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CASE STUDY

Twin pregnancy complicated by an adnexal mass

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Abstract: Gastrointestinal stromal tumours are mesenchymal neoplasms of the gastrointestinal tract.[1] This case study reports the incidental finding of a left sided adnexal mass in a woman with twin pregnancy. The presence of any mass during pregnancy raises issues for patient management, the effect on the developing fetus and mode of delivery.

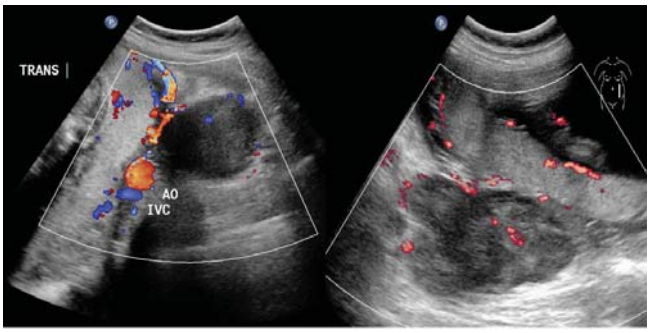

Fig. 1: Adnexal mass.

Introduction

Gastrointestinal stromal tumours (GIST) are an increasingly recognised neoplasm of the gastrointestinal tract[1,2]. They are most commonly found in the mesentery, stomach, jejunum, rectum or oesophagus[1–3].

The prevalence of these tumours is reported as 10–20 per million per year[3]. There are no defined risk factors although a familial association has been raised[1].

Patients may present with a range of generalised symptoms including, bloating, cramps, fatigue (from anaemia) or gastrointestinal bleeding[2,3]. The first three of these are often found in pregnancy and therefore may not trigger further investigation, especially in a patient with multiple pregnancy.

This case highlights the importance of a careful examination at every stage of the pregnancy.

Case presentation

A 42-year-old female, pregnant with mono-chorionic diamniotic twins presented for a routine ultrasound at 23 weeks gestation. All prior ultrasounds showed normal growth of both fetuses, no twin-to-twin transfusion and no morphologic abnormalities.

During the ultrasound a left sided adnexal mass was detected that had not been previously seen (Fig. 1).

The first step involved identifying the mass, its origin and possible effect on surrounding structures.

Further inspection revealed that the mass was 11 cm in size and had a complex, predominantly hypoechoic appearance and a well defined, but lobular border. Vascularity was identified within the lesion.

The neck, axillae and inguinal regions were also scanned with no enlarged lymph nodes identified. Due to the nonspecific features on ultrasound, a MRI was also performed. The MRI confirmed that the lesion was 11 cm and was located adjacent the aorta (Fig. 2). Any pregnancy with twins has a higher associated risk of complications; therefore further ultrasounds are performed to monitor the twins, for growth and any other abnormalities.

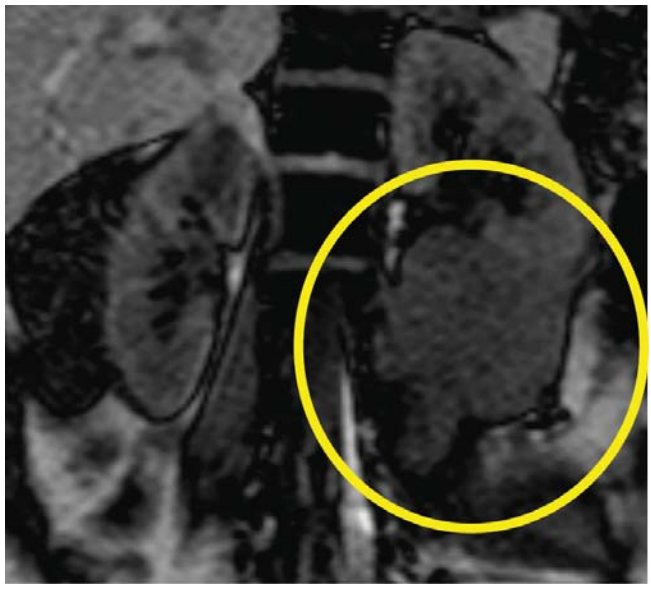

Fig. 2: Lesion adjacent to aorta.

In this case, all ultrasounds had shown a normal uncomplicated pregnancy up until 23 weeks of gestation.

This case was discussed and the course of follow up deemed to be:

- MRI to define the location
- Biopsy to define the nature of the mass
- Counselling for the patient was also arranged.

It was decided that the pregnancy be monitored and, ideally, continue until the 32nd week.

The provisional diagnosis was of a lymphoma or renal mass involving the inferior border of the left kidney.

At 25 weeks gestation, a fine needle biopsy was performed under ultrasound guidance. Three passes were made into the left sided mass.

The samples however were not of a diagnostic quality and a core biopsy was contraindicated due to the vascular nature of the mass and potential risk of haemorrhage.

The mass was monitored throughout the pregnancy and there was no change in its size.

At 37 weeks there was a rapid onset of preeclampsia. In response to this it was decided that a caesarian section be performed and the twins were delivered.

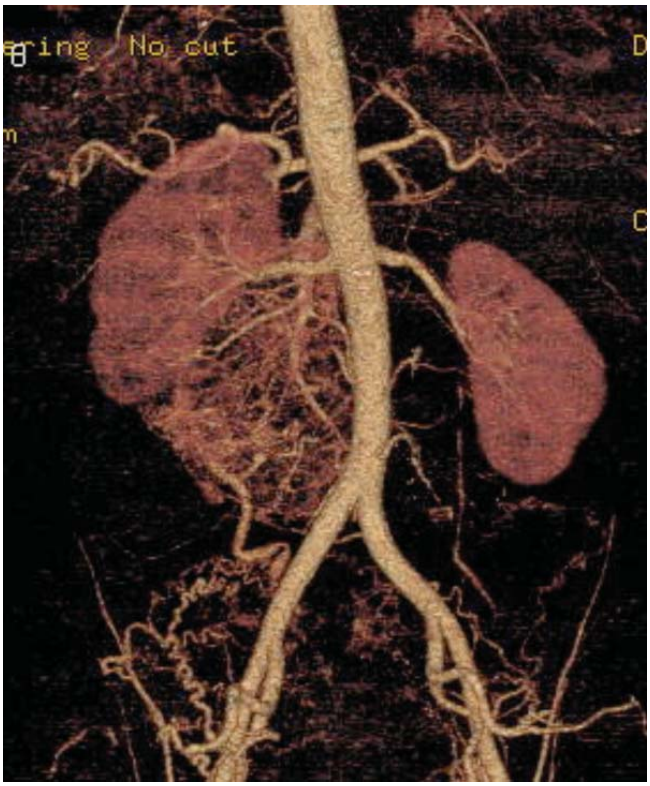

Fig. 3: 3D reconstruction of CT angiogram.

On day one post delivery the patient had rectal bleeding and a haemoglobin of only 56 g/L which was significantly lower than the normal range of 115 to 160 Hb g/L.

A CT of the abdomen was performed and demonstrated the following pathologies:

- Bilateral pleural effusions with atelectasis
- The known left retroperitoneal mass (Fig. 3) with associated displacement of the left kidney, duodenum and mesenteric vessels (Figs. 4, 5).

A 99 mTc-red cell labelled nuclear medicine scan was subsequently undertaken. After five minutes, a focal area of uptake was visualised in the left mid-abdomen; this confirmed intra-abdominal bleed.

An angiogram was then arranged and this demonstrated that the abdominal mass was being supplied by the left side of the aorta.

Embolisation was unsuccessful and an emergency operation was organised, with the patient undergoing resection of the large vascular mass.

Post surgical histological assessment of the mass revealed a gastrointestial stromal tumour (GIST) with a low mitotic rate of 1/40 HPF.

The patient's post operative recovery was uncomplicated.

Discussion

GISTs are a common mesenchymal neoplasm of the GI tract[2,4,5]; that may originate in the mesentery or omentum. There are several types defined according to histological appearances[3].

Patients often present with non-specific symptoms such as bloating, cramps, fatigue, GI bleeding, indigestion, and generalised abdominal pain. Due to the vagueness of these symptoms GISTs are often not detected until they are more advanced[2,3].

The origins of a GIST include[1,3]:

- 50–70% arising from the stomach

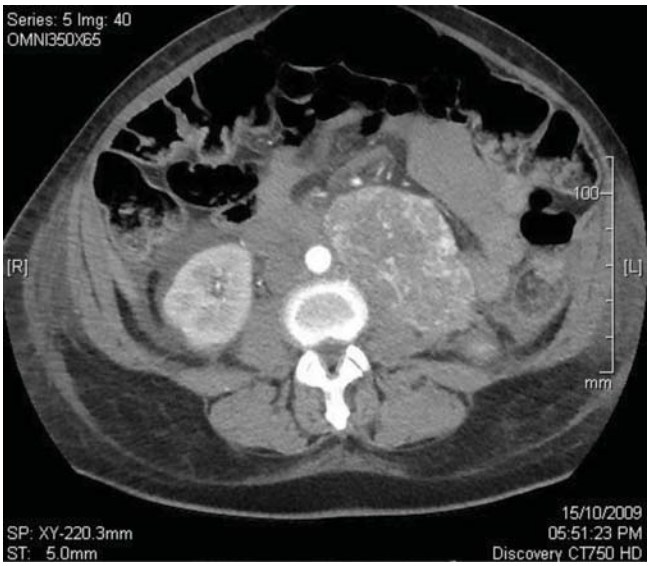

Fig. 4: Axial CT slice.

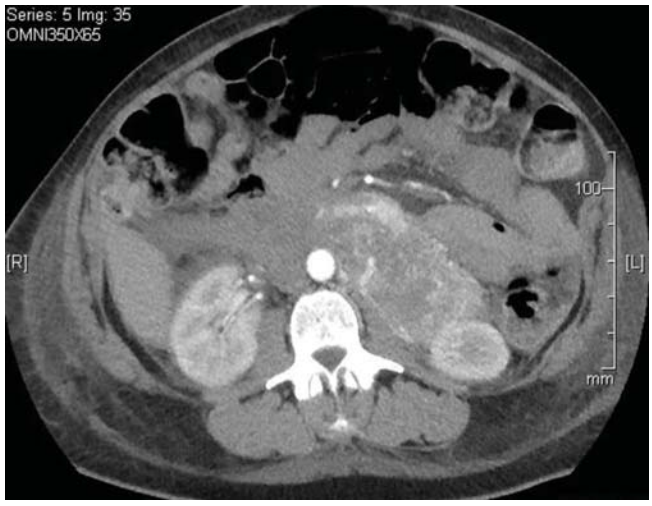

Fig. 5: Axial CT slice.

- 20–30% arising from the jejunum
- 5–15% arising from the colon/rectum
- < 5% from the oesophagus
- They are rarely of extra gastric origin.

In the USA[3], 4500–6000 new cases of GIST per year are reported; the prevalence is quoted as being 10–20 per million of population[1,6].

In this case study, the GIST was retroperitoneal in location, thus placing it in the rare category (extra gastric origin)[1,3].

There are no defined risk factors[1] for development of GIST, however, studies have suggested a familial factor or possible male predominance[6].

Complications can include bowel perforation, obstruction of the GI tract as the lesion increases in size (rare)[3], as well as GI bleeding. Other complications depend on the size and location of the lesion.

The prognosis of a patient with a GIST is based on three main factors[7]:

- Size of the lesion
- Mitotic rate
- Location.

The risk of aggressive or malignant behaviour is related to the size and mitotic rate (number of cells undergoing mitoses) of the tumour[5,8].

Low risk

- Tumours smaller than 2 cm with a mitotic rate of less than 5/50 HPFs.

Intermediate risk

- Tumours smaller than 5 cm and mitotic rate of 6-10/50 HPFs
- Tumours between 5–10 cm with a mitotic rate less than 5/50 HPFs.

High risk

- Tumours larger than 5 cm mitotic rate greater than 5/50 HPFs
- Any tumour larger than 10 cm regardless of mitotic rate
- Any tumour regardless of size, with a mitotic rate greater than 10/50 HPFs.

On ultrasound imaging GIST tumours may show cystic degeneration or necrosis.

Under microscopic evaluation, 60–70 % demonstrate spindle cell formation with the remainder formed by epithelial cells[2]. Mucosal invasion and necrosis are signs that indicate malignancy[2].

Liver metastases may occur but lymph node involvement is rare. Biopsy carries the risk of seeding and the best approach is to plan for complete resection of the mass[2,4].

Depending on the mitotic rate, size and location of the mass there may be a 48–65% chance of a five-year survival rate.

Conclusion

In obstetric ultrasound, our primary focus is on fetal development together with any associated pathology. This case is a reminder that obstetric scanning is about more than the foetus. Our obligation is also to the mother. Assessing the adnexal region requires careful attention and may contribute to overall management as was demonstrated in this case.

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