

Emergent acute kidney injury during labour: a case report

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Introduction

Acute kidney injury (AKI) is an uncommon complication of pregnancy, particularly so during labour. We describe an unusual presentation of emergent AKI in a young female with no underlying renal disease. Timely diagnosis of cause and appropriate management prevented irreversible obstetric morbidity.

Case report

A 20-year-old primigravida, BMI 51 (weight 140kg on admission) was admitted to our maternity unit at 39weeks +5 days gestation following spontaneous rupture of membranes (SROM).

History included diet controlled gestational diabetes, large for gestational age foetus and a number of urinary tract infections in pregnancy. Aspirin 75mg was taken antenatally.

On admission, maternal observations were within normal range. CTG confirmed foetal wellbeing. Labour progressed slowly. At 24hrs post-SROM, the obstetric team reviewed and planned augmentation of labour with oxytocin regime. However, there was delay in initiating due to a busy labour ward. Routine biochemistry was measured as per protocol when starting oxytocin in labour. Renal indices were all within normal range at this time. An epidural was sited 4hours later and oxytocin infusion commenced. It was noted at this time that the patient was anuric and had been for several hours, despite a positive fluid balance. Biochemistry was repeated: creatinine had risen from 54 to 124, urea from 3.1 to 5.7 in 6 hours.

The patient was assessed regarding fluid status. There were no signs of infection or pre-eclampsia. She was given a fluid bolus. Urinary catheter was flushed to ensure patency. A bladder scan revealed an empty bladder. There were no concerns regarding foetal well being.

After 4 hrs and further fluid boluses (2L positive fluid balance), repeat U+E showed worsening AKI (creatinine 184, urea 6.7), lactate was 1.5. Serum osmolality was 267. Vaginal examination revealed 8cm cervical dilatation, foetus in occipto-posterior position, with caput and moulding. It was suggested foetal size and malposition may be causing bilateral ureteric obstruction resulting in anuria and AKI.

There was initial reluctance by obstetric team to consider emergency caesarean section as CTG was normal, labour was progressing and potential surgical difficulty. The renal physicians attended and performed a bedside ultrasound scan which showed bilateral prominent renal calyces. Creatinine rose further to 205, patient remained anuric. They agreed bilateral ureteric obstruction was the most likely cause. Further examination showed no further progress of labour and the decision for caesarean section was made, with full explanation given to patient.

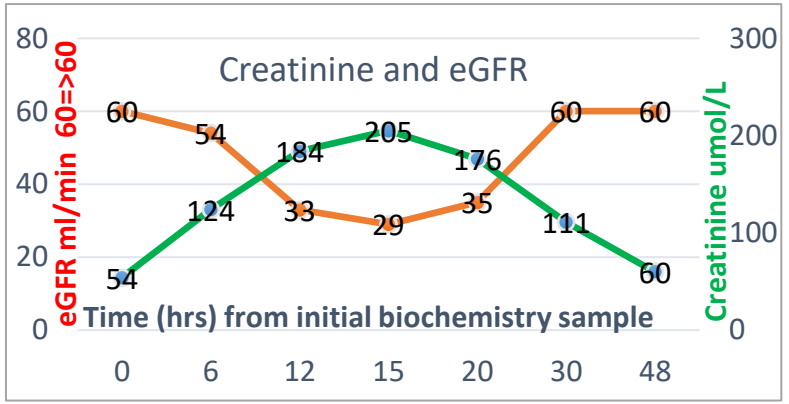
Outcome

Uneventful caesarean section under spinal anaesthesia followed.

No obvious renal tract abnormality was noted at operation.

After delivery of baby, urine appeared in urometer with 200mls by end of the operation. Baby was 3.79kg

The patient continued normal diuresis post-op. Renal indices returned to baseline within 48hrs.



Discussion

Acute kidney injury is an uncommon complication of pregnancy, a six year study found an overall incidence of 0.4%.[1] It is even rarer for AKI to develop for the first time during labour. However, there is still the potential for significant morbidity and prompt diagnosis and timely management is paramount. When investigating the aetiology of AKI in obstetric patients, hydronephrosis is common, evident on 80% of ultrasound images.[2] It may be hard to distinguish between being physiological or pathological. However, if combined with acute elevation of renal indices and anuria then obstructive uropathy, although rare, must be considered and excluded to prevent irreversible damage.

Obstructive uropathy may be due to gravid uterus, polyhydramnios or retroverted uterus. Management depends on time of presentation. Amniotomy, nephrostomy insertion or double J stenting are options that have been previously described if AKI occurs during pregnancy.[1] However, if AKI presents during labour the urgency of the situation renders these procedures unsuitable. The focus then should be on timely delivery of baby, with emergency caesarean section being required if vaginal delivery is not imminent.[3]

References

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