Gastric liposarcoma in a patient with severe obesity

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ABSTRACT

Liposarcoma is the most common soft tissue sarcoma in adults. Predominant locations are the limbs and retroperitoneum. Intra-abdominal liposarcoma represents only 2% of all cases and visceral location is exceptional. Gastric liposarcoma is extremely rare, with fewer than 20 cases reported. The treatment of choice is wide en-bloc surgical resection. If the tumour arises in the area of the cardia, resection involves resection of the proximal stomach as well as the distal oesophagus. Traditional reconstruction with oesophagogastrostomy often leads to troublesome reflux. We report a case of gastric liposarcoma arising in the gastro-oesophageal junction in a severely obese patient.

KEYWORDS

Liposarcoma – Stomach neoplasms/diagnostic imaging – Stomach neoplasms/pathology – Stomach neoplasms/surgery – Laparoscopic esophagojejunostomy

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Case history

A 72-year-old man, treated for type 2 diabetes and hypertension, was admitted after an accidental fall at night, with a few days' history of fatigue, weakness, polyuria and polydipsia. He also reported an episode of melaena one week earlier. He had no dysphagia, abdominal pain or recent weight loss. On admission, he was hypotensive and had tachycardia but his physical examination was otherwise unremarkable, except for signs of dehydration and hypovolaemia, as well as severe obesity (body mass index 37 kg/m²). His haemoglobin level was 70 g/l, glycaemia 25 mmol/l and serum creatinine 111 µmol/l. After resuscitation, upper gastrointestinal endoscopy revealed a large submucosal mass protruding in the gastric lumen at the level and just below the gastro-oesophageal junction, with a small ulceration suggesting recent haemorrhage (Fig 1). Contrast-enhanced computed tomography (CT) showed an 11-cm heterogeneous mass arising from the posterior wall of the lesser curvature of the stomach, extending towards the gastro-oesophageal junction into the hiatus (Fig 2). No nodal involvement, nor any other lesion, was detected. A few weeks later, the patient underwent elective laparoscopic resection of the proximal stomach and 5 cm of the distal oesophagus, with oesophagojejunol Roux-en-Y reconstruction, using a 75-cm Roux limb. The resected specimen was extracted through one of the trocar incisions using an extraction bag. The postoperative course was uneventful and the patient was discharged on postoperative day 7.

Histopathological examination of the resected specimen revealed a large (14 cm), mostly well-differentiated grade 3

liposarcoma, with 30 % of the tumour showing undifferentiated features. Resection margins were clear.

Our patient did not undergo any adjuvant treatment, as decided after multidisciplinary team discussion. He had CT evaluation every six months during the first postoperative year, then yearly. He also attends regular follow-up visits and, like any bariatric patient, takes micronutrient supplements. Six years after surgery, he is doing well, without clinical or radiological evidence of tumour recurrence. His current body mass index is 25 kg/m², his diabetes is in complete remission, according to the American Diabetes Association criteria,¹ and his blood pressure is normal without therapy.

Discussion

Liposarcoma accounts for 15–20 % of all mesenchymal malignancies, making it the most frequent soft tissue sarcoma in adults.² Histologically, the World Health Organization classification recognises four major histological subtypes: well-differentiated, undifferentiated, myxoid and pleomorphic liposarcoma.³ Well-differentiated liposarcomas show local recurrence in about one-third of cases but, unlike the other subtypes, their potential for metastasis is low.⁴ Gastric liposarcoma results from the proliferation of undifferentiated mesenchymal cells and lipoblasts present in the gastric submucosa and muscular layer.^{5,6} An exophytic growth from the gastric wall and apparent submucosal location are characteristic. Typical locations are the lesser curvature or the antrum.^{7,5} Their size is variable but can reach huge proportions.

Figure 1 Upper gastrointestinal endoscopy. Endoscopic view of the gastroesophageal junction: submucosal mass with ulceration suggesting recent hemorrhage

Figure 2 Computed tomography of the abdomen, showing an 11-cm mass arising from the posterior wall of the lesser curvature of the stomach (arrowheads)

Preoperative diagnosis is challenging. Because of the diagnostic limitations of endoscopy for gastric submucosal tumours showing extrinsic growth, as in our patient, CT and/or endoscopic ultrasonography is also recommended for asymptomatic submucosal tumours larger than 2 cm to evaluate whole images of tumours and high-risk features including ulceration, irregular borders, internal heterogeneity, enlargement of regional lymph nodes and an increase

in size during follow-up.⁸ CT may show a heterogeneous mass. In well differentiated liposarcomas, as in our case, there may be areas of fatty density.^{5,9} Endoscopic ultrasound-guided fine-needle aspiration (EUS-FNA) biopsy may provide the most reliable histological diagnosis of submucosal tumours before surgery. Its indications include histologically undiagnosed and asymptomatic submucosal tumours. EUS-FNA biopsy is not recommended for symptomatic tumours, tumours with benign endoscopic features and tumours less than 2 cm in size.⁸ Overall mortality from liposarcoma depends on location and histological subtype, with well-differentiated tumours having the best prognosis. Five-year mortality ranges from 0% for atypical lipomatous tumour of the extremities to nearly 80% for tumours occurring in the visceral sites and retroperitoneum.^{3,4} While some reported patients with gastric liposarcoma died from tumour recurrence within months after surgery; several others, as the present case, have survived for a long period. Our patient is well with no evidence of disease six years after surgery.

The differential diagnosis of gastric submucosal tumours includes the two most common primary non-epithelial neoplasms of the stomach, lymphomas and gastrointestinal stromal tumours.^{6,8,10,11} Gastrointestinal stromal tumour was our suspected preoperative diagnosis.

Treatment of choice of symptomatic submucosal tumours, and notably gastrointestinal stromal or gastric submucosal tumours, is wide en-bloc resection with clear resection margins, offering a chance for permanent cure.⁸ Where the tumour arises in the area of the cardia, resection involves a proximal gastrectomy with resection of the distal oesophagus. Reconstruction traditionally has been with esophago-gastrostomy but this is often followed by severe gastroesophageal reflux. Proximal gastrectomy with Roux-en-Y oesophagojejunostomy, leaving the antrum in place, provides a reasonable alternative and prevents reflux.¹² It is our preferred reconstruction method for this reason. Furthermore, it replicates the construction of a Roux-en-Y proximal gastric bypass and its positive effects in obese patients, providing long-term weight loss and improvement or correction of obesity related comorbidities, as was the case in our patient. In this patient, a single operation resulted in six-year total remission of a rare malignant tumour, obesity, hypertension and diabetes.¹ Gastrointestinal cancer surgery and bariatric surgery share not only their target organs and surgical skills but also the primary, secondary and adverse effects of many procedures. Interdisciplinarity is important and may benefit the patient, as in this particular case.¹³

Conclusion

Proximal gastrectomy with Roux-en-Y esophagojejunostomy provides a good alternative to proximal gastrectomy with esophagogastrostomy for localised gastric submucosal tumours arising at or just below the cardia, especially in severely obese patients. It also prevents gastroesophageal reflux.

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