

RECURRENT PERI-OP HAEMATURIA IN REPEAT LOWER SEGMENT CAESAREAN SECTION: an unusual Presentation of Renal Cell Carcinoma in Pregnancy (A Case report with Literature Review)

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Background: Trauma to urinary bladder is the commonest cause of haematuria in repeat lower segment caesarean section. However, recurrent post op haematuria draws the attention to other aetiologies. **Case:** A 27 year old lady, G2P1L1, post caesarean pregnancy at term gestation, underwent elective caesarean section and tubectomy. She developed haematuria in perioperative period in episodic manner. Abdominal and pelvic ultrasound revealed a solid mass lesion in the upper pole of right kidney of size 5.8x4.6mm, which was confirmed by CECT of abdomen to be renal cell carcinoma. She was managed with radical nephrectomy in the urology centre without any adverse event. This rare presentation of the case and its successful management, prompted us to present this case with available literatures review.

Keywords: Haematuria; Lower; segment; caesarean; renal; pregnancy.

INTRODUCTION

Bladder injury is the commonest cause of haematuria detected during or following lower segment caesarean section (LSCS). Every obstetrician is careful about it and checks the colour of urine following the surgery if no doubt on integrity of bladder or before closing the abdomen if any doubt exist. Dye test is a better option in doubtful cases to confirm injury. As per RCOG data, incidence of bladder injury in LSCS is 1 in 1000.¹ In repeat LSCS, chance of such injury increases to 3 folds i.e. 0.6% vs 0.19%.² Though it is the most likely cause, other causes of haematuria like tumours, tuberculosis, obstetric complications, calculus, infection etc. should also be considered. Even blunt trauma by retractor during LSCS may

cause blood stained urine. Here we present a rare case of recurrent haematuria observed during the peri operative period of repeat LSCS, the ethiology of which was found to be renal cell carcinoma (RCC).

CASE REPORT

A 27 year old lady, G2P1, post LSCS pregnancy at 38 weeks 4 days of period of gestation, a known case of bronchial asthma reported to the antenatal clinic on 08.12.14 for safe confinement. At the time of presentation, she had mild cough with minimal expectoration. There was no history of fever or breathing difficulty. Her foetal movements were normal. There was no history of pain abdomen. She had normal bowel and bladder habits. She had conceived spontaneously 3 years after previous delivery by elective LSCS for transverse lie. Her Last menstrual period (LMP) and expected date of delivery (EDD) was on 12.03.14 and 19.12.14 respectively. She had a regular menstrual cycle (2-3/30 d) prior to her LMP. She was getting regular

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antenatal care in another hospital, taking iron, folic acid and calcium supplementation regularly. She was well immunised against tetanus. Her previous routine antenatal ultrasonology scan (USG) on 04.07.14 and 25.09.14 showed all the obstetrics findings within normal limits and there was no mention of any other abnormality. She was not on regular treatment for bronchial asthma and did not have history of any attack during the preceding year. She did not have any relevant family history including tuberculosis or malignancies. General and systemic examinations revealed no abnormalities. Per abdominal examination revealed healthy suprapubic transverse scar. Uterus was term size; SFH 32 cm. with flank full; longitudinal lie; cephalic presentation; LOA position and 4/5 of head was palpable. Estimated foetal weight was 3.5 kg. Foetal heart rate was 142 beats per minute. Haemogram revealed; Hb of 11.4 g%, total RBC count of 3.68 million/mm³. Biochemical parameters were normal with blood urea of 26 mg%, serum creatinine of 0.6 mg%, blood sugar (R) of 62 mg%. Her blood group was A positive. She was found to be HBsAg and HIV negative. With the diagnosis of G2P1L1 Post LSCS pregnancy at term she was planned for elective LSCS and bilateral tubal ligation. LSCS was done on 09.12.14 through the previous scar and a live male baby was delivered. Following closure of the uterus, though the urine in urobag was clear, it was found to be blood stained following closure of abdomen. Foley's catheter was in-situ and urine was found to be clear after 2 hours of surgery. She developed high fever and breathlessness on first post operative day, for which she was managed by pulmonologist with antibiotics, bronchodilators and nebulisation. Tests for enteric fever, malaria and dengue were negative. In view of the history of post op haematuria in absence of any obvious trauma, Foley's catheter was kept for 72 h. On day fourth, she again had haematuria which got cleared after intravenous fluid and furosemide. Foley's catheter was removed and she was investigated for any other causes of haematuria. Complete blood count and ESR were within normal range. Mantoux test, sputum for acid fast bacilli (AFB), X-ray chest, 24 h urine for AFB were negative for tuberculosis. Complete urine examination was normal in the absence of haematuria and culture was sterile. Urine for malignant cells was negative. Abdominal USG revealed a mixed echogenic solid mass lesion of 5.8x4.6cm size in upper pole of right kidney, suggestive of neoplasia (Figure 1). CECT of the abdomen revealed moderately heterogeneously enhanced mixed density mass lesion of size 3.9x3.5 cm at upper pole of right kidney with blunting of adjacent calyces, suggesting renal cell carcinoma (Figure 2). Post operatively, she recovered well except mild intermittent haematuria. After post operative recovery, she was referred to the urology

centre with a diagnosis of renal cell carcinoma for further management, where she underwent right radical nephrectomy. Histopathological assays of the radical nephrectomy specimen confirmed the tumor of size 4.5x3.5x3 cm with the diagnosis of renal cell carcinoma (TNM stage-I, pT1b N0 Mo). On follow up at 12 weeks, both the mother and the baby were found to be asymptomatic.



Figure 1
USG Right kidney showing neoplasm



Figure 2
CECT showing RCC in upper pole of right kidney

DISCUSSION

RCC is a disease of advanced age group and majority of cases are diagnosed beyond 65 years of age.³ It usually occurs in the fifth to seventh decade of life and is more frequent in men than in women. Only a small number of cases occur in young adults. RCC accounts for about 3% of all adult malignancies. Though it is a rare entity in

pregnancy, it is the commonest of all the renal tumor occurring in pregnancy; the incidence being in 1 in 1000 cases.⁴ Literature search up to 2013 revealed that only 102 cases of renal malignancies have been reported so far, out of which 86 cases were renal adenocarcinoma.⁵ Smoking, obesity and hypertension are high risk factors for this condition.⁶ NSAID is another high risk factor.⁷ Immediate relatives of people with RCC have 2-4 fold increased risk of developing the disease. However in the present case no such high risk factor was noted. It was a sporadic case and mutation in short arm of chromosome 3 might be considered to be the aetiology.³ The tumor arises from the epithelium of proximal convoluted tube and considered to be an adenocarcinoma.

Women with RCC may present in any trimester of pregnancy. 26% of these cases may present with a classical presentation of RCC in form of loin pain, palpable mass and haematuria. The most common mode of presentation of the disease is a palpable mass (88%) and pain (50%).⁸ Rarely, the patient may present with hypertension, haemolytic anaemia and hypercalcaemia.⁹ Other features of malignancy like abdominal bloating, loss of appetite may be there. In our patient being in term pregnancy all such presentations might have been considered to be due to her pregnant state.

Haematuria denotes the tumour invasion of the collecting system. It occurs in 50% of the cases. However, haematuria in pregnant women may be due to other causes like urinary tract infection, urolithiasis and hydronephrosis.¹⁰ In our case, the patient did not have any history of haematuria. Probably, she had never checked the colour of her urine. Her haematuria was only revealed after catheterization during surgery. Haematuria was not detected by complete urine examination as it was episodic in nature.

The diagnosis of RCC in pregnancy rests on USG and magnetic resonance imaging (MRI) of the abdomen besides the clinical presentations. USG is the safest method for diagnosis of the renal tumours in pregnancy with the equal sensitivity of 85% as compared to Intravenous pyelography (IVP) and CT.¹¹ MRI is a suitable option due to its least radiation exposure and no harm to the fetus. CECT in pregnancy is usually not recommended due to radiation hazards to the fetus, though this is more sensitive to detect pulmonary metastasis. In our case, antenatal USG could have detected the mass. However, as she was asymptomatic, full abdominal USG was not done during routine antenatal check up.

Surgery is the mainstay of treatment in RCC. Radical nephrectomy (RN) and nephron sparing surgery (NSS) are the procedures of choice. The outcome of the treatment depends on the stage of the disease. However, due to its rare presentation

and difficult situation in pregnancy, it is far more challenging to manage a case of RCC in pregnancy. The timing of surgery is important depending upon the trimester in which the patient has reported. It seems from the literature review that the maternal and fetal prognosis is good and the results are comparable with non pregnant women with RCC.⁴ Therefore few factors are taken into consideration while deciding the timing of surgery. First of all, it is known that the mean cell doubling time for an RCC is longer than 72 weeks.¹² Hence, it is safely recommended that if the tumor is detected in the first trimester, surgery in form of RN should be carried out without delay even there is a risk of abortion.¹³ In the second trimester, surgery can be done safely after due consideration of maternal and fetal risks.¹⁴⁻¹⁷ In the late second trimester surgery should be done after 28 weeks, as the fetal survival is over 90% in this period.¹⁸ In the third trimester, RN is recommended after delivery. If the tumor is diagnosed nearer to the term, then surgery can be carried out until after the delivery.¹⁹

Literature search revealed there is an array of combinations of treatment protocols followed by various authors. Commonly done procedure followed was found to be open or laparoscopic RN followed by spontaneous delivery.^{9,10,16,20-22} RN with or without termination of pregnancy has been advocated by a number of workers.^{18,23,24} LSCS followed by RN and RN with LSCS in same sitting have also been seen in literature being practised.^{25,26} Simultaneous NSS with LSCS was reported for the first time by Ambrosi Pertia, Laurent Managadze and Archil Chkhotua in 2012.⁸ Laparoscopic transperitoneal nephrectomy was performed by O'Connor, J., et al. in 2004 and Lee, D., & Abraham, N. in 2008 separately in two different patients at 19 weeks of gestation. Pregnancy was continued in both the cases and both the patients delivered vaginally at 39 weeks of gestation.^{21,22} In case of RCC with metastasis, the pregnancy should be terminated.²⁷ However, literature search did not reveal such cases so far. However, a fast growing RCC was reported for the first time by Mathieu Bettez et.al. in 2011 that a 28 years old primigravida at 21 weeks of gestation, who underwent LSCS at 35+6 weeks followed by thoraco-abdominal CT, which revealed a fast growing RCC (3 fold increase in size over 14 weeks) with multiple pulmonary metastasis. The patient underwent laparoscopic RN of right kidney after 4 days of LSCS. However she died after 12 months due to metastasis.²⁸

In our case, the patient was posted for repeat LSCS and during perioperative period only her haematuria was detected, for which she was investigated to establish its cause. Thus, she was diagnosed to have RCC. If bladder injury is excluded during repeat LSCS, or even first time LSCS, it is recommended to rule out other causes

of haematuria. Particularly, if the patient is having recurrent or episodic haematuria as in our case, RCC should be kept in mind and relevant investigations should be carried out to rule out RCC. Our patient was not symptomatic for RCC during her antenatal period; otherwise she would have been investigated earlier. She was managed successfully with RN and both mother and the baby were doing well after 3 months of follow up. Probably, ours is the first reported case of RCC in pregnancy detected in perioperative period during repeat LSCS, as no such case has been reported in literature so far.

CONCLUSION

RCC is a rare entity in pregnancy. The management should base on certain principles. All the time, the wellbeing of the mother should be given priority while taking a decision for its management during pregnancy. The management requires a multidisciplinary approach. RN or even NSS is the treatment of choice depending on the stage of the tumor. Timing of the surgery should be considered for the survival of the fetus as well as a better outcome of the patient.

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