RATIONALE FOR EARLY NEONATAL RADICAL RECONSTRUCTION OF BLADDER EXTROPHY WITHOUT OSTEOTOMY

Egamnazarov N.K., Ergashev B.B.
Republican Perinatal Center, Tashkent, Uzbekistan

Relevance. Bladder exstrophy (BE) remains one of the most severe malformations in pediatric urology. Traditional multi-stage surgical approaches, which involve delayed intervention (after 2-3 months of age) and traumatic pelvic osteotomy, are associated with a high risk of severe complications, including complete wound dehiscence. Therefore, the search for less invasive and biomechanically sound approaches is highly relevant.

The aim of the study is to improve the results of surgical treatment of children with EMP by scientifically and clinically substantiating the effectiveness of one-stage radical reconstruction in the early neonatal period without osteotomy.

Material and methods. A retrospective and prospective analysis of the surgical treatment outcomes of 48 patients with EMP was conducted. Patients were divided into two cohorts: a comparison group (n=22) – traditional delayed tactics without pubic symphysis reconstruction, and a study group (n=26) – early neonatal radical correction with symphysis reconstruction without osteotomy.

Results and discussion. The study demonstrated that the optimal time for primary intervention is the "golden window" the period from 3 to 28 days of life. During this period, the newborn's body maintains high circulating levels of the maternal hormone relaxin. This endocrinological background ensures maximum physiological elasticity and compliance of the pelvic ring ligaments. This allows surgeons to smoothly bring the pubic bones together and reliably close the symphysis without the use of a traumatic osteotomy (artificial cutting of the bones).

Biomechanical reduction of the pelvic ring neutralizes tension vectors, creating tension-free conditions for the sutured soft tissues of the anterior abdominal wall, sphincter, and bladder itself. A comparative analysis demonstrated the high effectiveness of this new approach. In the comparison group, the incidence of catastrophic complications, such as complete exstrophy recurrence, reached 77.2%, requiring 43 major repeat reconstructive surgeries. In contrast, in the study group (neonatal correction without osteotomy), the incidence of wound dehiscence and complete recurrence was dramatically reduced by almost sevenfold, reaching only 11.5%.

Conclusions. Single-stage radical reconstruction of bladder exstrophy performed in the early neonatal period allows for the unique physiological elasticity of the neonatal pelvic ring. Avoiding traumatic osteotomy not only reduces surgical invasiveness but also ensures reliable tension-free symphysis fusion, leading to a significant reduction in the rate of postoperative recurrence.