

A traumatic means of diagnosing gastrointestinal stromal tumour: A case report

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Blunt abdominal trauma (BAT) is known to cause intra-abdominal organ damage and haemorrhage, especially after severe impact to the body. We present a case in which a gastrointestinal stromal tumour became symptomatic after BAT.

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Gastrointestinal stromal tumour (GIST) is one of the most common malignant mesenchymal tumours of the stomach. Currently there are no imaging modalities that can be used to diagnose GIST conclusively. The diagnosis can be confirmed only with histological and immunohistochemical investigations.^[1] We present a case of GIST that became symptomatic after blunt abdominal trauma (BAT).

Case report

A 52-year-old man was brought to the accident and emergency department at Pietersburg Hospital in Polokwane, Limpopo Province, South Africa, after being involved in a head-on motor vehicle collision. He had been driving, while fastening his seat belt at the same time. Although he was fully conscious, he could not recall the details of the accident. He had a high body mass index. On examination, there were bruises all over his body. His abdomen was tender and distended. Although he was clinically stable and plain radiographs revealed no skeletal fractures, focused assessment with sonography for trauma (FAST) showed a significant amount of fluid in the abdominal cavity. His haemoglobin concentration was 10 g/dL when he arrived and dropped to 8 g/dL while he was waiting for further imaging in the form of a computed tomography (CT) scan. Because of this drop, the CT scan was cancelled and an urgent exploratory laparotomy was performed.

During the operation, no injured intra-abdominal organs were identified, but a large soft-tissue mass arising from the stomach with some haemorrhages within was found (Fig.1). No other soft-tissue masses or possible metastases were identified. A wedge resection of the stomach was performed (Fig. 2). The soft-tissue mass was removed together with the resected part of the stomach.

The patient remained haemodynamically stable during surgery, and his postoperative recovery was uneventful.

Histological examination of the gastric mass showed features consistent with a GIST. The mitotic rate was 1/5 mm². No necrosis was identified, and the resection margins appeared clear of tumour. The pathological stage classification was T4NxMx, stage IIIB.

Discussion

BAT is one of the types of abdominal trauma most commonly seen in the emergency department and can result in substantial morbidity and mortality. The majority of BAT cases are related to motor vehicle collisions or vehicle-pedestrian accidents. A sudden and pronounced rise in abdominal pressure, blunt force compressing the viscera against the vertebrae, a shear force on the intra-abdominal organs

from deceleration, and damage caused by associated bone fractures are mechanisms responsible for intra-abdominal damage after BAT, especially in the case of motor vehicle accidents.^[2,3]

In our patient, the initial concerns were possible intra-abdominal organ damage and/or intra-abdominal haemorrhage. Instead, a giant soft-tissue tumour was found that became symptomatic after BAT, probably as a result of one or more of the mechanisms described above.

CT has been recognised as an important investigation in the management of BAT. It has a very high accuracy in detecting intra-abdominal injuries, with sensitivity of 97 - 98% and specificity of 97 - 99%. FAST is a non-invasive imaging modality that is indicated in all cases of BAT.^[2-4] However, it is not as accurate as a CT scan, especially in uncooperative patients, morbidly obese patients and patients with bowel distension.^[5]



Fig. 1. Intraoperative finding of a soft-tissue mass arising from the stomach.



Fig. 2. Wedge resection of the stomach to remove the gastric tumour.

The current recommendation for the treatment of GIST without metastases is surgical resection. This recommendation is based on the fact that all GISTs are potentially malignant. Miettinen *et al.*^[6] reported that small gastric GISTs (size <2 cm) have a 100% cure rate after surgical resection. In managing GISTs, early diagnosis and surgical resection are therefore important in improving prognosis.^[1]

In our case, the lesion was much bigger than 2 cm, but no metastases were detected during the operation. Histological examination showed that the resection margins were clear of tumour.

Although GIST is one of the most common mesenchymal tumours of the stomach, its clinical symptoms are nonspecific and depend on tumour size and location. Small GISTs are usually asymptomatic and only detected during investigations or surgical procedures for unrelated medical conditions.^[1,7] Our patient's GIST was >16 cm in size and weighed >3 kg. It is very unusual for a tumour of this size to be asymptomatic, but our patient only became symptomatic after he sustained BAT.

Conclusion

In all surgical procedures, even those performed for trauma, there is always the possibility of finding unexpected pathologies. Surgeons should remain alert for these, and they should also have the sound knowledge and judgement to deal with such findings.

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