Ph.D. Thesis

Improving methods of diagnosis and treatment of Posterior urethra valves associated with bladder - ureteral reflux to children

ANATOMICAL – CLINICAL EPIDEMIOLOGICAL RESEARCH

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ABSTRACT

Posterior urethra valves, is a congenital abnormality characterized by the presence of mucosal folds semicircular posterior urethra, which makes an obstacle to the evacuation of urine, with serious repercussions on the upper urinary tract and is located in the distal portion of the prostatic urethra.

Urethral obstruction is most often a disease of the male, with an incidence of 1: 5000-8000-25000 and constitutes 10% of antenatal diagnosed hydronephrosis.

Name of valve anatomy is not appropriate because it implies a certain structure with normal function. However, it was clinically acceptable, because the fold or membrane of the posterior urethra acts as a one-way valve, preventing antegrade flow of urine, the urethra with retrograde normal permeability.

Actual etiology of posterior urethra valves remains unclear and is caused by obstruction in the pathophysiology of severe bladder made early during the second gestational trimester. Urinary tract located upstream of the urethra membrane expands trying to cope with intraluminal pressure increases progressively. Eventually the entire urinary tree will be affected, including posterior urethra, bladder, ureters and kidneys. Thus the posterior urethra lengthens and expands; there is hypertrophy of the bladder detrusor muscle, the development of a unilateral or bilateral ureter - hydronephrosis with or without bladder-ureteral reflux, renal dysplasia. Bladder-ureteral reflux is present in two thirds of cases and is an associated factor of gravity.

Symptoms are nonspecific depending on the age at which is detected from respiratory distress, dehydration, sepsis globe bladder, no urine output within 24 hours, at the age of the newborn, the fever, itching, repeated urinary infections, urinary stream weak urinary incontinence in the older child.

The main objective of any comprehensive anatomical study is to blends "intuitive, with explicit and applicative" by transposition of clinical and anatomical in medical practice, following the understanding of clinical decision making and how to transfer research results into clinical practice of medicine especially in the specific case of children. The general part brings the development of the current state of research topic, the concepts of anatomy and embryology clinical presentation of the prostatic urethra lesion location and description of theories postulates the formation of posterior urethra valves, the etiology, pathophysiology, epidemiology and their classification, the clinical signs and symptoms and differential diagnosis positive.

Antenatal fetal uropathies can be diagnosed in most cases by systematic ultrasound examination between 20-22 weeks of gestation. Posterior urethral valve (VUP) is the most serious congenital obstructive disease of the urethra, as is usually highly obstruction and dilation occurs with the entire urinary tract, since the fetal period, namely from 24 to 28 weeks of gestation.
The special importance of the work begins with early diagnosis of posterior urethra valves, from the dramatic and sometimes nonspecific symptoms severity, occurred immediately after birth. Positive diagnosis, has two aspects: antenatal diagnosis, fetal ultrasound when highlights from week 24 to 28 urerohidronefrosis unilateral or bilateral, relaxed bladder with walls thickened, urethra, prostate thickened.

Postnatal diagnosis highlights besides changes described above, and thinning kidney parenchyma, bladder trabeculs, Ascites, present in ultrasound. The method of choice is miction cystography, highlighting bladder neck hypertrophy, thickened bladder wall, highlight and type of valve. Add to these and other imaging methods, namely, urography, endoscopic and laboratory examinations, diagnosis is important for serum creatinine.

Besides anatomic-clinical research, an important place and modalities of treatment, the study cases were the subject of this research, showing the importance of early disease diagnosis, in order to choose appropriate therapeutic process.

Treatment, like diagnosis also has two stages. Some authors are adept of "in utero" therapy, with indications that oligoamnios and urerohidronephrosis, but surgery is controversial because of high mortality and long-term prognosis uncertain. In all cases monitored was postnatal treatment after stabilization of general condition, the treatment of septic state, draining the bladder. Surgery, correction of urethral obstruction removed and provided renal drainage and endoscopic ablation consisted of valves, the technique most often used today as a result of miniaturization of pediatric endoscopes. But in all cases investigated, prenatal diagnosis and careful monitoring and know about the cause of infant allowed adequate treatment, appropriate, uncomplicated, and the fastest healing.

Postnatal treatment after stabilization of general condition, the treatment of septic state, draining the bladder is surgically removing target and urethral obstruction and renal drainage and endoscopic ablation consists of valves, the technique most often used today as a result of miniaturization of pediatric endoscopes.

Another therapeutic alternative, although rarely used, is bladder stoma, alternative primary ablation, ablation followed by itself and leads high (pyelo stoma, ureter stoma, high side if serum creatinine is high and stagnant evolution 4-6 weeks. Then corrected reflux bladder -ureteral if it persists, and in case of terminal renal failure, renal transplantation is necessary (3 cases of the presented requires this therapeutic alternative).

One of the purposes of the paper is to highlight how many children diagnosed with ante or postnatal bladder - ureteral uretero- hydronephrosis and reflux were the cause obstruction in the bladder on the posterior urethra valves, what are the most effective therapeutic procedures in these cases, the algorithm of effective treatment and monitoring and the analysis on the degree of impaired renal function.

The study group was statistically significant, as I said, VUP is a rare malformation (170 children diagnosed with reflux bladder- urethral, male from Tirgu-Mures Pediatric Clinic, where part of antenatal
diagnosis was confirmed by fetal ultrasound, which demonstrated the presence of valves 5 (3 cases with antenatal diagnosis), 20 children operated valve of the posterior urethra at the MS Curie Pediatric Surgery Clinic Hospital Bucharest and 2 children operated at the Pediatric Surgery Clinic of Oradea) and interdisciplinary collaborations (involving specialist neonatologists, pediatricians, gynecologists, surgeons pediatric urology, embryology, etc.) allowed evaluation of complex data and several synthetic and analytical conclusions.

Of the 27 cases covered by this study show that only 6 cases were identified antenatal, and the rest of them postnatal, when diagnostic methods were more permissive. Nonspecific symptoms, described in the literature, together with imaging techniques have focused diagnosis for 13 cases of posterior urethra valve to sugar. The rest of the children aged between 1-3 years were found (4 totals) and 4 children were diagnosed over the age of 3.

44% of the group studied children had bladder - ureteral reflux, of which 50% bilateral, there is a similarity here with the literature. The surgery benefited 25 children; all cases were resolved surgically postnatal. Most cases were resolved surgically at the age of the newborn, infant age respectively. Generally, infants received endoscopic ablation of the valves in a single surgical time, either practiced bladder stoma, followed by ablation, or other higher derivatives.

The vast majority of cases evolved favorably, with urinary tract infections, but no damage, growth, sexual function or urinary continence. Still 9% of the cases in which bladder ureteral reflux was present, have developed chronic renal failure.

Research that has been the subject of this thesis, demonstrated once again that this rare congenital malformation should be seriously addressed as it can culminate in its evolution to terminal renal failure, requiring peritoneal dialysis and renal transplant eventually, especially if we do not have antenatal suspicion and its diagnosis and treatment is applied later postnatal age of the infant, which marked the quality of life for these children.