

УДК 618.29.325:611.66.013

Д. В. Проняев, к.м.н., доцент

Буковинский государственный медицинский университет

г. Буковины, Украина

ТОПОГРАФО-АНАТОМИЧЕСКИЕ ХАРАКТЕРИСТИКИ МАТКИ ПЛОДОВ ВТОРОГО ТРИМЕСТРА

SUMMARY

The article deals with the investigation of peculiarities of the structure and topography of the uterus in the beginning of the fetal period of development. There is a conclusive evidence that the causes of diseases of the female internal reproductive organs are mostly formed in the prenatal period of human development. However, certain congenital defects are resulted exactly from perinatal morphogenesis. By means of adequate methods of morphologic examination the uterine structure was studied on 30 samples of fetuses of 4-6 months of development. The uterine fundus of 4-month fetuses was found to be characterized by the following shapes: flat – 2 cases, convex – 1 case, vallate – 5 cases, tuberculous – 2 cases. An even distribution of the uterine fundus shapes found is seen in 5-month fetuses: tuberculous shape – 3 cases, vallate – 3 cases, flat – 2 cases, and convex – 2 cases. A flat shape of the uterine fundus prevailed in 6-month fetuses (7 out of 10). There were one of each case of vallate, tuberculous and convex found. Morphologically the shape of the uterine fundus changes in the second trimester from a vallate one on the 4th month of development to the flat one on the 6th month.

Key words: uterus, fetus, human, anatomy.

To study the causes of the development of congenital defects and normal morphogenesis is an essential link in the system of controlling mutation process and environmental conditions in general. Therefore, both from scientific and practical view the study of peculiarities of the structure and topography of the organs and tissues in perinatal period is rather interesting [1].

Recently reproductive health of the female population has deteriorated. It depends on the peculiarities of the formation of the reproductive system in the prenatal period of human development. The fact of specific age peculiarities to find pathology of the female reproductive system deserves certain attention. The peak of morbidity is observed at the age of 17 – approximately the period of beginning of sexual relations [2, 3]. The statement that causes provoking the development of diseases of the female reproductive organs are formed in the prenatal period of human development is indisputable. But doctors do not pay proper attention to their diagnostics mainly due to the absence of complaints. To advance the system of scientific organization of physician's practical work the improvement of methods to diagnose perinatal pathology plays an important role.

Timely diagnostics, and adequate therapy prevent acute inflammation from transforming into chronic stage, decreasing the risk of development of remote complications after diseases of the organs of the female minor pelvis [4]. A wide introduction of morphological examinations into practical work and detection of perinatal standards of the topographic-anatomical peculiarities of the human organs and systems will considerably increase the efficacy of medical aid given [5, 6]. The objective of the research was to find peculiarities of the uterine structure and topography of the fetuses of 4-6 months of development.

Materials and methods. 30 specimens of female fetuses without signs of pathological morphogenesis were examined. Both fresh and fixed dead fetuses were used for macroscopic examination. Parietocalcaneal length was measured followed by small cuts to open the abdominal part of the body, the loops of the small intestine were slide out upwards to examine the pelvic organs. Interrelations, position of the uterus in space, its relation to the peritoneum and other adjacent organs were studied, and photo documents were taken [7]. After performed macroscopic examination fresh dead fetuses were used for further his-

tological examination or vascular injections. To fix dead fetuses two formalin solutions with the concentration of 5 % and 10 % were prepared, the material was put into 5% formalin solution for "intermediate" fixation at 5-100 C for 2-3 days. To prepare topographic-anatomical sections two methods were used. According to one method the examined material was preliminary kept in special solution (24 % zinc chloride in 40 % formaldehyde) during 1-1,5 month depending on the size of the object. After that the peritoneal cavity was filled with gelatin solution additionally fixing organs and structures. Then sections were made in one out of three interperpendicular planes 0,5-1,5 cm thick by means of a special knife. The prepared sections were put into warm water to remove gelatin, and after that they were placed in 5 % formaldehyde solution for conservation.

According to another method, fetuses fixed in formalin solution were washed under running water during 1-2 hours. Lower and upper extremities of the fetus were removed, and the fetus was put in a certain position and placed in a freezer. Then sections were made in one out of three interperpendicular planes 0,5-1,5 cm thick by means of a special knife. Morphometric measurements were made on every section, and topographic-anatomical uterine interrelations studied.

Results and discussion. The examination of fetuses of 4-6 months of development found certain peculiarities of the structure, syntopy and topography of the uterus. 5 out of 30 fetuses had insignificant deviation of the uterine vertical axis in the frontal plane to the right. The degree of this deviation is likely to depend on the interrelation of lengths of the uterine round ligaments. Thus, in 5 cases the right uterine round ligament in fetuses of 4-6 months was shorter than the left one. An average length of the right uterine round ligament was 6,5 mm, of the left one – 7,1 mm. As to the deviation in the sagittal plane, the positions ante-flexio or retroflexio were difficult to identify. In all the cases the uterus was in the intermediate position. Syntopically, in all the cases the uterus touched the anterior wall of the rectum with its posterior surface, and the posterior surface of the urinary bladder - with its anterior surface. Umbilical arteries passed from the sides at 1 mm distance. The ovaries were characterized by the biggest variety of syntopic interrelations with the uterus. In the majority of early fetuses – 8 out of 10 fetuses of the 4th month of development – the

ovaries were in high position and touched the posterior surface of the uterus with their lower extremities. The high position was characterized by the ovarian localization either longitudinally the lateral walls of the rectum or in the femoral regions. In 2 cases in 4-month fetuses the ovaries were located behind the uterus by their bigger part. This position was characteristic for the majority of fetuses of the 6th month of development. The uterus shape, or to be more exact, the shape of the uterine floor was characterized by the biggest variety of morphological signs. In 26 fetuses out of 30 the uterus was flat from 1 to 2,5 mm thick. In 4 fetuses the uterus was of the shape close to the triangle. The uterine floor of 4-month fetuses was characterized by the following shapes: flat – 2 cases, convex – 1 case, channel – 5, tuberoso – 2. In half of the cases of 4-month fetuses (5 out of 10) the uterine floor was of a channel shape. This shape was characterized by the presence of sulcus along the centre of the uterine floor as of separating it into two parts. In our opinion, such a structure can be qualified as a normal one for the given period of development, and it is the sign of continuation of embryonic morphogenesis. In 2 cases the uterine floor was tuberoso characterized by the presence of tubers in the mouth area of the uterine tubes. We consider this variant is the result of flattening of the sulcus which presence is characteristic for the majority of fetuses of the given age period and descending of the uterine tubes. In two cases the uterine floor was flat which is indicative of disappearing of its sulcus. In one case the uterine floor was convex which is indicative of accelerated

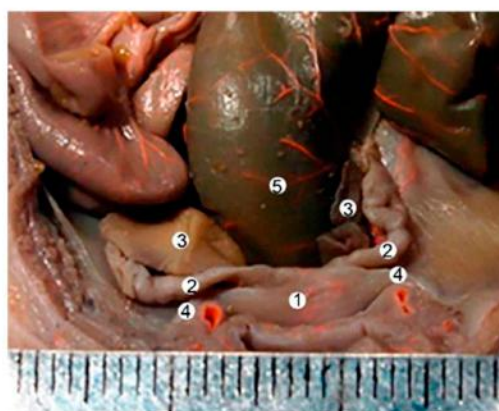


Fig. The internal female genital organs in a fetus, measuring 270.0 mm PCL. A gross specimen. A 1,5^x magnification: 1 – the uterus; 2 – the uterine tubes; 3 – the ovaries; 4 – the round ligament of the uterus; 5 - the rectum.

development. In 5-month fetuses a regular distribution of uterine shapes was found. In 3 cases the shape was tuberosa, in 3 more cases – channel, in 2 cases – flat, and in 2 more cases – convex. In 6-month fetuses flat shape of the uterine floor prevailed (7 out of 10) (Fig.) There was one case of a channel shape, one tuberosa, and one convex. The peculiarities of the uterine morphology found are indicative of characteristic belonging of a certain shape to the period of development. The regulations of morphogenesis of the uterine floor shape from channel to flat can be accordingly

observed. Finding a channel uterine shape in 6-month fetuses may be indicative of a retarded development and possibility to form congenital defects.

Conclusions. 1. Morphologically the uterine floor shape in the second trimester changes from the channel one on the 4th month of development to the flat one on the 6th. 2. Changes of topography and syntopy are indicative of gradual descending of the uterine tubes and ovaries. 3. In all the cases the position of the uterine body, both ante-flexio or retroflexio, was not possible to detect.

LITERATURE

1 *Брлова Л.А.* Факторы риска развития гнойных воспалительных заболеваний придатков матки // Актуальные проблемы клинической, экспериментальной, профилактической медицины, стоматологии и фармации: программа и матер. 70-й Междунар. науч.-практич. конф. молодых ученых. – Донецк: «Каштан», 2008. – С. 77.

2 *Ахтемийчук Ю.Т., Слободян О.Н., Хмара Т.В.* и др. Очерки перинатальной анатомии: под ред. Ю.Т. Ахтемийчука. – Черновцы: БГМУ, 2011. – 300 с.

3 *Русак П.С., Рыбальченко В.Ф., Краснонос О.О.* и др. Трехмерная компьютерная томография тазового дна при определении степени заболевания // Хирургические аспекты заболеваний кишечника у детей: матер. науч.-практ. симпозиума, г. Черновцы, Украина, 22-24 октября 2008 г. – Черновцы, 2008. – С. 57-58.

4 *Нечипоренко А.Н., Нечипоренко Н.А., Юцевич Г.В.* Анатомическое обоснование техники установки синтетического сетчатого протеза при хирургической коррекции опущения матки и (или) цистоцеле // Актуальные вопросы оперативной хирургии и клинической анатомии: матер. Междунар. науч.-практ. конф., посвящ. 50-летию кафедры оперативной хирургии и топографической анатомии. – Гродно: ГрГМУ, 2011. – С. 165-168.

5 *Акмоллаев Д.С., Косолапова Н.В., Аметов Э.Р.* и др. Перспективы диагностики и лечения спаечного процесса в малом тазу у девочек после аппендэктомии / Хирургические аспекты заболеваний кишечника у детей: матер. науч.-практ. симпозиума, г. Черновцы, Украина, 22-24 октября 2008 г. – Черновцы, 2008. – С. 73-75.

6 *Бурак И.А., Горбаченко Л.А., Кавуля Г.Г.* Структура прооперированных врожденных пороков развития в детской популяции Черновицкой области / Актуальные вопросы современной медицины: Междунар. науч. конф. студентов и молодых ученых, посвящ. 20-летию мед. факультета Харьк. нац. ун-та им. В.М.Каразина: сб. тез. конф., г. Харьков, Украина, 18-19 апреля 2013 г. – Харьков, 2013. – С. 69.

7 *Ахтемийчук Ю.Т., Цигикало А.В.* Фотодокументирование морфологических исследований // Вестник морфологии. – 2002. – Т. 6, № 2. – С. 327-329.

ТҮЙІН

Мақала ұрықтық даму кезеңінің басындағы жатырдың құрылысы мен топографиясының ерекшеліктерін зерттеуге арналған. Басым жағдайда әйелдердің жыныстық ағзаларының ішкі ауруларының даму себептері адам дамуының пренатальді кезеңінде қалыптасуы туралы пікір талассыз болып табылады. Алайда, кейбір туа біткен ақаулар перинатальді морфогенездегі бұзылулардың салдары болып табылады. Морфологиялық зерттеудің барабар әдістері арқылы 4-6 ай дамыған ұрықтардың 30 препарат жатырының құрылысы зерттелген. 4 айлық ұрық жатырының түбі келесі пішіндермен сипатталған: жалпақ – 2 жағдай, дөңес – 1 жағдай, науалы – 5, адырлы – 2 жағдай. Жатыр түбінің 5 айлық ұрықта анықталған пішіндерінің бірдей таралуы байқалған: 3 жағдайда – адырлы пішін, тағы да 3 жағдайда науалы болса, 2 жағдайда –

жалпақ және 2 жағдайда – дөңес. 6 айлық ұрықтарда жатыр түбінің жалпақ пішіні басым болған (10-ның 7-і). Бір жағдайда науалы, дөңес және адырлы болуы анықталды. 4 айлық дамыған ұрықтың екінші триместрдегі жатыр түбінің науалы морфологиялық пішіні 6-шы айда жалпақ пішінге дейін дамиды.

Түйінді сөздер: жатыр, ұрық, адам, анатомия.

АННОТАЦИЯ

Статья посвящена исследованию особенностей строения и топографии матки в начале плодного периода развития. Неоспоримым является утверждение о том, что значительным образом причины развития заболеваний внутренних женских половых органов формируются в пренатальном периоде развития человека. Однако некоторые врожденные пороки являются следствием нарушения именно перинатального морфогенеза. Адекватными методами морфологического исследования изучено строение матки на 30 препаратах плодов 4-6 месяцев развития. Установлено, что у плодов 4-х мес. дно матки характеризовалось следующими формами: плоское – 2 случая, выпуклое – 1 случай, желобчатое – 5, холмистое – 2. У плодов 5 мес. наблюдается равномерное распределение установленных нами форм дна матки: в 3-х случаях холмистая форма, еще в 3-х – желобчатая, в 2-х – плоская и еще в 2-х – выпуклая. У плодов 6 мес. преобладала плоская форма дна матки (7 из 10). По одному случаю обнаружили желобчатую форму, холмистую и выпуклую. Морфологически форма дна матки во втором триместре меняется с желобчатой на 4-м месяце развития до плоской на 6-м.

Ключевые слова: матка, плод, человек, анатомия.