Hydronephrosis - a persistent progressive an abnormal dilation of the renal pelvis, and calices with disturbance of the urinary outflow, renal parenchymal atrophy and progressive decrease of its functions.

According to ICD-10 congenital hydronephrosis is encrypted with Q 62.0. The term "hydronephrosis" was first introduced by P. Rayer in 1841.

Frequency. Hydronephrosis is one of the most common diseases of the urinary system in children - 2.8 deaths per 1,000 newborns, with 1.5 times more common in girls, unilateral.

Etiology and pathogenesis. Is inherited in an autosomal dominant pattern.

The most common cause of hydronephrosis is constriction UPS, less often compression of the ureter with blood vessels, fetal bundles and adhesions, constriction of VUS, neurogenic dysfunction of the urinary system. Hydronephrosis proceeds in 3 steps: I - pyeloectasia, II - prehydronephrotical, III - hydronephrosis.

Prenatal diagnostics. Currently there are no common sonographic criteria for determining the size of the standard indicators of anteroposterior pelvis size, including, in different terms of gestation. Most experts propose to consider pyeloectasia to be an increase in the anteroposterior renal pelvis size more than 5 mm in the second trimester, and more than 8 mm in the third trimester, and the increase more than 10 mm is definitely interpreted as hydronephrosis, no matter of gestational term.

Most important ultrasound aspects are the exception of megaureter, assessment of the bladder, measuring the amount of amniotic fluid. In order to precise the forecast it is advised to determine the sex of the baby in prenatally. It is known that pyelectasis is 3 times more common in male fetuses, but they have it more often is "transitory" in nature, while female children possibility of retention of pathological changes in the postnatal period is much higher. The localization of deformity, as it often persists in unilateral (47%) than bilateral lesions (26%), and thus increases the usage of surgical treatment in the postnatal period, is important for prediction.

Clinical management of pregnancy and delivery. Hydronephrosis in combination with other abnormalities chromosomal anomalies can be indications for abortion in later periods (up to 22 weeks).

Prenatally diagnosed hydronephrosis is an indication for fetal operations to eliminate it, allowing to save the kidney tissue before an irreversible stage of its destruction.

A combination of hydronephrosis with oligohydramnios, and therefore a high risk of progression of placental dysfunction, fetal death, stillbirth may occur. Availability of antenatal fetal distress, hydronephrosis and oligohydramnios may require early delivery. Operative delivery is useful when abnormality is isolated and there is absence of co-vice chromosomal abnormalities.
Combination with other malformations. Hydronephrosis occurs in Down's syndrome, Patau (37%), Edwards (18%), Turner (8%) and triploids (4%), can be combined with megaureter.

Symptoms. Most often congenital hydronephrosis asymptomatic or oligosymptomatic (enuresis, abdominal pain of uncertain localization) and first detected during infection. Sometimes hematuria occurs. The debut of the disease may start with renal colic on the ground of suddenly appeared difficulties of urinary outflow. Congenital hydronephrosis can be formed without the obstacles for urinary outflow - when combined with megaureter.

Early neonatal and postnatal diagnosis includes screening ultrasound echotomoscopy, excretory urography, radioisotope renography, dynamic scintigraphy and computed tomography. Laboratory tests reveal micro- and macro hematuria, and when complications IMS occur - proteinuria, bacteriuria and neutrophil leukocyturia.

Treatment is always surgical.

Prognosis depends on the time of surgical treatment, concomitant malformations and complications.

Prevention is to identify burdened history of future parents and their relatives and conducting studies on antigenic systems HLA (antigens A9, B12, B35). Also prenatal diagnosis of hydronephrosis by mass ultrasound screening of pregnant women in 18-22 weeks of pregnancy is carried out.