Reminder of important clinical lesson

Undiagnosed rectal tumour – a rare cause of obstructed labour in the second stage

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Summary

Colorectal cancer presenting in pregnancy is extremely rare. Here the authors present the case of a 25-year-old woman who was diagnosed with second-stage obstructed labour secondary to a large rectal tumour. Decision for emergency caesarean section was made for labour dystocia.

Histology later confirmed villous adenocarcinoma of the rectum. The patient died from metastatic rectal cancer within 2 years of diagnosis.

BACKGROUND

Rectal tumours causing obstructed labour are extremely rare. In the UK there is well-established primary care system, and, therefore, it is unusual for such an extensive tumour to have been diagnosed for the first time in labour. In this case, there were warning signs for colorectal pathology that were unfortunately missed by the healthcare professionals involved in this patient's case. Although many symptoms such as constipation and anaemia are not rare in pregnancy, persistent symptoms should have instigated rectal examination and further investigation in the antenatal period. The history of rectal bleeding was only disclosed by the patient retrospectively, during post-partum history review.

Cases similar to this have also been described in the literature (see Discussion); however, more often, cases of late diagnosis are found in developing countries where medical care may not be readily accessible. Despite the establishment of a health service that encompasses a multidisciplinary approach to patient care in pregnancy, misdiagnosis still occurs. This emphasises the need for a thorough history and examination, and where index of suspicion is high, appropriate referral and investigation should be made.

The case we present here is unique in that the tumour presented with delay in the second stage of labour diagnosed after 90 min. This rare case has immense educational value relevant to general practitioners, midwives, primary healthcare providers, obstetricians as well as general and colorectal surgeons.

CASE PRESENTATION

A 25-year-old woman presented to delivery suite in labour at 37 weeks and 5 days of gestation. Past obstetric history included an assisted delivery following induction at term for proteinuric hypertension.

In the index pregnancy, she booked antenatally with the community midwife at 7 weeks of gestation. Haemoglobin (Hb) at booking was 15.6 g/dl. She gave a history of recurrent constipation for which she had been prescribed laxatives. There was no other past medical or surgical history. At 28 weeks gestation, she was found to be anaemic with a Hb of 8.7 g/dl. She did not give any history of rectal bleed-

ing during the whole period of her antenatal care. Ferrous sulphate was commenced and dietary advice given. She had repeat full blood count (FBC) at 33 weeks gestation and also on the day of delivery which showed an increase in Hb to 9.1 g/dl and 10.5 g/dl, respectively (see Investigations for full FBC indices). Routine dating scan was performed by a specialist midwife sonographer at 13 weeks and 2 days gestation. A fetal anomaly scan was performed at 20 weeks of gestation. No abnormality of the fetus or pelvic and genital structures were identified. She remained under midwifery-led care throughout the pregnancy until delivery.

On admission to delivery suite in spontaneous labour, vital signs were normal and on abdominal examination the fundal height correlated with dates. The fetus lay cephalic with two fifths of fetal head palpable per abdomen. Spontaneous rupture of membranes was noted with meconium-stained liquor. A cardiotocography (CTG) was commenced, and vaginal examination by the midwife found the cervix dilated at 9 cm with head 2 cm above the ischial spine. The rectum was felt to be full, and the history of constipation noted. The cervix was later confirmed at full dilatation with the head 1 cm above the ischial spine, with caput succedaneum. A cystic mass was palpated against the posterior vaginal wall and assumed to be impacted faeces. The registrar on call was informed and examined the patient following 1 h and 30 min of active pushing. On vaginal examination, the cervix was confirmed at full dilatation with head in left occipito-anterior (LOA) position at 2 cm below the ischial spine. A suspected growth was palpated in the posterior vaginal wall, and rectal examination confirmed this. Tissue of the rectal tumour which had sloughed away during the rectal examination was sent for urgent histology. Prior to this there had been no rectal bleeding during the labour.

The obstetric consultant on call re-examined the patient and confirmed a 4 × 6 cm central, firm pelvic mass anterior to the sacrum. There was no further cephalic descent with active pushing. Trial of assisted delivery was considered; however, in view of the large rectal tumour which remained below and directly obstructing descent of the presenting part, a decision was made for emergency caesarean section. The case was discussed with the surgical team prior to

Figure 1 MRI Scan of abdomen and pelvis showing a bulky distal rectal/anal canal tumour extending over at least 7 cm.

caesarean section. A plan was agreed to proceed with the caesarean section and for immediate surgical review post-operatively.

The caesarean was uncomplicated with an estimated blood loss of 600 ml. No abnormal maternal features were noted at the time of delivery. The baby was delivered in good health at a weight of 3700 g. The patient was seen by the surgical team immediately post-delivery. Patient's further care involved multidisciplinary teams (see Treatment).

INVESTIGATIONS

FBC at booking

HB = 15.6 g/dl WBC = $6.7 \times 10^9/l$ PLT = $284 \times 10^9/l$ RBC = $4.92 \times 10^{12}/l$ NEUT = $5.07 \times 10^9/l$ HCT = 0.434 LYMPH = $1.23 \times 10^9/l$ MCV = 88.3 fl MONO = $0.27 \times 10^9/l$ MCH = 31.8 pg EOS = $0.08 \times 10^9/l$ MCHC = 36.0 g/dl BASO = $0.03 \times 10^9/l$

FBC at 28 weeks gestation

HB = 8.7 g/dl WBC = $9.3 \times 10^9/l$ PLT = $317 \times 10^9/l$ RBC = $3.72 \times 10^{12}/l$ NEUT = $7.80 \times 10^9/l$ HCT = 0.273 LYMPH = $0.95 \times 10^9/l$ MCV = 73.3 fl MONO = $0.43 \times 10^9/l$ MCH = 23.3 pg EOS = $0.09 \times 10^9/l$ MCHC = 31.8 g/dl BASO = $0.02 \times 10^9/l$

FBC at 33 weeks gestation

HB = 9.1 g/dl WBC = $10.3 \times 10^9/l$ PLT = $267 \times 10^9/l$ RBC = $4.08 \times 10^{12}/l$ NEUT = $8.32 \times 10^9/l$ HCT = 0.295 LYMPH = 1.47

$10^9/l$ MCV = 72.5 fl MONO = $0.39 \times 10^9/l$ MCH = 22.3 pg EOS = $0.07 \times 10^9/l$

FBC during labour

HB = 10.5 g/dl WBC = $19.7 \times 10^9/l$ PLT = $435 \times 10^9/l$ RBC = $4.69 \times 10^{12}/l$ NEUT = $18.22 \times 10^9/l$ HCT = 0.334 LYMPH = $0.73 \times 10^9/l$ MCV = 71.3 fl MONO = $0.73 \times 10^9/l$ MCH = 22.5 pg EOS = $0.01 \times 10^9/l$ MCHC = 31.5 g/dl BASO = $0.02 \times 10^9/l$

Liver function tests and urea and electrolytes were all within normal range.

Histology specimen obtained during delivery demonstrated extensive average grade adenocarcinoma arising within the villous adenoma.

CT Scan of abdomen/pelvis and chest performed on Day 17 post-delivery as well as MRI performed on Day 43 post-delivery (figures 1 and 2) confirmed a 7 cm distal rectum/anal tumour extending up to mesorectal margin and significantly enlarged mesorectal nodes with multiple pulmonary metastases. This was staged as Duke's Stage D.

DIFFERENTIAL DIAGNOSIS

Causes for obstructed labour include malposition of the fetus, cephalopelvic disproportion, pelvic bone anatomy variation, pelvic bone disease, for example, rickets, spinal curvature and pelvic tumours and fibroids.

Figure 2 MRI image of the pelvis showing the rectal/anal canal tumour.

TREATMENT

The patient was seen by the surgical team immediately after delivery and was followed up in the surgical outpatient clinic on Day 6 post-delivery. The histology report and plan for further investigation and management were discussed with the patient during this visit. Examination under anaesthetic (EUA) and sigmoidoscopy were performed on Day 25 post-delivery.

A laparoscopic de-functioning loop colostomy was performed 5 weeks post-delivery, followed by chemoradiotherapy. The patient was transferred to a specialist unit for radical abdomino-perineal (AP) resection of rectal carcinoma, including posterior vaginal wall, with reconstructive surgery followed by oxaliplatin and modified de Gramont chemotherapy.

OUTCOME AND FOLLOW-UP

Follow-up CT imaging revealed disease progression involving new disease foci within the anterior abdominal wall. The patient presented with seizures about 22 months after her delivery where CT head demonstrated left-frontal intracerebral metastases with haemorrhage. Palliative radiotherapy was commenced.

The patient died a month later within 2 years of initial diagnosis.

DISCUSSION

Colorectal cancer has an incidence in pregnancy of approximately 0.002%.¹ Symptoms and signs include nausea, vomiting, abdominal pain, rectal bleeding and altered bowel movements, abdominal distension, palpable mass and anaemia. Diagnosis of colorectal pathology during pregnancy is often challenging as many of the above indicators can be attributed to the physiological and gastrointestinal changes of pregnancy. This often leads to delay in referral and investigation which allows opportunity for advancement of disease with a worsened prognosis.

Optimum evaluation for suspected colorectal cancer should include endoscopy and biopsy and abdominal radiology which are often delayed or avoided because of the potential effects on the unborn fetus.² Once the diagnostic challenges are overcome, the gestation of the pregnancy and potential viability of the fetus may limit the treatment of the pregnant woman. Management of colorectal cancer ultimately should comprise therapy to the mother and delivery of the fetus at earliest agreed opportunity.

Treatment of colorectal cancers should be individualised to each patient. Surgery is usually recommended with or without the use of adjuvant therapy. For those cancers diagnosed within the first half of the pregnancy, a full discussion of the options available to the woman should take place.

This may include recommendation to terminate the pregnancy in order to optimise surgical resection and in consideration of potential compromise to fetal development that is associated with adjuvant therapy. If diagnosis is made later in the pregnancy, treatment may be delayed until delivery of the infant at an agreed gestation, although the mother will be at risk of disease progression.

In this case, the antenatal symptoms of constipation and anaemia were not investigated further as they were attributed to common benign symptoms of pregnancy by the community midwife. The history of rectal bleeding was not disclosed by the patient antenatally and was only obtained retrospectively after delivery. As the anaemia had showed some response to haematinics, the patient therefore remained under midwife-led care throughout her pregnancy and was not referred for medical opinion.

During routine antenatal scans the rectal tumour was not identified. This could be a result of several factors, including (a) the tumour size at the time of ultrasound not being large enough to be seen, (b) during routine antenatal ultrasound the primary focus of the sonographer is the uterus and the fetus, (c) midwife sonographers may not be sufficiently experienced in colorectal pathology during routine antenatal ultrasound.

Colorectal tumours are one of the many rare causes for labour dystocia. These rarer causes that first presented in labour have been described in the literature. A large retroperitoneal tumour of unknown origin caused obstructed first stage of labour in a multiparous woman, and emergency caesarean was performed.³ Retroperitoneal sarcomas were diagnosed in late pregnancy in two women with large pelvic tumours that prevented engagement of the presenting part at term and elective caesarean was planned in both cases.⁴ Other rare maternal causes for obstructed labour include vesical calculus and pelvic kidney.^{5–8} In another case, tumour praevia presented in a term pregnancy and was later confirmed as papillary adenocarcinoma.⁹

A report of two cases of obstructed labour at full dilatation caused by presacral tumours have previously been described.¹⁰ In the first case, a retroperitoneal simple cyst was found to have caused second-stage delay and delivery was made using Barton's forceps. In the second case, a malignant haemangioendothelioma prevented the engagement of the fetal head at full dilatation and caesarean delivery was performed.

The mode of delivery in cases of known colorectal cancer with no evidence of obstructed labour remains controversial. A case of prolapsed rectal cancer through the anus during vaginal delivery has been described.¹¹ The decision

regarding mode and timing of delivery should be assessed on an individual basis by a multi-disciplinary team.

Learning points

- We aim to heighten clinical suspicion and recognition of colorectal pathology as a rare cause for obstructed labour.
- Clinicians need to be alert to the warning signs of colorectal cancer, and if signs and symptoms cannot be differentiated from pregnancy-attributed symptoms, the woman should be appropriately referred for further investigation. Early investigation of bowel symptoms can optimise labour management and both maternal and fetal outcome can be improved.
- The symptom of rectal bleeding should be actively sought during history taking in patients with other gastrointestinal symptoms.
- There is need for multidisciplinary approach to care of the pregnant woman with colorectal cancer and should involve experts within the fields of obstetrics, neonatology, surgery and oncology at the earliest opportunity.

Competing interests None.

Patient consent Obtained.

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