CASE REPORT

Intussusception in gestational choriocarcinoma (not histologically proven), resolving spontaneously with chemotherapy

Anisha Ramessur,¹ Mark Openshaw,¹ Naveed Sarwar²¹NHS, London, UK²Department of Oncology, Charing Cross Hospital, London, UK**Correspondence to**Dr Anisha Ramessur,
anisha.ramessur@googlemail.com

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SUMMARY

We present a rare case of advanced gestational choriocarcinoma with small bowel metastatic involvement and intussusception, which presented acutely as a lower gastrointestinal bleed with symptomatic anaemia and haemoglobin 3.8 g/dL in a young woman. A diagnosis of gestational choriocarcinoma was made without biopsy, using a combination of clinical history, isolated elevated human chorionic gonadotropin markers of 77 000 IU/mL and radiological findings. Surgical intervention was too high risk due to the presence of active bleeding and increased vascularity surrounding the intussusception. Owing to the highly responsive nature of gestational choriocarcinoma to chemotherapy, frontline chemotherapy alone was used to reduce the size of the metastatic small bowel deposits, with subsequent resolution of the bleeding and intussusception. This is the first time chemotherapy alone has been used to successfully resolve small bowel intussusception secondary to metastatic choriocarcinoma that has been documented according to PubMed searches.

BACKGROUND

Choriocarcinoma is a rare form of cancer belonging to the malignant end of the spectrum of gestational trophoblastic disease (pregnancy-related tumours). Metastatic choriocarcinoma is a very rare disease that affects 10–20 in 1 million pregnancies. This is a particularly interesting case due to the uncommon acute presentation vis-à-vis the development of intussusception and life-threatening gastrointestinal (GI) haemorrhage from small bowel metastases. Moreover, this case is exceptionally unique with regard to chemotherapy alone being used to resolve the intussusception and small bowel metastases. It highlights the importance of having a high index of suspicion of gestational choriocarcinoma in a young woman of childbearing age when radiological images reveal metastatic disease and the underlying primary is not yet known. It also demonstrates the importance of recognising that choriocarcinoma is highly responsive to chemotherapy, when balancing the risks and benefits of surgery compared to conservative management of small bowel metastases.

CASE PRESENTATION

A 32-year-old Fijian woman residing in the UK for the past 12 years presented as an acute emergency to her local hospital in Scotland, with significant

melaena and symptomatic anaemia (haemoglobin Hb 3.8 g/dL). She gave a history of gravida 5, para 5. Her most recent pregnancy resulted in a term delivery 5 months prior to this admission. On examination, she was hypotensive and tachycardic, and found to have generalised abdominal tenderness. She was aggressively resuscitated with intravenous fluids and transfused over 10 units of blood due to ongoing GI bleeding.

INVESTIGATIONS

Local investigations included an upper GI endoscopy (OGD), which showed gastritis but no obvious bleeding. Surprisingly, a CT scan of the patient's body revealed multiple lung and liver lesions highly suggestive of metastases. Owing to the presence of ongoing melaena, she underwent a CT angiogram, which showed a vascular 'blush' in the proximal jejunum but, unfortunately, no amenable vessel for embolisation due to the concerns about precipitating small bowel ischaemia. In the light of her recent pregnancy, a pregnancy-related tumour was suspected and she was found to have a significantly elevated human chorionic gonadotropin (HCG) tumour marker of 77 000 IU/mL and normal α fetoprotein. The local HCG assay was felt to be grossly undervalued secondary to haemodilutional factors following ongoing resuscitation with intravenous fluids.

Two days after initial presentation, the patient was swiftly transferred, via aeromedical transport, to the Gestational Trophoblastic Unit in Charing Cross Hospital (CXH), London.

The patient was brought directly to the intensive care unit (ITU) for haemodynamic support including further transfusion of blood products. She reported of intermittent severe abdominal pain, and a repeat CT of the abdomen revealed the presence of jejunal-jejunal intussusception and an area of hyperdensity within the intussusception, which likely represented a bleeding lesion (figures 1 and 2). There was no evidence of bowel obstruction. The uterus appeared bulky with a small area of heterogeneous density within the cavity. CT of the brain on the same day confirmed no cerebral metastatic involvement.

DIFFERENTIAL DIAGNOSIS

A provisional diagnosis of gestational choriocarcinoma was made based on the history, radiological findings and elevated tumour markers. The combination of metastatic disease and intussusception

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Figure 1 CT of the abdomen showing evidence of jejunal-jejunal intussusception.

raised the likelihood that the intussusception was due to metastatic disease affecting the jejunum.

TREATMENT

Under normal circumstances, small bowel intussusception involving a large bowel segment would require urgent surgical intervention. Such surgery was deemed to be technically difficult and too high risk in this case, due to the presence of active bleeding, hypoalbuminaemia (albumin 16 g/L) and the increased vascularity surrounding the intussusception. Since gestational choriocarcinoma is known to be highly responsive to chemotherapy, it was felt that chemotherapy alone might lead to resolution of the bleeding, reduction in size of the metastatic small bowel deposit and subsequent resolution of the intussusception. In view of this, the oncology team advised conservative management and the patient was started on low dose etoposide and cisplatin (EP) chemotherapy on the same day of admission to Charing Cross Hospital.

The patient continued to have active melaena despite being started on intravenous pantoprazole and regular tranexamic acid, and was transfused with a total of 15 units of red blood cells over the first 3 days. Subsequently, the volume of melaena gradually settled and her corresponding blood transfusion requirements fell to 1–2 units/day.

Further imaging on MRI of the pelvis 5 days after admission showed partial resolution of the jejunal intussusception, but an

Figure 2 CT of the abdomen showing evidence of jejunal-jejunal intussusception.

increase in size of the liver lesions, and no measurable disease within the retroverted uterus.

Six days after admission to CXH, the patient developed profuse melaena with haemodynamic compromise, necessitating the initiation of major haemorrhage protocol, and was transfused a further 10 units of blood. Repeat CT scanning showed resolution of the intussusception with further enlargement of the liver lesions. It was felt that the increase in size of these lesions was secondary to haemorrhage into the liver rather than metastatic disease progression. Repeat mesenteric angiography identified a diffuse vascular abnormality within the proximal jejunum, with active bleeding with multiple bleeding points, not amenable to embolisation (figure 3). Selective angiography of the small branches of the first jejunal artery was performed and led to spontaneous resolution of the active bleeding, without the need for embolisation. HCG was 128 000 IU/mL.

After repeat imaging, the interventional radiologists felt that there were no further interventional radiology options for the jejunal bleeding and so any further bleeding issues would require surgical intervention. Luckily, the patient experienced no further significant bleeding and, 8 days after admission, her HCG had dramatically reduced to 38 000 IU/mL. She continued with low dose EP chemotherapy before switching to etoposide, methotrexate and adriamycin D, alternating with cyclophosphamide and vincristine (EMA/CO) on a weekly basis.

OUTCOME AND FOLLOW-UP

The patient successfully made a full recovery with complete resolution of intussusception and small bowel metastases following completion of chemotherapy.

DISCUSSION

This is a very rare presentation of gestational choriocarcinoma, which is a form of gestational trophoblastic disease. Premalignant conditions in this grouping include partial and complete hydatidiform moles. Malignant conditions are known as gestational trophoblastic tumours and include gestational choriocarcinoma, invasive mole and the rare placental site trophoblastic tumour. These tumours are highly chemoresponsive and, as a result, cure rates are in excess of 98%.¹ The

Figure 3 Angiogram showing diffuse jejunal bleed.

success cure rate is attributable to the use of HCG as an accurate biomarker and by centralisation of care, both of which are clearly demonstrated by this case.¹

Choriocarcinoma arises from villous trophoblasts and consists of malignant hCG-producing epithelial tumour cells. Intraplental choriocarcinoma does occur and may be the source of disease after term pregnancies and in neonatal choriocarcinoma.¹

In this case, the history of metastatic disease and a highly raised HCG following a recent pregnancy is characteristic of malignant gestational choriocarcinoma. Other differentials would include an epithelial cancer that has differentiated to a HCG-secreting non-gestational choriocarcinoma or an ovarian germ cell tumour secreting HCG. Biopsy of a lesion is high risk, as the tumours are highly vascular, with potential for uncontrolled bleeding, and European Society for Medical Oncology (ESMO) guidelines clearly highlight that a biopsy is not essential before starting chemotherapy.² In this particular case, with a characteristic history of active bleeding, a biopsy may have caused a life-threatening haemorrhage and also delayed life-saving definitive chemotherapy treatment. For this reason, it was felt prudent to proceed without a tissue diagnosis. Moreover, there was no radiological visible uterine mass to biopsy.

The most pressing initial clinical issues with this patient were bleeding from the GI tract together with the diagnosis of intussusception. In patients with widespread metastatic gestational trophoblastic disease involving the liver, long-term survival is only 27%.¹ Many of these deaths occur following haemorrhage or metabolic effects of overwhelming disease, but if early deaths are excluded, survival is in excess of 70%.¹

Intussusception is defined as a condition where a segment of bowel is telescoping inside the adjacent intestinal segment. In contrast to children, the diagnosis of intussusception in adults is uncommon, comprising only 5% of all intussusception and 1–5% of all cases of intestinal obstruction.³ A definable lesion is commonly the causative factor, with approximately 60% being due to a malignant neoplasm in the large bowel and 30% in the small bowel.^{4 5} Surgical intervention is generally advised for the management of intussusception in these cases.^{3 5} Spontaneous resolution is rare, but has been reported in children.⁶

In this particular case, the risk of surgical intervention outweighed the benefits for numerous reasons. First, the CT angiogram had shown a likely metastatic choriocarcinoma lesion within the intussusception that was the source of the bleeding. Choriocarcinoma is a highly vascular disease and therefore there was a high risk of uncontrollable bleeding and small bowel ischaemia. Second, the patient had hypoalbuminaemia, which increased the risk of anastomotic leakage and poor wound healing. Third, recovery from surgery may delay definitive chemotherapy for the metastatic disease, which may progress to other sites, causing life-threatening complications. Finally, since the intussusception was likely caused by metastatic choriocarcinoma, which is highly sensitive to chemotherapy, administration of chemotherapy could be expected to reduce the lesion allowing resolution of the intussusception without surgery. Low dose etoposide 100 mg/m² and cisplatin 20 mg/m² on days 1 and 2 were administered to reduce the chance of haemorrhage or metabolic complications and repeat CT 6 days after starting chemotherapy showed resolution of the intussusception. This case report therefore demonstrates the potential for frontline chemotherapy for treatment of intussusception caused by gestational trophoblastic disease, and potentially for other highly chemoresponsive malignancies where significant contraindications to surgery exist.

Active bleeding is not unusual in gestational trophoblastic disease and, at Charing Cross Hospital, uterine artery embolisation is frequently necessary to control bleeding from the uterus.⁷ In this case, the active site of bleeding was from the GI tract. Treatment of non-variceal bleeds is also possible via mesenteric angiography and transcatheter embolisation.⁸ Therefore, this technique was used to control bleeding from the jejunum, as demonstrated in figure 3.

The enlarging liver lesion was unlikely to represent metastatic disease progression due to the highly chemosensitive nature of the disease. The initial rise in HCG was more likely to be the result of tumour inflammation and lysis of tumour cells, releasing high concentrations of HCG. As such, no intervention was felt necessary for the liver lesions. While drainage may be indicated in some malignant and non-malignant causes of intrahepatic haemorrhage, this would not be indicated in gestational trophoblastic disease due to the high risk of life-threatening haemorrhage.

Learning points

- ▶ Advanced gestational choriocarcinoma can, rarely, present as acute gastrointestinal haemorrhage and intussusception as a result of small bowel metastatic involvement.
- ▶ A combination of clinical history, isolated elevated human chorionic gonadotropin markers and radiological findings can be used to make the diagnosis of gestational choriocarcinoma.
- ▶ This case highlights the need of recognising that choriocarcinoma is highly sensitive to chemotherapy, which influences the principles of management. This is important to consider when balancing the risks and benefits of surgery compared to conservative management of small bowel metastases.

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