 doi:10.20944/preprints201812.0316.v1

Giant gastrointestinal stromal tumor of the stomach

Tuğrul Çakır, Arif Aslaner, Kemal Eyvaz, Murat Kazım Kazan

University of Health Sciences, Antalya Training and Research Hospital, Department of General Surgery, Antalya, TURKEY

Abstract:

Gastrointestinal stromal tumors are the mostly seen mesenchymal tumors of the gastrointestinal system and mostly seen at the stomach. We report a case of giant gastrointestinal stromal tumor of the stomach in a 71-year-old woman. The physical examination and radiological findings revealed that a giant mass occupied most of the abdominal cavity. The patient underwent an en-block resection of this giant mass with partial resection of the distal stomach and transverse colon and, reconstruction with gastro-jejunostomy and end-to end colo-colic anatomoses. The histopathologic diagnosis was revealed as gastrointestinal stromal tumor of the stomach. We suggest that complete surgical resection is the only effective radical treatment approach for giant gastrointestinal stromal tumors of the stomach.

Keywords: Stomach, giant, gastrointestinal stromal tumor; treatment

Corresponding Author to: Arif Aslaner

Varlık Mahallesi, Kazım Karabekir Caddesi
Soğuksu, Antalya, 07100, Turkey

e-mail address: arifaslaner@gmail.com

1. Introduction

60-70% of gastrointestinal stromal tumors were seen in the stomach. (1,2) Gastrointestinal bleeding, abdominal pain, palpable mass or bowel obstruction are the most commonly seen symptoms. Surgical resection is accepted treatment approach of GISTs. We describe a relatively rare case of a very large GIST of the stomach. To the best of our knowledge, it is the largest GIST of the stomach reported in the literature. The tumor was completely resected with partial distal stomach and colon and diagnosed with histopathologically. Here we present of a case of 71 years elderly woman with gastrointestinal stromal tumor at the stomach involving transverse colon that was also confirmed with the ultrasonography and PET CT was underwent surgical resection and diagnosed histologically.

2. Case Presentation

A 71-year-old woman was admitted our general surgery clinic for evaluation of abdominal distension. After taking her history and physical examination routine laboratory examinations were taken. Abdominal physical examination produced remarkable abdominal bulging. There was not any significant past or family history of malignancy of the patient. The patient's hematological and biochemical findings on admission included; AST 14 U/L, ALT 6 U/L, GGT 12 U/L, albumin 1.7 g/dL, total bilirubin 2.9 mg/dL, direct bilirubin 1.45 mg/dL, CRP 249 mg/dL, amylase 15U/L, BUN 13 mg/dL, creatinine 0.54 mg/dL, haemoglobin 8.0 g/dL, WBC 8900/µl, platelets 373 K/µl, PT 16.2 s, PTT 27.4%, and, INR 1.42. The tumor markers, including carcinoembryonic antigen (1,90U/mL), carbohydrate antigen 125 (115,3U/mL, high), carbohydrate antigen 15-3 (8,2U/mL), alphafetoprotein and carbohydrate antigen 19- 9 (3,6U/mL), were within the normal range except CA125. Abdominal ultrasonography revealed a 195x205 mm sized iso-anechoic heterogeneous area on the left side of the abdomen (necrosis solid lesion?, Complicated loculated fluid collection?). Pozitron Emisson Tomography revealed a diffuse heterogeneous, low FDG uptake observing mass containing 29x19cm sized lobular-contoured, septated, encapsulated, large degeneration areas that did not show a clear fat plan between the posterior wall of the abdomen and the posterior wall of the abdomen (SUVmax: 4.4). GIST / Histopathological correlation is recommended for malignant mesenchymal tumor?. (Figure 1,2). The patient demanded the surgical removal of the tumor. Exact details of the procedure were explained and a patient informed consent was obtained. He had no other surgical history. He received a single dose of prophylactic antibiotic (Cefuroxime Axetil 1g) 1 hour before the skin incision and antithrombotic prophylaxis was administered with low-molecular-weight heparin 12 hours before. A urinary catheter was inserted. At surgery, a giant abdominal mass involving both distal stomach and transverse colon was seen. Subtotal gastrectomy, omentectomy, transverse colon resection and end-to-end anastomoses and gastroenterostomy were performed.

Preprints (www.preprints.org) | NOT PEER-REVIEWED | Posted: 26 December 2018 doi:10.20944/preprints201812.0316.v1

Resected specimen was sent to pathology (Figure 3). No problems occurred during the surgery. The total operation time was 160 minutes with a blood loss of fewer than 500 ml. There were no postoperative complications. The patient was started on an oral diet postoperative third day and the abdominal drain was removed on the sixth day. She was discharged from hospital on the tenth postoperative day. She resumed her normal life without any problems, disease free for 6 months.

The histopathology was reported as gastrointestinal stromal tumor of the stomach. Middle risk (miettinen Criteria) It was reported as 29 x 19 cm in diameter. Cell type: Spindle and epithelioid. Mitosis number: 2 mitosis was observed in 20 BBA. (5 mm 2) Cellularity: Moderately Cellular, Cytological atypia: light, Growth pattern: Expansive, Retained layers: attached to the stomach serosa, Ulceration: None, Bleeding: Yes, Necrosis: Yes (below 50%), Surgical margins of gastric resection material are safe. Immunohistochemical examination results: CD 117 Over 50% diffuse medium (++) (2 separate blocks), CD 34 50% positive (2 separate blocks), SMA focal (+) (2 separate blocks), Desmin focal (2 separate blocks) Separator, immunohistochemical examination performed on 2 different blocks directed to the diagnosis; CD 56 and Vimentin positive, B - catenin cytoplasmic weak (+); CD 99, CD 3, CD 20, EMA, WT - 1, LCA, S 100, HMWK, panCK, Sinaptophysin, Kromagranin, Melan - A, HMB 45, P 63 were found negative. The proliferation index is 2% with Ki - 67 (2 separate blocks).

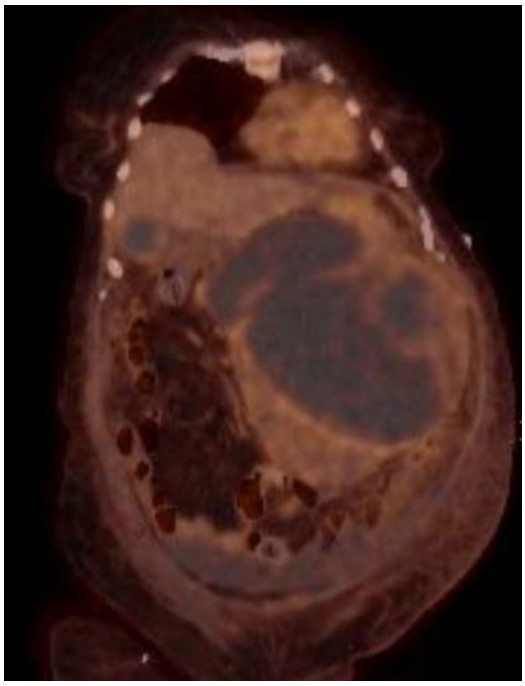

Fig-1: PET CT reveals a giant mass occupied a majority of the abdominal cavity

Fig-2: PET CT reveals a giant mass occupied a majority of the abdominal cavity

Fig-3: Excised specimen was seen.

3. Discussion

Gastrointestinal stromal tumors are rare mesenchymal neoplasms that arise in the wall of the gastrointestinal system. Asymptomatic in smaller diameters but, giant GISTs may cause abdominal pain, abdominal distension, obstruction of digestive tract and compression of surrounding structures (3). Physical examination reveals a palpable mass in the abdomen when the GISTs are giant. As also in our patient, she had a severe abdominal distension and an obvious palpable abdominal mass. There are three similar cases of giant GIST of the stomach described in literature (3-6). These giant GISTs had some common characteristics: a huge tumour with no lethal emergent status, expanding growth, relatively clear border, inhomogeneous cystic and solid elements. Consideration of these traits will be of benefit for diagnosis of future cases (3). Surgery is the most important radical therapy for patients with GIST with no evidence of metastasis. As also same the literature we remove the tumor.

Abdominal US is useful screening tool in the cases with pain in abdomen, but computed tomography (CT) and magnetic resonance imaging (MRI) are mandatory to make an exact staging and preoperative planning of surgery,

 doi:10.20944/preprints201812.0316.v1

Fluorodeoxyglucose positron emission tomography is not routine tool but can be useful to monitor the effect from imatinib treatment and follow-up (7). We performed PET CT to our patient.

Choices for surgical approaches are wedge resection involving the organs (8).

Imatinib mesylate have played a key role as a neoadjuvant therapy in the management of GISTs (9).

4. Conclusions

GIST at the stomach is seen commonly. When they become symptomatic at a giant diameters wedge resection of the tumor was achieved to relief the symptoms.

5. References

1. Miettinen M, Lasota J. Gastrointestinal stromal tumors: pathology and prognosis at different sites. Semin Diagn Pathol 2006; 23: 70–83.

2. Demetri GD, Von Mehren M, Antonescu CR et al. NCCN task force report: update on the management of patients with gastrointestinal stromal tumors. J Natl Compr Canc Netw 2010; 8(Suppl 2): S1–41.

3. Zhang Y, Wang YJ, Lu CJ, Shu GM, Bai T. Giant gastrointestinal stromal tumour of the stomach: a case report with surgical treatment. Ann R Coll Surg Engl. 2018 Mar;100(3):e46-e48. doi: 10.1308/rcsann.2017.0211. Epub 2018 Feb 27. PubMed PMID: 29484926; PubMed Central PMCID: PMC5930093.

4. Cappellani A, Piccolo G, Cardì F et al. Giant gastrointestinal stromal tumor (GIST) of the stomach cause of high bowel obstruction: surgical management. World J Surg Oncol 2013; 11: 172–175.

5. Zhou L, Liu C, Bai JG et al. A rare giant gastrointestinal stromal tumor of the stomach traversing the upper abdomen: a case report and literature review. World J Surg Oncol 2012; 10: 66–70.

6.Medinger M, Kleinschmidt M, Mross K et al. c-kit (CD117) expression in human tumors and its prognostic value: an immunohistochemical analysis. Pathol Oncol Res 2010; 16: 295–301.

7. Goldstein D, Tan BS, Rossleigh M, et al. Gastrointestinal stromal tumors: correlation of 18F-FDG Gamma camerabased coincidence positron emission tomography with CT for assessment of treatment response – an AGITG study. Oncology 2005;69:326-32.

8. Joo MK, Park JJ, Kim H, et al. Endoscopic versus surgical resection of GI stromal tumors in the upper GI tract. Gastrointest Endosc 2016;83:318-26.

9. Chok AY, Koh YX, Ow MY, et al. A systematic review and meta-analysis comparing pancreatoduodenectomy versus limited resection for duodenal gastrointestinal stromal tumors. Ann Surg Oncol 2014;21:3429-38.