

RENAL CALCULUS AND OBSTETRIC OUTCOME

ASHOK KUMAR ● D. TAKKAR ● SUNEETA MITTAL ● SUNESH KUMAR

SUMMARY

Urolithiasis represents a serious medical problem. In this study of 5 pregnant women with history of renal calculus, the obstetric outcome is analysed.

INTRODUCTION

Renal calculus disease is an infrequent but not insignificant occurrence during pregnancy. It complicates 1 of every 1500 pregnancies (Rodriguez and Klein, 1988). Nonetheless, urinary calculi are the most common cause of nonobstetric abdominal pain severe enough to hospitalize a pregnant woman (Folger, 1955). The pregnant women with nephrolithiasis may be concerned about the adverse effect of the disease upon pregnancy. The following report is an analysis of the case records of five pregnant women with history of established nephrolithiasis.

MATERIAL AND METHOD

In order to identify all pregnant women with renal stones, the medical records

were analysed retrospectively regarding the course of renal calculi in pregnancy and outcome of pregnancy for both the women and her offspring. Between 1987 to 1993, five pregnant patients with history of documented renal calculi were registered in the antenatal clinic in the first trimester. In all patients, the diagnosis of a renal calculus was confirmed on imaging studies in nonpregnant state.

RESULTS

There were five pregnant women who had history of renal stones. Of these, one had associated horseshoe shaped kidney. The pyelolithotomy had been performed in 2 women and they were asymptomatic at the time of conception. The other 3 women had associated mild to moderate degree of hydronephrosis. The renal parameters remained normal throughout the pregnancy and repeated urine cultures

were sterile. The ages of patients ranged from 21 to 28 years, with a mean of 25.20 years. Out of these 5 pregnant women, 4 were primigravidae. One woman had preterm vaginal delivery at 35 weeks of gestation, 3 patients continued pregnancy until term and one had induced vaginal delivery at 41 weeks. Two women had emergency cesarean section for fetal bradycardia during labor. Of the 3 vaginal deliveries, two had forceps application for obstetric indications. The birth weight of all the 5 babies ranged from 2.7 to 3.2 kgms (Table I). In all children, the 1-min and 5-min Apgar scores were 9/10.

The mother and the neonates were discharged from the hospital within one week after delivery without complications.

DISCUSSION

Nephrolithiasis is an uncommon disorder during pregnancy. The incidence probably varies little from that of the nonpregnant population of comparable age. The presenting signs and symptoms of urolithiasis are likewise similar in the pregnant and nonpregnant states (Drago et al, 1982 and Lattanzi et al 1975). Most patients will complain of flank pain and costovertebral angle tenderness with or

Table I
Renal calculus and pregnancy

S. No.	Age (yrs.)	Gravida	Calculus	POG (wks)	Labor	Mode of delivery	Weight of baby (kgms)
1	25	1	Rt side	40	PROM induced	LSCS	3.2
2	28	2	Bilateral	41	induced	vaginal Forceps (outlet)	3.1
3	27	1	Lt side	39	spontaneous	LSCS	2.9
4	25	1	Rt side	40	induced	vaginal Forceps (midcavity)	3.0
5	21	1	Horse shoe shaped kidney	35	spontaneous	vaginal	2.7

- * POG = Period of gestation
- * Case No. 1, 2 and 3 had associated mild to moderate degree of hydronephrosis.
- * Case No. 4 and 5 were operated
- * Renal parameters normal in all cases.
- * Urine cultures were sterile in all.

without renal colic. Approximately two-thirds will have associated abdominal tenderness. Most will have microscopic hematuria. Stones occur equally frequently on the left and right sides, despite the typically right sided ureteropelvic dilatation and stasis (Lattanzi et al 1975).

Few significant adverse effects on gestation or the fetus occur secondary to stones in pregnancy. In a study of 148 pregnancies, Coe et al (1978) found no significant difference in the number of infections, the rate of premature delivery, spontaneous abortions, maternal prenatal hypertension or the rate of cesarean section between patients suffering from or free of stones. Likewise, no difference in these complications was demonstrated between patients developing stone disease before or after the onset of pregnancy, except a slight increase in the incidence of urinary infections in those patients developing stone disease before pregnancy.

However, Hendricks et al (1991) reported severe fetal and neonatal consequences as a result of urolithiasis during pregnancy, resulting in a 40% preterm birth. In our cases, although one woman had preterm vaginal delivery, the maternal and perinatal outcome were favourable.

Management of urolithiasis, especially in pregnancy, is initially conservative because 50% of stones are passed out spontaneously in the pregnant patient as compared to 80% in the general population (Lattanzi et al, 1975). Rodriguez and

Klieh (1988) suggested that renal calculi are more likely to become symptomatic during pregnancy, since they are potentially more easily dislodged because of the physiological hydronephrosis associated with pregnancy. Thus one half of pregnant patients with stones will require surgical intervention (although a small series of 20 patients by Coe et al, 1978, reported no requirement for surgery). Therefore, after consideration of the size and location of the calculus, degree of obstruction, presence of absence of infection and the general medical condition of the patient, management of the calculus during pregnancy should be individualized and expectant therapy is all that is required for most patients, regardless of the stage of pregnancy.

Our study leads us to conclude that renal calculus has no prejudicial effect on pregnancy except possibly for a slight increase in frequency of preterm delivery conservative treatment generally resulted in a favourable maternal and perinatal outcome.

REFERENCES

1. Coe F, Parks J and Lindheimer M : *N. Eng. J. Med.* : 298:324;1978.
2. Drago J, Rohner T and Chez R : *Urology*: 20;578;1982.
3. Folger GK : *Obstet. & Gynec.* : 5;513;1955.
4. Hendrick SK, Ross SO, Krieger JN : *Surg. Gynec. Obstet.* : 172;49;1991.
5. Lattanzi D, Cook W : *Obstet. & Gynec.* : 546;462;1975.
6. Rodriguez PN and Klien AS : *Surg Gynec. Obstet.* : 166;103;1988.