Case Report

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Ureteral Drainage with Double-J Catheters in Obstructive Uropathy during Pregnancy

A Report of 3 Cases

N.	Nicoletta	Vendola ^a
P.	Pierluigi	Giumelli ^b
R.	Roberto	Galdini ^b
S.	Salvatore	Bennici ^a

Departments of ^aObstetrics and Gynecology and ^bUrology, E. Morelli' Hospital, Sondalo, Italy

Key Words

Double-J catheter

Hydronephrosis, pregnancy

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Abstract

Acute dilatation of the upper urinary tract during pregnancy is a common cause of renal colics and urinary tract infections, leading, rarely, to renal insufficiency. We describe 3 cases with symptomatic hydronephrosis at 28 weeks of gestation who underwent placement of an internal urinary drainage by so called double-J ureteral stents which rapidly reduced obstruction and symptoms and allowed pregnancies to continue to term. We conclude that double-J ureteral stenting is an effective, simple, safe, and economical method to treat acute hydronephrosis during pregnancy.

Nicoletta Vendola, MD, Department of Obstetrics and Gynecology, 'E. Morelli' Hospital, Via Zubiani 33, I-23039 Sondalo (Italy)

Introduction

Ureteral catheters have become increasingly popular in the urologic practice since Zimskind et al. [1] in 1967 first reported the use of long-term indwelling stents that could be inserted cystoscopically. Over the years, many improvements in materials and design led to the development of double-J catheters [2] which are currently used. At the same time, urological indications have been increased, but use during pregnancy has been emphasized only recently, although it is long well known that gestational urinary tract alterations may cause acute manifestations of obstructive uropathy with renal damage which fails to respond to conservative measures of analgesia and positioning [3].

We present our recent experience in 3 cases of acute hydronephrosis during pregnancy who underwent double-J stent placement with a prompt relief of symptoms, an improvement of the ureteral obstruction, and a good management of the gestations until delivery.

Case Reports

During the period May to September 1994, 3 pregnant patients at 28 weeks of gestation and no prior history of renal disease were admitted to our Department of Obstetrics and Gynecology because of symptoms consistent with renal colics. Abdominal ultrasound revealed hydroureteronephrosis not secondary to urolithiasis (ureteral dilatation of 13-15 mm). In 2 cases kidney function alterations were observed, while urinalysis revealed gross hematuria and the 24-

hour urine moderate proteinuria (about 2,000 mg/24 h). Double-J catheters (7 French) were successfully placed under visual control and local anesthesia (1% lidocaine jelly applied through the urethra). All patients experienced prompt relief of symptoms. During the 1st and 7th days after stent placement and periodically once a month until delivery, the patients underwent careful fetal (obstetric ultrasound and computerized ultrasonocardiography) and renal monitoring. Renal ultrasound examinations were repeated at the same intervals to evaluate the renal morphology and the ureteral dilatation and to confirm the position of the stent with drainage into the bladder. Stent placement normalized renal function and abdominal ultrasound results and did not induce any adverse effects on pregnancy or premature labor.

Unremarkable urinary tract infections were the most common complications, which were often asymptomatic and always re-

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sponded to antibiotic therapy. All patients underwent a normal spontaneous full-term delivery and had healthy infants.

The stents were removed 5 days after delivery when urinalysis and abdominal ultrasonography showed normal results.

Discussion

Acute hydronephrosis is the most common cause of severe flank pain in pregnancy [4]. Although the severity of the pain is unrelated to the degree of hydronephrosis, in such patients the clinician should be aware of the possibility of complications which, in pregnant women, may endanger fetal and maternal health or even life: ascending infection and the resulting acute pyelonephritis usually respond well to antibiotics, but may, in case of failure, deteriorate rapidly and unexpectedly to sepsis, acute renal failure, or premature labor [5].

Recent published reports have shown that these conditions can be managed successfully with internal stenting [6], although there are still many doubtful points regarding its application in obstetrics. Drago et al. [7] expressed skepticism about whether double-J stents could be placed during the second half of pregnancy because of the distortion of the anatomy of the pelvic floor. Pollard and Macfarlane [8] observed a high incidence of untoward symptoms while the stents were in situ, and Loughlin and Bailey [9] described incrustation of the ends of the stents which makes removal difficult and may lead to ureteral stone formation.

For this reason, it has been suggested that stents should be changed every 6-8 weeks [9]. The incidence of incrustations is low [6], and the formation of symptomatic urinary stones has been described anecdotally [10].

In our experience, even if limited, double-J ureteral catheters, placed even during the 3rd trimester of pregnancy without difficulty, have been well tolerated, and a good hydration associated with a close monitoring allowed to avoid routine stent changes. We have not used routine antibiotic 'suppression', but rather prophylaxis at the time of stent insertion with close follow-up urine cultures.

We believe that double-J ureteral stenting is an effective, simple, safe, and even economical method in treating acute hydronephrosis of pregnancy: these characteristics suggest its routine application in obstetric practice and its early use in patients with renal colics, urolithiasis, or ureteral malformations known before pregnancy.

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