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Pregnancy and delivery after augmentation enterocystoplasty: a case report

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Background. The aim of this article is to present a rare clinical case of pregnancy and surgical delivery after bladder augmentation surgery in the past.

Methods and materials. In this report we present one case of a 23-year-old woman who became pregnant 3 years later after bladder augmentation surgery for congenital microcystis leading to hydronephrosis and nephrosclerosis and delivered a live healthy baby through a lower segment Caesarean section at 38 weeks of gestation in Vilnius University Hospital Santariškių Clinics. We investigated all documentation of the patient before and after bladder augmentation enterocystoplasty.

Results and conclusions. Bladder augmentation is mostly performed for women in their childhood or young age and most of them reach reproductive age. There is no contraindications for these women to become pregnant and deliver, both vaginally or surgically. It is advisable to consult urologists regularly, make regular bacteriological urine analysis, take monthly blood samples for kidney function evaluation and perform renal ultrasonography. Multiple consultations in a Perinatology Center are also necessary to follow the fetus condition and prevent preeclampsia. Antibacterial treatment or prophylaxis should be used during pregnancy if necessary, intermittent self-catheterization is mostly performed routinely. The presence of a urologist is suggested during the Caesarean section.

Key words: augmentation cystoplasty, pregnancy, Caesarean section, delivery

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INTRODUCTION

Urinary tract reconstruction is a commonly performed surgery in pediatric urology since the last century. It allows children with complex congenital anomalies, low capacity or neurogenic bladder to maintain normal urogenital tract function and proper continence, increases quality of life. Since most of the women reach reproductive age after an augmentation cystoplasty procedure, pregnancy of these patients often becomes an issue. There is a high risk for the reconstructed urinary tract to be injured as well as the delivery being complicated by the previous reconstructive surgery.

CASE

A 23-year-old woman was admitted to the Obstetric Department of Obstetrics and Gynecology Centre in Vilnius University Hospital Santariškių Clinics on June 7, 2013. She complained of pain in her lower back, irregular uterus contractions. The patient was known to be 38 weeks pregnant, gravidity I (I).

Due to suspected urinary tract infection (UTI) and irregular uterus contractions, the patient was hospitalized to the Obstetric Department for follow-up and a urologist consultation. Pain-killers medication was prescribed, antibacterial therapy with *Sol. Tazobactamum* 4.5 g intravenously 4 times a day started after laboratory tests and a urine specimen confirmed UTI (positive *E. coli* growth in urine).

The patient had a history of repetitive urinary tract infections and dysuria since childhood due to neurogenic bladder. Congenital vesicoureteral reflux, repetitive UTI and low capacity of the bladder led to bilateral hydronephrosis in 2008. In spring 2010 the woman was diagnosed with nephrosclerosis and I° kidney function insufficiency. In autumn 2010 surgical treatment was suggested due to the failure of the conservative treatment and progressing kidney insufficiency. Augmentation cystoplasty using a detubuled ileum segment and left ureterocystoneostomy was performed in the Vilnius University Santariškių Clinics Centre of Urology. Bladder capacity enlarged from 50 milliliters to 200 milliliters with no complications in the post-operative period. Self-catheterization was continued every four hours. The patient was monitored regularly with positive changes in urine tests and quality of life.

In February 2012 the patient was diagnosed with left ovary abscess, laparotomic adnexectomia sinistra was performed after failed conservative treatment.

In autumn 2012 the patient was diagnosed with pregnancy. The patient had one exacerbation of chronic pyelonephritis in the 30th week of pregnancy that was eliminated using intravenous *Piperacillinum* and *Tazobactamum* for 7 days. Constant follow-up of the patient was performed with urine analysis every 3 weeks with monthly urologist consultations. No other complications occurred during pregnancy. Due to a high risk pregnancy, the woman has been consulted in the Perinatology Center for two times. Ultrasound examinations showed no fetal disturbances, but breech presentation was observed.

On 10 June 2013, on 3rd day of her hospital the woman started complaining of greenish fluid leaking from her genitalia. During vaginal examination the cervix was found centralized, soft, 1.0 cm of length, 2.0 cm opened. Meconium-stained amniotic fluid was observed, breech presentation of the fetus was confirmed.

A meeting of obstetricians-gynecologists and urologists was organized immediately. Due to premature amniotic sac rupture, breech presentation and bladder augmentation surgery in anamnesis, surgical delivery was chosen over vaginal delivery. The Caesarean section was performed with the assistance of the surgeon-urologist, responsible for bladder surgery in the past. The mesentery of the neobladder was found attached to the 2nd / 3rd part of the anterior wall of the uterus. After detachment, the mesentery was pushed aside to the right and transverse incision was made in the isthmic part of the uterus. One alive female newborn weighing 3 670 g, 53 cm height was delivered. The Apgar scores were 9/9. No other special changes in the abdominal cavity or pelvis were found, tissues were sutured routinely. After delivery, 1250 IU / 2 ml Anti-D immunoglobulin intramuscular injection was performed. Intermittent self-catheterization was continued after the surgery every four hours.

Three days later a meeting of the doctors was organized due to the patient complaining of shivering and fever (38.7 °C). *Sol. Piperacillinum* and *Tazobactamum* were started intravenously because of positive growth of sensitive *E. coli* in an urine specimen.

Treatment of the patient was successful and she was discharged from the hospital together with the baby on the 8th day from the Cesarian section with no further complaints. Oral *Nitrofurantoinum* was prescribed for one week as a continuous antibacterial therapy. Regular visits in the Urology Center were suggested.

DISCUSSION

Augmentation cystoplasty and self-catheterization is a gold standard for neurogenic bladder dysfunction when conservative treatment such as neuromodulation or onabotulinum toxin is not effective (1, 2, 3, 4). In addition to that, surgery might be the only option for patients with congenital anomalies, such as poorly compliant bladder or as in our case – low capacity of the bladder (congenital microcystis) to prevent kidney function insufficiency as a complication (2). Bladder augmentation surgery is mostly performed for women in their childhood or young age. Most of the patients reach reproductive age as surgery is known to be highly successful with minimal long-term morbidities (2, 3). There is little data about pregnancy and delivery (both Caesarean section and vaginal delivery) of women who had undergone augmentation surgeries. Fifteen cases have been reported in 1990 by Hill (5) and 35 cases in 2003–2006 by Greenwell (6), Quenneville (7), Hensle (8), Shaikh (9). Our patient is known to be the only case of pregnancy after bladder augmentation surgery in Lithuania.

Despite little information, it is stated clearly that ileocystoplasty should not be considered as a contraindication to pregnancy (5, 7, 8, 9). Preservation of kidney function, continence and delivery of a healthy baby should be main attention points. UTI is one of the most common complications (reported in 52–100% of cases) that can affect not only the mother but also the fetus (causing miscarriage, premature rupture of the amniotic sac, preterm labour, congenital infection, etc.) and self-catheterization may play an important role. Urologists and obstetricians must be aware of potential complications to prevent them effectively (7, 9). It is advisable to consult urologists regularly, take monthly blood samples for kidney function (serum creatinine level) evaluation and perform renal ultrasonography to exclude progressing hydronephrosis. Some authors suggest antibacterial prophylaxis during whole pregnancy, while others recommend a regular bacteriological urine analysis and aggressive treatment of all infections at an early stage (8, 9). Multiple consultations in a Perinatology Center are also necessary to follow the fetus condition and prevent preeclampsia as it is more common in the reconstructed group (10% vs 3% in normal population) (9). Due to a small number of these cases in our country we have no official guidelines to follow up pregnancy, but accurate care and attention is paid to any complaints and changes in the status.

Labour management should be individualized reasonably for every woman, possible complications and advantages of both delivery options should be considered. Both vaginal delivery and the Caesarean section have been reported being successful and safe for the mother and her baby. Patients who have normal continence and those after a modified fascial sling with bladder augmentation surgery can deliver vaginally (7, 8, 9). All patients who have undergone bladder neck surgery are recommended to have a Caesarean section (7). However, it is advisable that the Caesarean section should be performed only as an elective procedure, not as an emergency (9). To avoid injury of the reconstructed urinary tract and its blood supply at the time of elective delivery, a reconstructive urologist should attend the surgery. In order to avoid complications of the reconstructed urinary tract and perform a midline incision of the uterus, the augmented bladder must be pushed to the area where a bowel segment was taken. Clean intermittent catheterization after both vaginal and surgical delivery should be resumed (7, 8, 9).

CONCLUSIONS

This case was the first and only one in Lithuania, and due to rarity we have no guidelines for the pregnancy monitoring and delivery mode for such cases. We found 9 articles using keywords *bladder augmentation, pregnancy, delivery,* analyzing pregnancy and delivery after bladder augmentation surgery. They state that pregnancy should not be contraindicated by augmentation cystoplasty surgery in anamnesis. Much attention and accurate care is required during the whole pregnancy and

delivery, both vaginal and surgical. Most women are capable of delivering vaginally, while the Caesarean section should be performed as an elective procedure and assisted by urologists.

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References

1. Johnson EU, Singh G. Long-term outcomes of urinary tract reconstruction in patients with neurogenic urinary tract dysfunction. Indian J Urol. 2013; 29: 328–37.
2. Kamran PS, Goldman HB. Bladder augmentation and urinary diversion for neurogenic LUTS: current indications. Curr Urol Rep. 2012; 13: 389–93.
3. Veeratterapillay R, Thorpe AC, Harding C. Augmentation cystoplasty: contemporary indications, techniques and complications. Indian J Urol. 2013; 29: 322–7.
4. Skaudickas D, Kevelaitis E. Šiuolaikinis požiūris į šlapimo nelaikymą. Medicina (Kaunas). 2010; 46(7): 496–503. Lithuanian.
5. Hill DE, Kramer SA. Management of pregnancy after augmentation cystoplasty. J Urol. 1990; 144: 457–9.
6. Greenwell TJ, Venn SN, Creighton S, Leaver RB, Woodhouse CR. Pregnancy after lower urinary tract reconstruction for congenital anomalities. BJU Int. 2003; 92: 773–7.
7. Quenneville V, Beurton D, Thomas L, Fontaine E. Pregnancy and vaginal delivery after augmentation cystoplasty. BJU Int. 2003; 91: 893–4.
8. Hensle TW, Bingham JB, Reiley EA, Cleary-Goldman JE, Malone FD, Robinson JN. The urological care and outcome of pregnancy after urinary tract reconstruction. BJU Int. 2004; 93: 588–90.
9. Shaikh A, Ahsan S, Zaidi Z. Pregnancy after augmentation cystoplasty. J Pak Med Assoc. 2006; 10: 455–6.

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NĖŠTUMAS IR GIMDYMAS PO ŠLAPIMO PŪSLĖS DIDINIMO OPERACIJOS. KLINIKINIS ATVEJIS

Santrauka

Tikslas. Šio darbo tikslas – pristatyti retą nėštumo ir gimdymo atvejį moters, kuriai praeityje buvo atlikta šlapimo pūslės didinimo operacija (augmentacija).

Medžiaga ir metodai. Straipsnyje pateikiamas vienintelis ir pirmasis atvejis Lietuvoje 23-ejų metų moters, kuri, praėjus trejiems metams po šlapimo pūslės didinimo operacijos (dėl įgimtos mažos šlapimo pūslės bei išsivysčiusios hidronefrozės ir nefrosklerozės), sėkmingai pastojo, išnešiojo ir 38-ą nėštumo savaitę pro apatinio segmento Cezario pjūvį pagimdė sveiką naujagimį Vilniaus universiteto Santariškių klinikose. Atvejo aprašymui retrospektyviai buvo išnagrinėti visi ambulatoriniai ir hospitalizacijų dokumentai iki ir po šlapimo pūslės operacijos.

Rezultatai ir išvados. Šlapimo pūslės didinimo operacijos moterims dažniausiai atliekamos vaikystėje ar ankstyvoje jaunystėje, taigi dauguma tokių moterų sulaukia reprodukcinio amžiaus. Tokioms moterims nėra kontraindikacijų pastoti ir gimdyti natūraliai ar atliekant Cezario pjūvį. Nėštumo metu rekomenduotinas reguliarus gydytojo urologo stebėjimas, reguliariai atliekami šlapimo pasėliai, kas mėnesį rekomenduojama atlikti inkstų funkcijos rodiklius ir inkstų echoskopinį tyrimą. Rekomenduojamos kartotinės konsultacijos Perinatologijos centre vaisiaus būklei įvertinti ir stebėti dėl galimos preeklampsijos. Profilaktika ir gydymas antibiotikais nėštumo metu turėtų būti taikomas, kai yra būtinas, o savarankiška šlapimo pūslės kateterizacija turėtų būti tęsiama tiek iki nėštumo, tiek ir jo metu bei po jo. Atliekant Cezario pjūvį rekomenduojamas išmanančio gydytojo urologo dalyvavimas operacijoje.

Raktažodžiai: šlapimo pūslės augmentacija, nėštumas, Cezario pjūvis, gimdymas