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CASE REPORT

Emergency Laparoscopic Gastrectomy for Intraperitoneal Ruptured Gastric Gastrointestinal Stromal Tumor

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Introduction

Gastrointestinal stromal tumors (GISTs) are the most common type of mesenchymal tumors of the digestive tract. GISTs locate at any part of the gastrointestinal tract, most commonly at the stomach and secondly at the small intestine [1]. The major part of the GISTs is clinically asymptomatic and most symptoms are related to the size of the tumor. Despite their smooth progress, GISTs can sometimes be confronted with life-threatening complications. Here, we presented an intraperitoneal spontaneous rupture of a 9-cm gastric stromal tumor treated by laparoscopy. To our knowledge, this is the first case in the literature in this size which was treated by totally laparoscopy in case of emergency.

Case Presentation

A 57-year-old man was admitted to emergency department with abdominal pain. He had no previous history of disease or surgery. Vital signs were almost normal. Hemoglobin level was 10.7 g/dl, white blood cell count was 13.000/mm^3, and thrombocyte count was 179.000/mm^3. Abdominal ultrasound revealed a 10 × 10-cm-sized mass or hematoma on the gastric wall. Contrast-enhanced computed tomography showed a solid mass at the posterior gastric wall measuring approximately 10 × 10 cm in size (Fig. 1). Because the patient was hemodynamically stable, laparoscopic exploration was planned. In French position, laparoscopic exploration demonstrated 1500 cc blood in the abdominal cavity. Gastro-colic ligament was divided and a 9 × 7-cm-sized exophytic solid mass originating from the posterior wall of the stomach was seen (Fig. 2). There was active bleeding on the capsule of the tumor. A vertical wedge gastrectomy was done by two laparoscopic linear staplers and carried out of the abdomen from a suprapubic incision. A silicon drain was placed into the abdomen. Postoperative course was uneventful, oral intake started on postoperative day one, drain was taken on the second day, and the patient was discharged on the postoperative third day. Histopathological examination revealed interlaced bundles of spindle cells with abundant cytoplasmic vacuoles and nuclear palisading with focal hemorrhage and necrosis (Fig. 3). The mitotic index was low [1–2/50 high-power field (HPF)]. Immunohistochemically, the tumoral cells expressed CD117 (Fig. 4), DOG1, CD34 and were negative for smooth muscle actin (SMA), S-100 and Desmin. The tumor was diagnosed as a GIST based on the histomorphological and immunohistochemical features. Imatinib treatment was started and 5-month follow-up showed no recurrence.

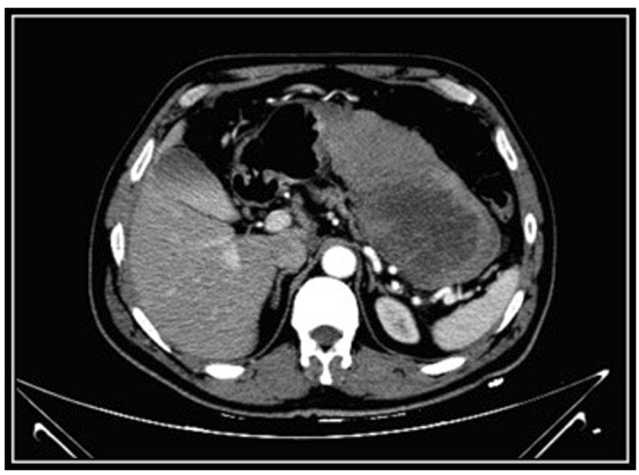

Fig. 1 CT scan showed a large mass located posterior of the stomach

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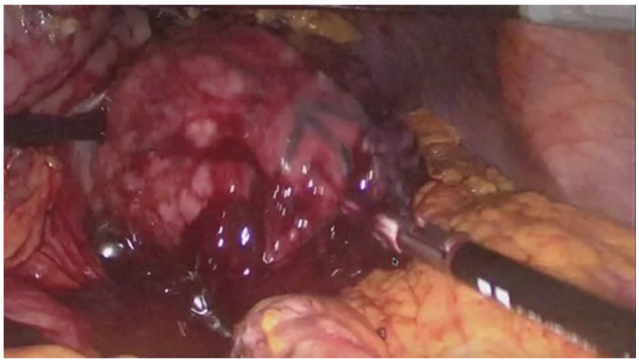

Fig. 2 Posterior gastric originated hemorrhagic mass

Discussion

We here presented a rare complication of gastric GISTs. Intraperitoneal rupture of these tumors can cause life-threatening intraabdominal hemorrhage. In this condition, laparoscopic approach is still controversial. This case report noticed a totally laparoscopic resection of a 9-cm gastric stromal tumor rupture. Rate of the rupture risk was reported as % 7 and the most common site of the rupture was gastrointestinal lumen [2, 3]. But intraperitoneal ruptures have been also reported with the clinical manifestations of hemoperitoneum or peritonitis [4]. R0 resection is accepted as the gold standard in the treatment of GISTs and lymph node dissection is not offered. Open or laparoscopic methods can be preferred for resection and laparoscopic approaches have been widely accepted in small tumors (< 5 cm), but controversies are still continuing in larger GISTs. There are many studies on laparoscopic treatment of large GISTs and laparoscopic resection for large GISTs had favorable outcomes in non-emergency situations [5–8]. In case of emergency, laparotomy usually preferred instead of laparoscopy and so far laparoscopic resection of a gastric stromal tumor rupture has been reported only in one case with a size of 4 × 3 cm [9].

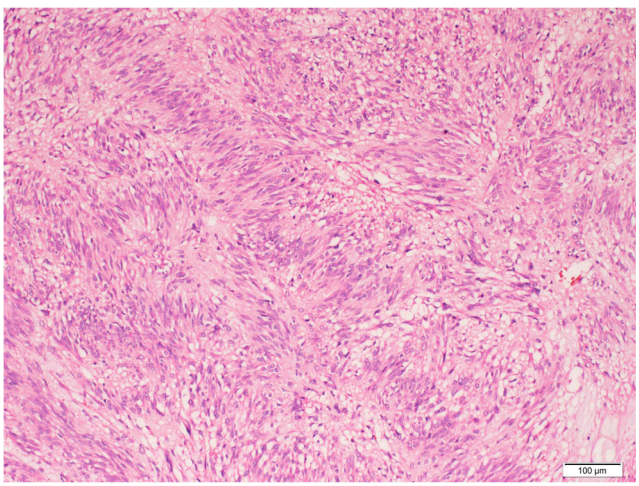

Fig. 3 Palisaded-vacuolated spindle cells of GIST (H&E, × 100)

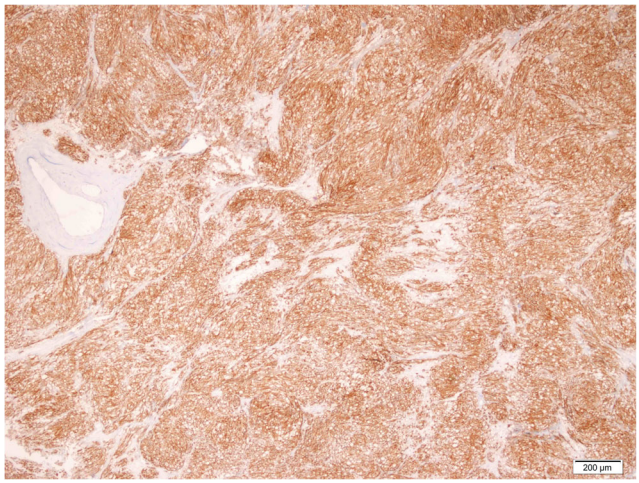

Fig. 4 Strong and diffuse expression of CD117(c-KIT) (× 40)

If vital signs of the patients are stable, laparoscopic resection of gastric GISTs can be justified even in emergency situations. The tumor location is another determinant factor for laparoscopy. Tumors located on the greater curvature and away from the pylori are more suitable for laparoscopic resections.

Conclusion

Laparoscopic approach can be used for large gastric GISTs perforations in appropriate conditions.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

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