A rare case of aggressive squamous cell carcinoma of the bladder in pregnancy

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Abstract

We report a rare case of an aggressive squamous cell carcinoma of the bladder in a young primigravid woman with recurrent urinary tract infections and microscopic haematuria. An emergency caesarean section was performed at 37 weeks gestation for suspected placental abruption; however, she was found to have frank haematuria. Postnatally, an advanced bladder tumour was diagnosed. She required renal dialysis, a radical cystectomy and radiotherapy but sadly died seven months after diagnosis. This case illustrates the importance of thorough investigation of haematuria in pregnancy. Cystoscopy and even tumour resection can be safely performed in pregnancy. Although squamous cell carcinomas account for only 2% of bladder tumours in developed countries, they tend to be large and deeply invasive, requiring radical surgery and chemotherapy or radiotherapy. Management should be multidisciplinary and treatment individualized due to the significant clinical and emotional challenges which arise when a woman develops a malignancy in pregnancy or the puerperium.

Keywords

cancer, maternal mortality

Case history

A 27-year-old primigravida had a three-year history of recurrent urinary tract infections (UTIs). She had a normal renal ultrasound followed by cystoscopy and urethral dilation two years before her pregnancy after which she was discharged from urology. She was referred again a few months prior to conception with the same symptoms. An abdominal computed tomography (CT) scan was normal apart from an area of cortical scarring in the right kidney. She did not smoke or drink or take any regular medication.

During pregnancy she experienced persistent microscopic haematuria and recurrent UTIs, despite low-dose prophylactic antibiotics throughout. At 37 weeks gestation she was admitted with severe lower abdominal pain and had a suspicious cardiotocograph (CTG). A healthy baby was delivered by emergency caesarean section performed for a suspected placental abruption; however, frank haematuria was noted at catheter insertion. Postoperatively the haematuria cleared but her urine contained copious amounts of debris causing recurrent catheter blockages. Urine cytology specimens showed inflammatory cells only.

Removal of the catheter resulted in urinary retention. Pelvic ultrasound scan (see Figure 1) showed a thickened, irregular, vascular anterior bladder wall. A urology opinion was sought and an outpatient cystoscopy arranged. It was thought that the ultrasound appearances could be due to a bladder haematoma.

Six weeks postpartum, shortly before the cystoscopy was due to be performed, she was admitted with sepsis, renal impairment and hypercalcaemia. A pelvic CT scan (Figure 2) was performed to try to locate the septic focus but in fact revealed a grossly distended bladder containing a 12 cm × 8 cm calcified lesion which again was thought to be consistent with a longstanding calcified haematoma.

An urgent cystoscopy was performed which proved this to be an extensive bladder tumour of the anterior and lateral walls. She required renal dialysis prior to undergoing a radical cystectomy for stage 4 carcinoma of the bladder. Histology revealed a T4 N2 M0 aggressive squamous cell carcinoma. Postoperatively, she suffered several wound infections but otherwise recovered well.

Four months postpartum, she was referred to the oncologists for consideration of adjuvant chemotherapy or radiotherapy. However, she was suffering from severe left hip pain restricting her mobility and requiring gabapentin, OxyContin and OxyNorm. A pelvic MRI scan revealed a soft tissue mass measuring 11 cm × 8 cm on the left side of the pelvis encasing and destroying the left pubic bone, consistent with residual or recurrent tumour. After a short stay in the local

hospice she received radiotherapy for the tumour recurrence. She and her family were made aware that this was an aggressive and incurable tumour. She was referred to the Macmillan team for palliative care but sadly died seven months after diagnosis.

Discussion

In the UK, more than 90% of bladder malignancies are transitional cell carcinomas. Squamous cell carcinoma and adenocarcinoma account for just 2% and 1%, respectively. In developing countries, however, squamous cell carcinoma accounts for up to 75% in regions with endemic schistosomiasis, a parasitic infection also known as bilharzia.

Although bladder cancer is generally more common in men, squamous cell carcinoma is twice as common in women and may develop on a background of chronic inflammation. It is extremely rare in pregnancy. Of the 28 reported cases of bladder cancer in pregnancy only one was a squamous cell carcinoma, making this the second case to date.^{1,2,3} The majority of women presented in the second or third trimester with painless haematuria. Some were initially diagnosed incorrectly with obstetric haemorrhage. Less than half of the reported cases were diagnosed by ultrasound features.¹ Cystoscopy is the investigation of choice as it facilitates both diagnosis and treatment. Bladder biopsies and transurethral tumour resection may be safely performed in pregnancy.^{1,2,3}

Approximately 70% of transitional cell carcinomas will be superficial at diagnosis. The prognosis is very good for those early-stage tumours amenable to definitive transurethral resection. In contrast, advanced tumours carry a poor prognosis and often require radical surgery as demonstrated in our case. Squamous cell carcinomas are typically large and deeply invasive.¹ Unfortunately, our patient was diagnosed with an advanced tumour at presentation. She had a very large tumour mass (12 cm) compared with the other reported cases, the majority of which were less than 5 cm. However, as she first presented

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Figure 1. Pelvic ultrasound scan immediately after delivery showing a thickened irregular mass in the anterior bladder wall.

Figure 2. Computed tomography scan six weeks postpartum showing a large bladder mass.

at 37 weeks and was diagnosed after delivery her treatment was not complicated by fetal factors.

Pregnancy does not influence outcome in bladder cancer but as with most malignancies treatment depends on gestation and staging. General principles of management are outlined below. Chemotherapy

agents may be teratogenic and should be avoided in the first trimester but can be used in the late second and third trimesters. The use of radiotherapy depends on tumour type and site and should be considered on an individual case basis. It may be necessary to consider termination of pregnancy in the first or early second trimester if life-saving treatment is required for the mother. Elective delivery after corticosteroids for fetal lung maturity may also be considered in the third trimester to facilitate optimum maternal treatment.

Conclusion

This case demonstrates a rare complication of recurrent UTIs in a young woman with no other recognized risk factors for bladder cancer. It highlights the importance of the investigation of haematuria, which may initially be misdiagnosed as obstetric haemorrhage. We must keep an open mind with regard to differential diagnoses, which include UTI, renal calculi, trauma, glomerulonephritis, renal cell and bladder carcinoma. In atypical cases we should not disregard even the most improbable diagnosis until excluded by thorough investigation. The development of any type of malignancy in pregnancy presents significant emotional and clinical challenges. Pregnant women should be managed by an experienced multidisciplinary team with an individualized treatment plan and adequate support.

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Ethics approval was consistent with local trust policy.

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EC.

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