

Enuresis

Enuresis is an uncontrolled leakage of urine at a time when the child's surroundings already consider it normal for the child to control micturition. According to the International Consultation on Incontinence, enuresis is the involuntary leakage of urine at night in children over the age of 5, more often than twice a month, unless a congenital or acquired defect central nervous system and urinary tract is detected. Most children urinate at night (**enuresis nocturna**). There are always intervals between urination when the child can handle micturition. **Urinary incontinence** is a condition where the baby is practically never able to control urine leakage and his diapers/laundry is permanently damp/wet. The cause is mostly a hyperactive bladder detrusor.^{[1][2]}

Classification

- **primary enuresis** – the child has never checked for micturition;
- **secondary enuresis** – the child begins to urinate again after a previous dry interval (at least 6 months);
 - mental stress, divorce of parents, birth of a sibling, etc.;
 - urination at night and during the day – urinary tract infections, urolithiasis.^[2]

Or:

- (primary) monosymptomatic (night) enuresis (80 % cases)^[2] – urination in a child without additional anatomical pathology of the urinary tract and without a history of significant bladder dysfunction;
- secondary enuresis - more severe organic or functional disorder.^[1]

Epidemiology

Enuresis is a very common phenomenon. When starting school at the age of 6, about 10% of children still urinate, at the age of 5 5%, at the age of 20 1-3% of people. Occasionally, about 0.5-1% of adults urinate.^[1]

Etiopathogenesis

The causes are multifactorial. Genetic predisposition plays a role in monosymptomatic nocturnal enuresis based on a functional bladder disorder. At night, diuresis is increased to nocturnal polyuria - over 130% of the capacity of the bladder. Urine has a lower osmolality. Other causes include urinary tract anomalies; spina bifida occulta; tethered cord syndrome; neurogenic bladder.^[1]

Diagnostics

- **anamnesis**: dry break, psychomotor development, stress factors;
- **micturition card**: fluid intake, number of micturitions (normal is 4-8 per day), amount of urine in individual portions (weighing dry and wet diapers);
 - bladder capacity: 30ml + (age in years × 30); in children over 12 years: 300-400 ml;
- **uroflowmetry**: the child should start urinating immediately after being asked to micturize, without visible effort, the flow of urine should be strong, uninterrupted;
- **physical exam**: external genitalia (phimosis, labial synechia), linen, anal anus, lumbosacral region (skin depressions? → MR of spinal canal and spinal cord); height, weight, blood pressure;
- basic **urine test**, specific density of morning urine (standard: > 1010 g / l);
- event. **ultrasound** of the uropoietic tract and basic functional examination of the kidneys;
- in case of micturition failure – **micturition cystourethrography** (MCUG), event. **urodynamic examination**;
- **postmixture residue** – ultrasound within 5 minutes after micturition (repeatedly detected residue > 20 ml → functional defect of emptying).

Disorders of micturition:

- delayed start of micturition, connection of abdominal press during micturition, weak and intermittent current - susp. functional bladder disorder or infravesical obstruction;
- restraint maneuvers - the child feels the need for micturition, but delays it by crossing the lower limbs, climbing to the toes and squatting on the heels, which press on the perineum;
- postmixture dribbling - in a child, immediately after micturition, uncontrolled leakage of urine occurs;
- vaginal reflux (influx) - during micturition, urine enters the vagina and then flows freely from there;
- low frequency of micturition is often associated with faecal emptying disorder and encoprosis.^[1]

Therapy

In monosymptomatic nocturnal enuresis, **regimen measures** are indicated, such as fluid restriction in the late afternoon and evening. The patient keeps an enuretic diary, and a reward system for dry nights is introduced. Psychological care is added as needed.

The fastest effect is pharmacological therapy using **an analogue of antidiuretic hormone** (desmopressin acetate). *Minirin-Melt* is administered sublingually before bedtime, significantly reducing urine volume, but often recurrence of enuresis after discontinuation. In case of overdose, there is a risk of **fluid retention to water**

poisoning (headaches, nausea, vomiting to tonic-clonic convulsions). It is also possible to prescribe **tricyclic antidepressants** (imipramine hydrochloride), oral administration, often after return of enuresis after discontinuation. In case of overdose, severe CNS symptoms, GIT complications, cardiotoxicity are evident.

Enuretic alarms have the best long-term effect. Electrical wires connected to a low voltage source are inserted into the child's bed or underwear. The electrical circuit is switched on, if urine appears in the area of the electrodes (a few ml is enough), an alarm sounds, the child wakes up and holds the micturition. Therapy requires great cooperation from the family. Enuresis disappears in about 1-3 months, after discontinuation of relapse, but significantly less often than with desmopressin.

Anticholinergics (oxybutynin) are used for irritating bladders.^[1]

Prognosis

Monosymptomatic enuresis usually resolves spontaneously, the prognosis of other forms depends on the cause. In older children, urination is a serious stress factor, reducing their self-esteem; parents' tolerance to enuresis often decreases and tends to punish enuretics^[1].

Links

Related articles

- Enkopresis
- Urinary incontinence in adulthood

1. LEBL, J - JANDA, J - POHUNEK, P, et al. *Klinická pediatrie*. 1. edition. Galén, 2012. 698 pp. pp. 622-624. ISBN 978-80-7262-772-1.
2. FLÖGELOVÁ, Hana - VÁVRA, Jan. Noční pomočování - problém každé ambulance pediatra. *Pediatric pro praxi* [online]. 2009, y. 10, vol. 3, p. 146-150, Available from <<https://www.pediatricpropraxi.cz/pdfs/ped/2009/03/02.pdf>>.