INTRODUCTION: Gastroshizis and omphalocele (embryonic hernia, umbilical hernia) - one of the most severe developmental defects of the anterior abdominal wall, in which part of the abdominal organs at birth outside the peritoneum - is located in the membranes of the umbilical system, which consists of the amnion, substance and an underdeveloped peritoneum [2,5]. Children with the total form of gastroshizis and
large omphalocele are usually hospitalized in critical condition. Typically, cyanosis in the skin lining is evident in such children. Body temperature may also rise. Children are lazy, have little movement. When the abdomen was examined, it was small, with darkening of the lateral surfaces, and breathing focus on the tension of the epigastric area. In the form of gastroshizis and large-sized embryonic hernias always retains a significant portion of the liver in addition to the intestine [3,4,7].

The presence of this organ, which has a less elastic, constant volume in the hernia sac, often leads to incomplete development of the limb structure, occupying a small volume in the abdominal cavity. In accompanying diaphragmatic defects, the hernia sac may even become the heart and lungs. Because of strong tensionintra-abdominal pressure increases sharply, which leads to compression of the diaphragm, veins, intestines, which are elastic and hollow organs. From a clinical point of view, serious disorders of respiration (increased pressure in the inferior vena cava and portal vein system, taxi-Brady arrhythmia, systole) occur. All these signs pass only after the forcible entry of members is stopped [6]. According to various authors, the incidence of these defects in infants ranges from 1: 1200 to 1: 21000 [1,2]. They occur in one in every 6000 children born on average. In 54% of cases, this pathology is associated with many congenital defects of other vital organs and systems (heart, central nervous system, urinary tract), as well as genetic diseases such as 13 and 18 pairs of chromosome trisomy, Down, Backwith-Wiedemann syndrome [2]. Mortality in this pathology varies widely, averaging 9.1-65% [2, 4].

With a defect of the anterior wall of the abdomen the consequences of conservative and operative treatment of newborns vary: from good in small-sized omphalocele to giant-sized hernias and in total forms of gastroshizis, viscera-abdominal disproportion can be critically difficult to resolve with poor outcomes. Currently, antenatal UTT is the “gold standard” in the diagnosis of anterior abdominal...
wall pathology, and its sensitivity is 70-100%. With antenatal diagnosis in pregnant women, Improvements in the methods of have led to an increase in the detection of this defect, but, as before, its possibilities are insufficiently studied [7]. Most often, the hernia consists of intestinal loops, stomach and liver, covered with two layers: the inner (abdominal wall) and outer (amnion) membrane.

The smooth and shiny membranes consist of a vartonov substance and a thinned peritoneum, through which in some cases the contents of the hernia sac are visible. The umbilical cord is directly attached to the hernia membranes, mainly is attached to the bottom-side surface. The edge of the bulge passes from the hernia membrane to the unchanged anterior wall of the abdomen, where the skin may partially cover the hernia sac in the form of a ring [3]. For a long time it was not decided to take such patients. The high mortality rates in this pathology are due to incorrect choice of antenatal, intranasal, preoperative and postoperative treatment of patients, as well as the method of defect closure [2].

The reasons for the lack of detection of the defect are the lack of a clear system for their detection, the lack of access to counseling centers for pregnant women and the lack of expertise in the diagnosis of this pathology. Postnatal diagnosis, postnatal follow-up regimens, and guidelines for surgical procedures are still very important and little studied issues. Synthetic patches based on biological substrates (xenopericardium, lyophilized hard meninges) as an allotransplant.

Research on the analysis of the results of the application of different options of plastics in the application remains one of the important directions [8]. However, to date, this method has not been scientifically substantiated in the surgical treatment of infants with omphalocele. Recent literature suggests that the incidence of this pathology in infants is increasing, with mortality rates ranging from 23 to 55% among CIS countries [3,4]. To date, surgical treatment of umbilical hernia. The effectiveness
of remains controversial and it depends on the anatomical features of the anomaly. Although radical single-stage placenta with local tissue has always been the most preferred, its use is limited in abdominal anterior wall defects with pronounced viscero-abdominal disproportion [1,4].

Performing this surgical procedure in children often leads to the development of compression syndrome of the inferior vena cava, which is accompanied by serious complications that can lead to death. This is an anomaly prenatal ultrasound diagnosis is of great importance in resolving fetal retention or abortion periods when accompanied by multiple birth defects. According to the literature, the minimum time for diagnosis of these defects is 12 weeks ± 3 days [5, 6]. Sometimes the lack of detection of the defect is because the antenatal diagnosis is not fully established, there are few pregnant women in counseling centers, and specialists have little information about this pathology. The above is problematic with this treatment level, because the treatment of large-scale omphalotsele and gastroshizis in infants is not only a medical but also a social problem.

**Purpose.** Improving the diagnosis and surgical treatment of congenital anterior abdominal wall defects in infants.

**Materials and methods.** In the Republican educational-therapeutic-methodical center of neonatal surgery under the Republican perinatal center in 2006-2017 in 277 patients various defects of anterior abdominal wall were observed. Including among them omphalotsele - 103 (37.2%); gastroshizis - 96 (34.7%); aplasia of the muscles of the anterior abdominal wall - four (1.4%); bladder extrophy - 68 (24.5%); cloaca extrusion was observed in 6 (2.2%) patients. The above-mentioned congenital defects are classified into separate oncological groups, which differ clinically and morphologically, and among them, it is seen that the proportion of omphalotsele and gastroshizis is high. Therefore, our work is a clinical analysis of these infants, based
on the analysis of diagnostic results and treatment methods. Of these, 103 (45%) of the babies born with a diagnosis of omphalocele were girls and 58 (56%) were boys. Of the total number of babies born with omphalocele, 84 (82%) were born on time and 19 (18%) were born prematurely. Infants born with omphalocele were hospitalized at the following intervals. 76 (73.8%) on the 1st day of life, 2–15 babies per day (14.6%), six babies on day 3 (5.8%) and 6 babies (5.8%) on day 4 were brought to the hospital. Of the 96 infants diagnosed with gastroshizis, 54 (56.3%) were boys and 42 (43.7%) were girls. Premature infants accounted for 51 (53%) and premature infants for 45 (47%). Babies born with gastrochisis were hospitalized at the following intervals. Postpartum 1–day (0-24 hours) 81 (84.4%) patients, day 2 (24-48 hours) - 13 (13.5%) and 4 days later (48-72 hours) - 2 (2.1 %) patients were admitted to the infant ward. In all patients, in addition to general clinical examination methods, general radiography of the abdomen, UTT of visceral and umbilical cord defects, echocardiography, as well as neurosonography were performed.

The 2 most common congenital abdominal wall defects are gastroshizis and omphalocele. Both are usually diagnosed prenatally with fetal ultrasonography, and affected patients are treated at a center with access to high-risk obstetric services, neonatology, and pediatric surgery. The main distinguishing features between the 2 are that gastroshizis has no sac and the defect is to the right of the umbilicus, whereas an omphalocele typically has a sac and the defect is at the umbilicus. In addition, patients with an omphalocele have a high prevalence of associated anomalies, whereas those with gastroshizis have a higher likelihood of abnormalities related to the gastrointestinal tract, with the most common being intestinal atresia. As such, the prognosis in patients with omphalocele is primarily affected by the severity and number of other anomalies and the prognosis for gastroshizis is correlated with the
amount and function of the bowel. Because of these distinctions, these defects have
different management strategies and outcomes.

The goal of surgical treatment for both conditions consists of reduction of the
abdominal viscera and closure of the abdominal wall defect; primary closure or a
variety of staged approaches can be used without injury to the intra-abdominal
contents through direct injury or increased intra-abdominal pressure, or abdominal
compartment syndrome. Overall, the long-term outcome is generally good. The ability
to stratify patients, particularly those with gastroshizis, based on risk factors for
higher morbidity would potentially improve counseling and outcomes.

Management of congenital abdominal wall malformations is still a challenge in
pediatric surgery due to visceroabdominal disproportion, large defects of abdominal
wall and immature abdominal cavity. Most of the patients treated with primary
closure need artificial substitutes like patches or biomaterials for non-permanent
abdominal wall closure. Patches represent the source of constant infections and
complications like separation of prosthesis from fascia. Removal of these patches and
ventral hernia repair is essential afterwards. As for component separation technique,
this method helps to restore normal anatomy of anterior abdominal wall, results in
good cosmetic appearance, requires only one-stage operation procedure, minimal skin
flap advancement and is associated with lower infection risk. Although, while
performing component separation technique, perforator branches of epigastric artery
(per umbilical perforators) are damaged and puts the vascularization of the skin at the
risk. Only pudenda artery branches and intercostal arteries are left to supply the skin
with the blood, which from our point of view is insufficient. Accordingly, for
successful treatment of congenital abdominal wall defects, further research in order to
develop new operation techniques, as well as search for the ideal biomaterials for the
closure of the large defects of anterior abdominal wall is essential. These biomaterials
should possess unique biological properties that are important for tissue repair, including anti-inflammatory, antimicrobial, antifibrosis, antiscarring, as well as a reasonable cost and low immunogenicity.

**Results and discussion**

Of the 96 infants with gastroshizis, 64 (66.7%) had a total, 27 (28.1%) had a subtotal, and 5 (5.2%) had a local form of gastroshizis disease. In 55 (57.3%) of the 96 patients diagnosed with pathology at birth, ultrasound examination of gastroshizis revealed that the contours of the anterior abdominal wall were uneven and the defect was located some distance from the umbilical cord. In our study, ultrasound accuracy in gastroshizis was 100%. Surgery was performed in 88 (91.7%) patients we practiced. Radical surgery was performed on 69 (71.9%) newborns in total, subtotal, and local forms. In 17 (17.7%) patients, surgical treatment was carried out in stages. 52 (59.1%) patients died after surgery.

The most common cause of postoperative death is aspiration pneumonia and scleremia oligoanuria because of painful shock, sepsis, necrosis and enterocolitis, cardiovascular and respiratory failure due to hypothermia on the way that is. According to the size of the omphalocele, it was distributed as follows: in 11 (10.7%) infants, complicated forms of omphalocele were detected, and in 92 (89.3%) uncomplicated forms. In 3 (2.9%) cases, iatrogenic injury causing lower bowel obstruction was detected as a result of very close contact of the umbilical cord with the hernia sac. In almost all of our patients, the hernia sac consisted of the stomach, liver, and intestinal loops.

Omphalotsele antenatal in 63 of our 103 patients determined using UTT during the period. In these pregnant women, fetal omphalocele was detected in 4 cases in the first trimester, 24 cases in the second trimester, and 35 cases in the third trimester. In 44 (42.7%) of the patients in our follow-up, a large number of additional anomalies
were identified, while in 59 (57.3%), omphalocele was the only developmental defect. Among the satellite defects, 21 (47.7%) were due to cardiovascular defects, 13 (29.6%) were due to gastrointestinal defects, and 10 (22.7%) were due to gastrointestinal defects.) other members and system defects were observed. It should be noted that the larger the omphalotsele size, the more additional defects were encountered. For example, 23 (95.8%) of children with 24 large omphalocele were found to have multiple defects. In our research, we have developed a new method of operating on large omphalocele and the plasticity of the anterior abdominal wall in it (patent for the invention №IAP05314 "Method of treatment of large omphalocele in infants"). This method was used in 9 (37.5%) patients with large omphalocele.

The technique of this method is as follows: before the start of the operation, the infants underwent gastric decompression and upper bowel obstruction. Then, under endotracheal anesthesia, the surgical site was treated with antiseptics as needed, a circular incision was made at the border of the hernia sac, and elements of the umbilical cord were treated, i.e., umbilical elements were connected. In this case, the hernia is primary when the sac is cute the primitive peritoneum was preserved. We then mobilized the skin and muscle aponeurosis and cut the aponeurosis crosswise from the side to the anterior axillary line, from the top to the dagger-shaped growth, and from the bottom to the symphysis.

The 4 sheets of the resulting aponeurosis were sutured in an “X” shape, thus forming a carcass of the aponeurosis over the hernia, i.e., the ventral hernia was created at the expense of the aponeurosis, not the skin, as in Gross surgery. With this method, we have the abdominal cavity we achieved an increase in volume and a decrease in viscero-abdominal disproportion. Preoperative preparation consisted of correction of homeostasis disorders and lasted 6–24 h.
When it came to all infants with omphalocele, decompression of the gastrointestinal tract and protective procedures of the hernia sac with sterile dry salafan coating were performed.

The criterion for the effectiveness of preoperative preparation was assessed by the restoration of diuresis and hemodynamic parameters. Omphalocele 32 (31%) of infants treated with e died. Of these, 26 (81.3%) children died in the early postoperative period, and 21 (66%) of those who died had multiple defects in systems 2 or more, leading to the death of the child in the early postoperative period. Thus, omphalocele is more common in boys. A correlation was found between hernia size and satellite defects, i.e., the larger the hernia size, the greater the incidence of satellite defects was high.

**Conclusions**

1. 33.3% of gastroshizis are subtotal and local forms, the total form occurs in 66.7%.

2. The most common (95.8%) occurrence of satellite and multiple developmental defects occurs in large-sized omphalocele.

3. 76.7% of omphalocele are small and medium-sized forms, while large-sized omphalocele is found in 23.3%.

4. The complicated omphalocele is peculiar in almost all cases to its large-sized forms.

5. In infants, omphalocele occurs in 42.7% of cases in combination with defects of other organs.

6. Prenatal ultrasound screening is a very high-level screening method, the accuracy of which is almost 100% in omphalocele and gastroesophageal reflux disease.
7. Fetal omphalocele and gastroshizis are more common (55.6%) detected in the third trimester of pregnancy using UTT.

**Literature:**


