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Case Report

A rare case of advanced cervical cancer in pregnancy: clinical presentation, diagnostic challenges, and multidisciplinary management

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ABSTRACT

Advanced cervical cancer diagnosed during pregnancy is an exceptionally rare occurrence. We present a case of stage IIIC cervical squamous cell carcinoma identified during pregnancy. A woman in her early thirties in her fourth pregnancy attended maternity triage with unprovoked antepartum haemorrhage at 23+2 weeks of gestation with an irregular mass on her cervix. Colposcopic biopsy confirmed a moderately to poorly differentiated invasive squamous cell carcinoma. MRI pelvis showed parametrial invasion and pelvic lymphadenopathy, consistent with FIGO stage IIIC1 disease. Following multidisciplinary team discussion, the management plan included early delivery with steroid cover, followed by definitive chemoradiotherapy. At 32 weeks' gestation, a caesarean section with sterilisation was performed due to severe fetal growth restriction (estimated fetal weight <3rd centile). Postnatally, the patient commenced neoadjuvant chemotherapy with paclitaxel and carboplatin, followed by definitive chemoradiotherapy consisting of external beam radiation and intracavitary brachytherapy. Post-treatment MRI demonstrated an excellent therapeutic response. Management of cervical cancer in pregnancy depends on gestational age and disease stage. This case illustrates the multidisciplinary management of advanced cervical cancer in pregnancy, balancing maternal treatment needs with fetal well-being to achieve optimal outcomes for both. This case also underscores the importance of regular cervical screening, patient education regarding its value, and careful speculum examination by experienced clinicians in pregnant women presenting with vaginal bleeding, as pregnancy can obscure critical symptoms.

Keywords: Cervical cancer, High risk Pregnancy, Chemoradiation, Cervical screening, Multidisciplinary approach

INTRODUCTION

Cervical cancer is one of the most frequent diagnosed cancers during pregnancy or one year postpartum and it occurs in approximately 1.6–11.1 cases per 100,000 pregnancies, with 3% of cervical cancers being diagnosed during pregnancy.[1] As symptoms of cervical cancer often overlap with normal pregnancy, diagnosis often is challenging, equally challenging is its management in pregnancy because of dual stake of treating the cancer without compromising its chances for cure, while preserving the pregnancy and the health of the fetus and child. Because of extensive national screening programme, most cervical cancers diagnosed in pregnancy are early-stage disease with very few case reports of advanced disease in pregnancy. We present a rare case of stage IIIC cancer cervix diagnosed in pregnancy and the subsequent management.

CASE REPORT

A woman in her early 30s, British by ethnicity, of booking BMI of 35 was referred to consultant led unit after her booking appointment. She was para 3, 2 vaginal deliveries in 2015 and 2020, followed by a caesarean section for fetal growth restriction in 2022. She was a known smoker,

smoking 10 cigarettes per day. No other medical or surgical history except asthma on inhaler. Apart from normal booking bloods, she also had normal nuchal translucency (NT) scan and anatomy scan.

At 23+2 weeks, she presented to maternity triage with unprovoked bleeding PV. On speculum, an irregular, vascularized fibroid like growth was visualized on lower lip of cervix. Her last cervical smear at the age of 25 years was normal with no further smears. Subsequently she was seen in consultant colposcopy clinic at 25+4 weeks, where a cervix soft with 3×2 cm hard polypoid dense acetowhite fibroid like growth coming out of the cervix, present on the posterior lip; Biopsy planned and MRI pelvis was suggested for better characterization of the growth along with referral to Gynae oncology clinic. She was started on prophylactic low molecular weight heparin (LMWH) from 28 weeks as per the VTE (Venous thromboembolism) risk scoring.

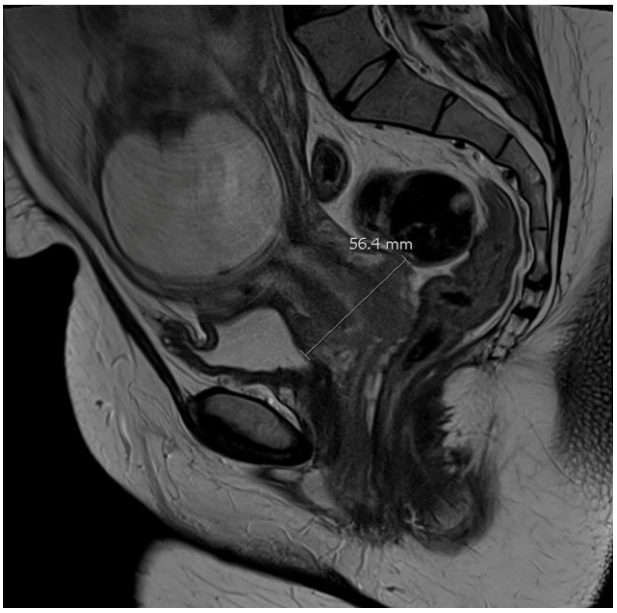

Figure 1: Cervical mass (Sagittal view, MRI).

MRI scan of pelvis revealed irregular intermediate T2 signal soft tissue mass replacing predominantly posterior cervix measuring 5.5 cm in transverse dimension extending into lower endocervical canal and upper vagina with likely parametrial invasion without any hydroureter. It also revealed 18 mm left external iliac/ obturator lymph node in keeping with a pathological node, making the staging at least 3C1. CT whole abdomen, CT chest was suggested for staging and was referred to Oncology MDT.

She was admitted for chest pain, shortness of breath and tachycardia, when a doppler ultrasound of lower legs did not show any deep vein thrombosis and chest X ray and CTPA were negative for any metastasis or pulmonary embolism. CT scan abdomen did not reveal any metastatic disease in abdomen except some inflammatory nodular changes. Examination under anesthesia (EUA) and cervical biopsy was performed with insertion of vaginal pack and overnight admission. EUA revealed friable cervical tumor replacing the posterior lips with clear vaginal fornices.

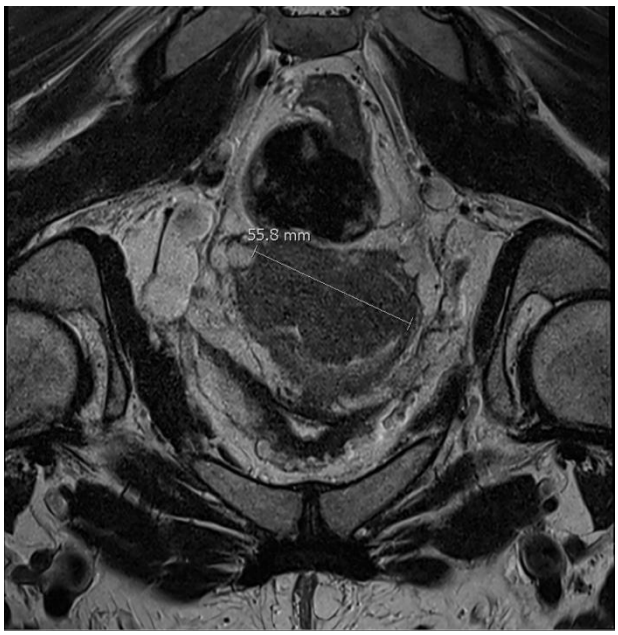

Figure 2: Cervical mass (coronal view, MRI).

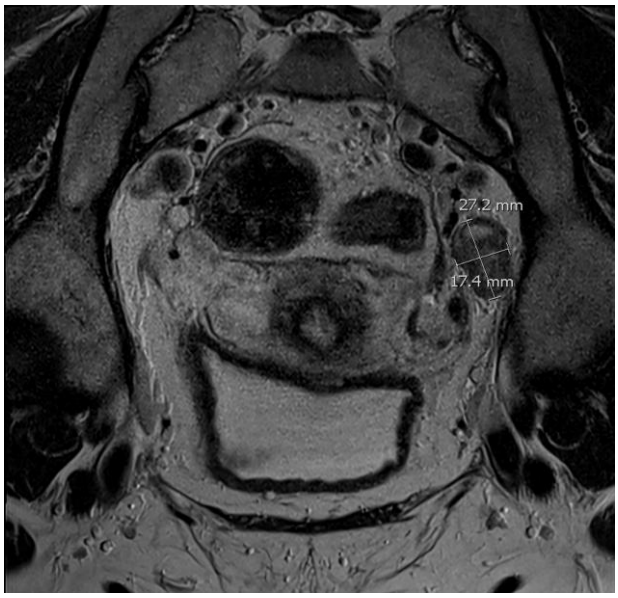

Figure 3: Left external iliac/ obturator lymph node (coronal view, MRI) mass.

On the following day in ward round, vaginal pack was removed and she was informed about the EUA finding, MRI result, potential diagnosis of cervical cancer and the implication on her health and her pregnancy. Earlier delivery was discussed, mode of delivery being a classical caesarean section. As she also wished for sterilization, options of salpingectomy, tubal ligation and filschie clip were discussed. She was also explained about the future chemotherapy treatment (decided by Oncology MDT) following delivery, along with prognosis of the condition.

Obstetrically, she was under GAP scan surveillance, as she was a smoker with previous FGR. Scan at 30+1 weeks showed baby was under 3rd centile with normal liquor volume and Dopplers. Cervical biopsy was reported as moderately to poorly differentiated invasive squamous cell carcinoma. Her case was discussed in Gynae oncology MDT, who planned for delivery at 32 weeks, followed by referral to medical oncology for neoadjuvant chemotherapy and subsequent review by the oncology team for chemotherapy/ brachytherapy treatment.

She had a lower segment caesarean section with application of bilateral filshie clips at 32 weeks after antenatal steroids. Caesarean section was uncomplicated with blood loss of 550 ml. Baby girl was born of birth weight 1910 gm with APGAR score 9 (1 minute) and 9 (5 minutes) with normal cord blood gases.

As planned, she was seen in oncology clinic, where the following plan was made: Neoadjuvant chemotherapy with Paclitaxel/ Carboplatin weekly for 6 weeks followed by Radical chemoradiotherapy to cervix and pelvis with weekly cisplatin chemotherapy (50.4 Gy in 28 fractions); This will be followed by intrauterine brachytherapy (21 Gy in 3 fractions).

Acute and chronic toxicities of radiotherapy to pelvis were discussed including bladder and bowel upset, lymphoedema, early menopause and scarring and fibrosis within the vagina.

Outcome and follow up

Placenta was sent for histopathology which revealed adequate fetoplacental weight ratio showing circummargination of the membranes and mild accelerated maturation with the basal plate showing increased number of giant trophoblast cells, possibly due to fetal hypoxic stress.

Currently patient has completed her intrauterine brachytherapy. She is under follow up with Gynae Oncology and Medical Oncology.

Recent MRI scan 3 months post brachytherapy showed excellent treatment response with the bulky cervical soft tissue no longer visible with reduction in size of the left obturator lymph node (9 mm from 27 mm).

DISCUSSION

Diagnosis and management of cervical cancer during pregnancy are extremely challenging and require a time sensitive multidisciplinary approach. Data obtained from large cancer networks indicate that pregnant patients are more likely to be diagnosed with early-stage cervical cancer, with only 26% of them diagnosed with stage II-IV cancer, compared to 52% in non-pregnant women.[1] There have been case reports on locally advanced and advanced (stage IIIB) cancer diagnosed during pregnancy with only one report presenting stage IVB, but no report about stage IIIC published so far as of our knowledge.

Although the symptoms of pregnant women with cervical cancer are similar with those of non-pregnant women, often pregnancy symptoms mask the symptoms leading to delay in diagnosis. In a multicentre retrospective study in China, cervical cancer in pregnancy is detected following bleeding in 85.7%, physical examination in 7.6% and abnormal cervical cancer screening in 6.7%.[2] In our case, the woman presented with bleeding per vagina in triage in second trimester, which led to the physical examination and then eventually to the diagnosis. This emphasizes the importance of examination and visualisation of cervix in pregnant women presenting with bleeding per vagina, with subsequent referral to colposcopy, if suspicious.

But the question remains, how did it get missed in a reproductive age woman despite stringent/ robust screening policy in place? Our woman did not have any cervical smear, did not appear for three appointments, then did not appear for her next two screening due to various reasons like repeated pregnancy, change of address and we missed the opportunity to diagnose at a premalignant stage, where she has definite risk factor (smoking). National data says that 67.5% of women in the registered population eligible for cervical screening aged 25 to 49 at the end of the period reported were screened adequately, also cervical screening engagement between Integrated Care Boards across England shows some achieving more than 75% coverage and others below 65%.[3,4]

This suggests there is still a significant number we are missing. In 2023, NHS England outlined its ambition to eliminate cervical cancer by 2040, aligning with the World Health Organization's (WHO) global initiative to achieve a below 4 per 100,000 cervical cancer incidence rate, which is only possible if we can bridge this gap, either by increasing access to screening, raising awareness, reducing inequalities and strengthening workforce capabilities.[4] Introducing HPV self-sampling is considered at present as an option by the UK National Screening Committee (UKNSC) for people who do not engage in the cervical screening programme in early 2026.[5]

Treatment of cervical cancer in pregnancy is complex, and involvement of multidisciplinary team would improve the quality of care.[6] Management is individualised and depends on stage of cervical cancer, type of histology, status of lymph nodes, gestational age, and woman's wishes concerning continuation versus termination of pregnancy, availability of neonatal care facilities and availability of resources for cancer treatment. Treatment protocol for early-stage cervical cancer, where radical surgery is still an option, completely differs from advanced carcinoma, where chemoradiation is the recommended treatment modality.

For a late-stage cancer like ours, the recommended protocol was starting neoadjuvant chemotherapy if the

gestation is above 14 weeks, when the fetal malformation rate with chemotherapy is comparable to the general population. This is because in advanced cases, the initiation of neoadjuvant platinum-based chemotherapy to prevent cancer progression while awaiting fetal maturity is recommended as there is no safety data for intentionally delayed treatment like in early-stage disease. On the other hand, timing of delivery is also of paramount importance and a three-week gap between the final dose of chemotherapy and the caesarean section is recommended to allow bone marrow of the mother and fetus to recover from the chemotherapy induced neutropenia.[7]

Of the very few case reports of advanced cancer cervix diagnosed in pregnancy, most used the antenatal neoadjuvant chemotherapy as the time interval between the diagnosis and delivery was longer than our case, only the case report of Takushi et al did not use it as the gestational age at diagnosis was 29 weeks, and the planned caesarean was at 30 weeks. Similarly in our case, we had two weeks' time between the diagnosis and the delivery, rendering antenatal neoadjuvant chemotherapy unsuitable for this scenario.

The gestational age at delivery for our case was 32 weeks, which was comparable to the study by Marnitz et al for stage IVB cancer, whereas in a few studies like Benhaim et al and Takushi et al, the delivery was at 28 and 30 weeks.[8,9] Our decision for delivery was an obstetric decision based on the fetal growth restriction, so planned at 32 weeks after steroid maturation. In the absence of routine obstetrical indications, delayed delivery with neoadjuvant chemotherapy, and postpartum chemoradiation is a reasonable option as that does not change maternal prognosis.

CONCLUSION

This case report highlights the complexities of managing advanced cervical cancer diagnosed during pregnancy involving multidisciplinary teams, involving obstetricians, gynaecological oncologists, neonatologists, radiologists, anaesthetists, and specialist nurses providing a tailored approach balancing maternal prognosis with fetal considerations, ensuring fetal well-being and planning a safe delivery. Throughout her treatment, she was actively involved in all decision-making through a shared decision-making approach, ensuring she remained at the centre of care.

Nevertheless, this also emphasizes the importance of routine cervical screening for early detection of this lethal but preventable disease. Regular attendance to cervical smear tests, would have helped to diagnosed as a pre-cancerous stage with a completely different outcome. This underscores the critical role of public health education in improving screening uptake, particularly among women of childbearing age.

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