A Link Between Gestational Hypertriglyceridaemia & Recurrent Urolithiasis

Dr Abigail Anderson

Townsville University Hospital, QLD, Australia

BACKGROUND

Urolithiasis is the most common cause of non-obstetric abdominal pain requiring hospital admission in pregnant women. [1]
The reported incidence of urolithiasis in pregnancy varies dramatically from 1 in 125 to 1 in 4,600 [2]. Approximately 90% of pregnant patients with renal stones become symptomatic during the second or third trimester, as spontaneous stone passage becomes more difficult with a growing foetus and changing anatomy. [3]

Urolithiasis in pregnancy remains a diagnostic challenge; as the signs and symptoms can be consistent with normal, healthy pregnancy experiences, or masquerade as other diagnoses like placental abruption, labour, appendicitis or diverticulitis. [4]
Treatment of stones in pregnancy can be difficult, sometimes requiring invasive measures such as stent, ureteroscopy, percutaenous nephrostomy; or even delivery of the foetus, if conservative measures (bed rest, hydration, analgesia) are unsuccessful or the patient deteriorates.
68-84% of stones pass spontaneously with conservative management; however, if a calculas does not pass, there is a risk of ureteral obstruction, infection leading to urosepsis, perinephric abscess and preterm labour. [4, 5]

Evidence demonstrates that hypertriglyceridemia is associated independently with stone recurrence. Specifically, stone analysis reveals that uric acid stones are more commonly found in patients with hypertriglyceridemia and low-HDL cholesterolemia [6].

CASE REPORT

A Caucasian female in her late thirties, G5P3M1, with comorbidities including obesity (BMI 41), PCOS, smoking, and most pertinently recurrent Gestational Hypertriglyceridaemia requiring Apheresis; presented to a small, rural hospital in QLD, with fevers and flank pain, at k29+2.
Her most recent postpartum had been complicated by an obstructing renal stone (Calcium Phosphate 55% and Ammonium Urate 44%), requiring lithotripsy and stent (removed 7 months previously).
Urine MCS confirmed a urinary tract infection, and she was transferred to a larger hospital for imaging and management. Ultrasound demonstrated hydronephrosis, without obvious stone, and she was commenced on intravenous ceftriaxone 2g daily.
Her clinical status deteriorated, continuing to spike fevers, and remaining hypotensive and tachycardic despite antibiotic and intravenous fluid therapy; and was thus transferred to our tertiary hospital with presumed urosepsis.
Despite input from a multidisciplinary team (obstetrics, obstetric medicine, urology, and infectious disease), she required admission to the Intensive Care Unit for intubation and ventilation.
Due to the difficulty in surgical urological management of renal stones during pregnancy, and potential complications to the foetus; the decision was made to deliver via emergency caesarean section at k29+5. This allowed urological intervention in the form of a rigid cystoscopy confirming a 6.5mm right proximal obstructing ureteric calculi (Calcium Oxalate, Uric Acid), and ureteric stent insertion 12 hours post. She made a complete recovery, with removal of the stent at 3 months postpartum. Her baby spent 41 days in NICU and a further 26 in the special care nursery.

CONCLUSION

Urolithiasis is a common condition in pregnant women, which often poses a diagnostic and management dilemma. This case demonstrates the possible significant associated morbidity for mothers; including prolonged hospital stay, antibiotic and intravenous fluid therapy, intensive care admission, intubation and ventilation and ultimately premature, emergency delivery of their newborn and then scenting and lithotripsy. It highlights the additional impact on the foetus, including tachycardia and foetal distress, and the sequale of preterm iatrogenic delivery. It is therefore important that renal colic, obstructed urinary stone, urinary tract infection and urosepsis be in the differential list for a pregnant person presenting with abdominal pain or fever. It is especially pertinent in women with a history or current problem with hypertriglyceridaemia.

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