Case Report

Pregnancy after Augmentation Cystoplasty

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Abstract

We report a case of 26 year old female who underwent ileo-cystoplasty for interstitial cystitis and two years later delivered a live baby through a lower segment caesarean section (LSCS) at 36 weeks.

Introduction

More children with complex urogenital anomalies are being successfully reconstructed and developing into socially well-adjusted young adults. Management of lower urinary tract has been revolutionized by advent of self catheterization (SCIC) and augmentation enterocystoplasty.[1] The improved quality of life of these women has led to pregnancy and child birth becoming more desirable. However published experience concerning pregnancy after urinary tract reconstruction is limited. Complications in women who have undergone such complex procedures may endanger them or their foetuses and can disrupt the reconstruction or impair renal function.

We report a case of successful pregnancy in a young woman who previously had undergone augmentation cystoplasty. To our knowledge this is the first such case reported in this region. We review the scanty available literature to counsel better women who have undergone reconstruction and are desirous of child bearing.

Case Report

A 24 year old woman presented in 2003 with severe urinary frequency, urgency and urge incontinence. She would void every 15 minutes and had severe lower abdominal pain if she deferred voiding. She underwent cystoscopic evaluation and was found to have a small bladder. Histological examination of endoscopic bladder biopsy specimens revealed mononuclear infiltrate and mast cells. A diagnosis of Interstitial Cystitis was confirmed. She was started on anticholinergic medication but did not improve. She then underwent bladder reconstruction. Bladder was bivalved and 20 cm. middle ileum was used to perform a clam ileocystoplasty. She recovered well and her symptoms settled. On follow-ups her renal function was normal and upper urinary tracts were intact. However she had large post void residual volume and had to be put on clean intermittent catheterization.

Two years later she became pregnant. This was her second pregnancy. An obstetrician was involved in her follow-up visits. During her pregnancy, she was admitted twice in the hospital for minor vaginal bleeding however obstetrical assessment and ultrasound did not reveal any major problem and she was advised rest. During 24th week of pregnancy she developed burning micturation and flank pain. Urine test subsequently showed E.coli and she was treated with paranteral antibiotics. At 38 weeks pregnancy she was admitted for elective LSCS. The decision to undergo LSCS was taken in view of her previous augmentation cystoplasty and the possibility of damage to the reconstructed bladder during vaginal delivery.

LSCS was performed with a reconstructive urologist (zz) in attendance. The uterus was approached through a lower segment incision and the blood supply of the ileal segment of the cystoplasty was found to be pushed to one side and well out of way of the uterine incision. A 3.5 kg healthy baby girl was delivered with ease and operation completed without any untoward complications. The mother and child made an unremarkable recovery and were discharged on the fifth day. Mother was voiding per urethra without much difficulty.

Discussion

In women augmentation of the bladder is performed for conditions such as neurogenic bladder dysfunction, idiopathic urge incontinence, inflammatory disease, small fibrosed bladder and enuresis.[2] Good success has been reported for women after bladder augmentation, bladder neck repair or continent urinary diversion in terms of continence and upper tract preservation.[3] As more such women reach child bearing age, pregnancy after augmentation cystoplasty is now a noticeable event. However the numbers remain small. Hill[4] in 1990 reported 15 pregnancies in 15 patients from a combined experience of 256 members of Society for Paediatric Urology. Greenwell[5] published a series of 20 women who had 29 live babies. Previous studies showed that clam ileocystoplasty is not a contraindication to pregnancy[4] The goal in managing these pregnant patients is the delivery of a healthy baby while preserving renal function and continence in mother. Urologists and obstetricians must be well aware of potential complications to prevent them effectively. Pregnancy must be diagnosed by serum hCG measurement in this group of patients as urine based methods yield high false positive rates, most probably because of an interaction between reservoir mucus and urine test reagent.[6]

UTI is the most common complication reported from 52% - 100%.[4,5,7] Self catheterization may play an important role. Therefore regular bacteriological analysis of urine is indicated to ensure that all infections are treated aggressively at an early stage. This reduces incidence of premature labour and foetal morbidity.

Renal function must be followed carefully, serum creatinine levels should be monitored monthly and if increased, the upper tract promptly evaluated by renal ultrasound to exclude increasing hydronephrosis.[8] Greenwhile in their series reported 10% incidence of upper tract dilatation requiring intervention. This is far higher than that of general population

<1%.[9] However this upper tract obstruction during pregnancy may simply result from increased foetal pressure on the less physically robust enterocystoplasty or neobladder. There is a higher rate of pre-eclampsia in the reconstructed group (10% vs 3% in normal population).[5] Interestingly none of their patients had documented hypertension or abnormal renal function before pregnancy. We suggest a protocol of review of all such patients at 20 weeks of gestation and thereafter fortnightly until 28 weeks of gestation with ultrasonography of upper tracts, blood pressure measurements, urine analysis and MSU sampling. There after return to routine follow up 4 weekly till 36 weeks and then weekly review till delivery.

Management of labour needs to be assessed individually. In women whose urinary incontinence depends on a successful bladder neck reconstruction it is felt inadvisable to proceed with vaginal delivery because of possible risk to the continence mechanism.[10] Some of the patients with spinal dysraphism may be unable to have epidural hence general anaesthesia and caesarean section is advocated. Vaginal delivery after augmentation and normal continence mechanism has been reported.[7] If a caesarean section is used every attempt should be to do so electively and not as an emergency so that care can be taken to avoid injury to the cystoplasty and its blood supply. A urologist with particular knowledge of the cystolplasty should be present. The neo bladder may have to be taken down before opening the uterus. The mesentery of the neobladder may be pushed to the side by the uterus, as in our case, or it may be draped over it.[4] The mesenteric blood supply can be interrupted but this may not be obvious at surgery or immediately afterwards. If the enteric segment contracts reducing the capacity of the bladder a revision of the enterocystoplasty might be needed.

Conclusion

Pregnancy is not contraindicated after any type of lower urinary tract reconstruction. It has no long-term effects on renal function and does not compromise reconstruction. Close obstetric and urological monitoring of these patients throughout pregnancy is mandatory. UTI are common and need treatment. Although there is an increased need for caesarean sections, pregnancy in women with lower urinary tract reconstruction is ultimately safe for both mother and baby. Inter disciplinary co-operation is desirable for a successful outcome.

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