increases from 0.52 ± 0.05 to 0.86 ± 0.04 cm, and the fruits of 10 months decreased slightly to 0.72 ± 0.02 cm. In the period of the newborn, this size increases to 0.93 ± 0.06 cm and has changed a little during the first year of life. Starting from early childhood to adolescent age, the front-rear size of the transverse groove of the liver increases by 1.5 times (from 1.06 ± 0.07 to 1.50 ± 0.07 cm). Next to the 1st period of mature age, it slightly decreases in the second period of mature age, the elderly and old age this size increases by 2 times compared with early childhood (from 1.06 ± 0.07 to 2.12 ± 0.11 cm).

The depth of the transverse groove of the liver in the intrauterine period varies unevenly. In the fruit of 8 months, it decreases somewhat compared with 7 months (from 0.50 ± 0.07 to 0.34 ± 0.02 cm), and the fruits of 9 months increase again, and before birth, it decreases somewhat.

Starting from the newborn period until the second childhood, the depth of the transverse groove increases by almost 2.5 times (from 0.51 ± 0.04 to 1.21 ± 0.09 cm). In adolescence and youthful age, the depth of the transverse groove of the liver slightly decreases from 1.21 ± 0.09 to 0.87 ± 0.07 cm, in adulthood it is revolved again and does not significantly change significantly.

Left longitudinal groove bakery Length of the left longitudinal furrow from 7 to 10 months of the intrauterine period increases by 1.6 times from 3.42

± 0.20 to 5.63 ± 0.20 cm. At the same time, the greatest growth is noted for 9 months of intrauterine development.

From the moment of birth to the youthful age, the length of the left longitudinal groove of the liver gradually increases almost 2.5 times (from 5.59 ± 0.28 to 12.80 ± 0.33 cm), while the greatest increase is marked from 4 to 6 months of life. From the early childhood period to the youthful age, there is almost the same increase in the length of this furrow in each age period, in the future the length of the furrow changes little.

The depth of the left longitudinal sulcus of the liver from 7 to 10 months of the intrauterine period increases slowly (from 0.57 ± 0.06 to 0.69 ± 0.05 cm). In the newborn and during the first 3 months of life, the depth of the left longitudinal furrow of the liver remains at the level of the figures of the fruit of 10 months. At 4-6 months of life, the depth of the left longitudinal groove of the liver increases almost 2 times (from 0.63 ± 0.04 to 1.10 ± 0.10 cm) and for 9 months of life decreases again. Starting from 10 months of life, this value gradually increases and reaches its maximum in 1 period of mature age (1.93 ± 0.18 cm), and 2 times decreases to the old age (0.98 ± 0.12 cm).

The length of the forefront of the right longitudinal groove of the liver Starting from 7 months in the fruit until the end of the 1st year after birth, gradually increases from 2.56 ± 0.28 to 7.02 ± 0.15 cm, especially intensively for 10-12 months of life. In the further stage, the value decreases by the period of the second childhood to 5.75 ± 0.46 cm. In adolescence, the length of the front department of the right longitudinal furrow increases again to 8.16 ± 0.46 cm. Then, to II of the period of mature age, is changed. In the elderly and old ages, it changes little, and in the elderly and old ages of its length slightly decreases.

The width of the front department of the right longitudinal groove of the liver in the fruits of 7-10 months gradually increases from 0.73 ± 0.14 to 0.19 ± 0.09 cm. After birth, its width increases gradually up to senile age almost 3

times (from 1, 61 ± 0.17 to 0.55 ± 0.19 cm).

The depth of the front department of the right longitudinal furrow from 7 to 10 months of the intrauterine period changes little. In newborns, breast-age and early childhood, the depth of the front department of the right longitudinal groove of the liver differs little from the fetal period. In the first childhood, this value differs almost 2 times, and in the second child again decreases; in adolescence - again increases from 0.7 ± 0.07 to 0.98 ± 0.08 cm, 0.69 ± 0.07 cm again decreases again. In subsequent ages, this value changes little.

The length of the rear section of the right longitudinal sulcus of the liver Starting from 7 months in fruits to the youth gradually increases 4 times (from 1.53 ± 0.13 to 6.94 ± 0.26 cm). In the future, it decreases slightly to 5.01 ± 0.14 cm old age.

The width of the rear department of the right longitudinal furrow of the liver from 7 to 10 months of the intrauterine period changes little. From the moment of birth to senile age, the width of the rear section of the right longitudinal groove increases by almost 4.5 times (from 0.52 ± 0.04 to 2.28 ± 0.09 cm), while the greatest increase is noted in the youthful age.

The depth of the rear section of the right longitudinal groove starting from 7 months in fruits to the youth gradually increases 3 times (from 0.38 ± 0.02 to 1.17 ± 0.1 cm), in junior age - decreases to 0.89 ± 0.05 cm, in elderly and old age - again increases to 1.22 ± 0.08 cm.

Types of liver gates.

In the fruit of 7-8 months in 2/3 of cases there is a closed gate of the liver, in 1/3 cases - the intermediate and open type in the fruit of 9-10 months more than half of the cases there is an intermediate form of the gate, less often - closed, in isolated cases - Open form. In the newborn and the first 6 months of the chest more often encountered a closed type of gate, less often intermediate or open. In infants from 7 to 12 months of life, as well as in early the same, the closed and outdoor types of the liver are common. In the first childhood, all

three types of liver gates are equally common. Starting from the second childhood to senile age, more frequent is the open type of liver gate less common - closed and intermediate types.

Liver gate dimensions.

The transverse size of the liver gate starting from 7 months in fruits to elderly gradually increase almost 4 times from 1.22 ± 0.08 to 4.81 ± 0.39 cm, and in high age, significantly decreases to 3.79 ± 0.19 cm. It should be noted that in children from 7 to 12 months of life, as well as in the early first childhood, the transverse size of the gate of the liver changes significantly.

The front-rear size of the liver gate in fruits from 7 to 10 months, and also in newborns gradually increases from 0.52 ± 0.05 to 0.93 ± 0.06 cm. During the first three months of life, it slightly decreases, from 4 on 9 months gradually increases, for 10-12 months of life decreases again. Starting from the early childhood period, the front-rear size of the liver gate gradually increases from 1.06 ± 0.09 to 1.5 ± 0.07 cm, in adolescence, in the youth and 1st older period of the elderly, and in the 2nd period of mature. The age of the front-rear size of the liver, gate increases 1.6 times (from 1.37 ± 0.14 to 2.26 ± 0.14 cm). In the elderly and old age size slightly decreases.

The perimeter of the extra-breath field of the liver.

In the fruit from 7 to 9 months, its length increases 2 times (from 0.25 ± 0.86 to 17.95 ± 1.23 cm), the fruits of 10 months also significantly decrease to 16.22 ± 1.76 cm. In children from 1 to 6 months of life, the perimeter of the extra-breath field changes little, however, from 7 to 9 months, this figure increases (up to 24.05 ± 1.53 cm), and in subsequent age - in early and first childhoods increases slightly and reaches its maximum in a youthful age (52.50 ± 3.49 cm). In the mature age, the perimeter of the extra-breath field of the liver changes little, and in the old age - 42.0 ± 1.15 cm slightly decreases slightly.

The position of the gate of the liver.

The distance from the gate of the liver to the front edge from 7 months in the fruit, gradually increasing, reaches a maximum of youthful age (from 2.41 ± 0.19 to 8.35 ± 0.25 cm) little changes in the mature and old age, In sense age, almost 2 times decreases (from 8.35 ± 0.28 to 4.81 ± 0.15 cm).

The distance from the gate of the liver to the rear edge in the fruit from 7 to 10 months gradually increases from 1.64 ± 0.07 to 2.03 ± 0.14 cm. In the period of the newborn and in children during the first three months of life, it changes the distance few. Starting from 4 months of life, it gradually increases, reaches its maximum in youthful age (up to 6.35 ± 0.34 cm), in the future, the old age gradually decreases (up to 4.96 ± 0.27 cm). At the same time, it should be noted that the distance of the gate of the liver to its rear edge from the age of the newborn of youth increases 3 times, whereas mostly decreased by only 1.3 times.

Light liver.

The length of the feed-shaped ligament since 7 months in the fruit (from 2.9 ± 0.21 cm) gradually increases and reaches its maximum in a youthful age (9.75 ± 0.59 cm), and in subsequent ages, it changes little.

The width of the liver feedback from 7 months of fruits to the elderly increases 4.5 times (from 0.79 ± 0.07 to 3.61 ± 0.5 cm), and at old age, this value almost does not change.

The length of the round bundle starting from 7 months in the fruit until the ripe age period increases 5 times (from 3.45 ± 0.33 to 15.45 ± 0.95 cm), and in subsequent ages it changes little. The width of the liver ligament from 7 months of the intrauterine period II of the period of mature age increases by 2 times (from 0.38 ± 0.02 to 0.81 ± 0.12 cm), at the old age it decreases.

The length of the wreath bundle in fruits from 7 to 10 months increases by almost 2 times (from 5.78 ± 0.59 to 10.65 ± 0.62 cm), in Novoriat's newborn, in 1/5 times shortening (up to 8.01 ± 0.71 cm) and starting from the breast to the first childhood. Gradually increases. From the period of the second childhood

to II of the mature age, the coronary bundle is intensively lengthened (from 13.05 ± 0.82 to 25.49 ± 0.71 cm), and in the elderly and old age - is shortened at 1/5 times.

The length of the right triangular ligament in the period of intrauterine development increases on 2nd and, especially, for 10-cm months, and its newborn is slightly reduced by the first six months of life, it is significantly extended, in 7-9 (from 0.60 ± 0.17 cm) and 10-12 (1.03 ± 0.1 cm) months there is a decrease in length; In the early and first child, she again becomes longer, on the second - a little shortening. In adolescence, especially the young and 1st period of mature age, the length of the right triangular ligament increases significantly, in the second period of mature - again decreases, and in the elderly, it becomes the maximum (2.72 ± 0.26 cm); And at the old age - again it is revised by the right triangular ligament.

The width of the right triangular ligament, as can be seen in the fruit from 7 to 10 months, increases 2 times (from 0.36 ± 0.04 to 0.88 ± 0.07 cm), and a little change in newborns and children to three months of life. In children from 1 to 6 months, this size increases (from 0.89 ± 0.07 to 1.52 ± 0.15 cm), in the future, until the second childhood, it changes insignificant, in adolescence - sharply increases to $2.53 \pm 0, 31$ cm. Such width of the right triangular ligament is preserved up to 1 period of mature age, and in 2 periods - it becomes 1/3 less (up to 1.66 ± 0.08 cm). In the elderly, the width of this bundle is again increased to 3.75 ± 0.29 cm, in old age decreases.

The length of the left triangular bundle in fruits from 7 to 10 months increases 2.5 times (from 0.42 ± 0.04 to 1.01 ± 0.07 cm) in newborns it reaches 1.22 ± 0.09 cm. For the short periods of this bundle in children from 1 to 3 months of life, from 7 to 9 months, in the first childhood, 1 period of mature and old age should be periods of increasing it in intermediate ages. It should be noted that the left triangular bunch is dramatically lengthened in children from 1 to 3 years and in adolescence (respectively to 1.53 ± 0.16 and to 2.23 ± 0.35

cm).

The width of the left triangular bundle for 8 months of intrauterine development increases compared with the 7th month 4 times (from 0.57 ± 0.17 to 2.25 ± 0.26 cm), and a few changes for 9-10 months. In children from 1 to 3 months of life, its width increases sharply compared with newborns. In children from 4 to 6 months of life - it is shortened by almost 1/3, in the future 1 period of mature age it becomes gradually wider up to 4.01 ± 0.29 cm and in subsequent ages, it becomes already.

The length of the hepatic and duodenal bunch in the intrauterine period gradually increases (from 1.06 ± 0.09 to 1.39 ± 0.1 cm), after birth, it continues to increase and in adolescence becomes 2 times longer than that of newborns (from $1,46 \pm 0.03$ to 3.47 ± 0.22 cm); at the old age - even more extends to 5.07 ± 0.28 cm.

The width of the hepato-duodenal bunch in the intrauterine period is almost equal length. Such a ratio is preserved and throughout the first three months of life, then gradually the length slightly exceeds the width. The greatest width of the hepatic duodenal bunch has old age.

CONCLUSIONS

The weight of the liver is most increasing before birth and on the fourth ninth month in breast. In children, adolescents and young people, the liver weight gradually increases until the first period of mature age, in the future gradually decreases to senile age. The volume of the liver is most intensively growing in the same periods that its weight, however, reaches its maximum earlier in the youthful age, starting from the period of mature age tends to reduce.

In the first seven months of life, the liver shape varies with a four-triangular on triangular. Later from 55-60 years of age, the frequency of the oval form of the liver.

From the moment of birth, the transverse sizes of the liver increases to the

youth age and gradually interferes in old age. The longitudinal and front-rear dimensions of newborns vary more than the transverse and oblique dimensions, reaches maximum values in the second period of mature age, and subsequent periods decrease not significantly.

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Data on the anatomy and topography of the liver at different stages of the ante and postnatal development have a large theoretical value in age morphology to understand the patterns of liver morphogenesis in its rapid and slow growth in fruits, children and adolescents, as well as involutions in elderly and old age.

The practical value of the work consists in the possibility of using data on the frequency versions of the anatomy of the liver, its vessels, the features of the boundaries of its projection on the wall of the body in children and adults in the clinic in the diagnostic procedures and therapeutic effects, especially in surgery on the organs of the upper floor of the abdominal cavity.

Data on the anatomy and topography of liver in the ante and postnatal ontogenesis can also be used when reading lectures and conduct practical classes with students of medical institutes on human anatomy, operational surgery, internal and surgical diseases.

The following provisions are subject to protection:

1. Throughout an ante and postnatal period of ontogenesis in anatomy, topography, syntopia, gonotopy, liver skeletopia, certain and characteristic changes inherent in each age period occur.

2. As the body grows, the distinctness of the individual anatomical variability of the liver will increase with different intensity.

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