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Case report Open Access

Rare presentation of benign retroperitoneal benign and malignant EGIST in young female patients with gynecologycal complaints

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Abstract. **Introduction**. Gastrointestinal stromal tumors (GISTs) originate from the gastrointestinal (GI) tract, but data from the last 30 years show that there are formations with pathologically and immunohistochemically similar GIST lesions, but located outside the gastrointestinal tract and have been referred to as extra-GISTs (eGIST). There is a rare incidence of eGIST, and information regarding the search for survival is scarce. Information such as tumor markers, tumor size, immunohistochemistry are important to help understand these rare pathologies. **Case presentation.** We present 2 cases that appeared in the Obstetrics and Gynecology Clinic in 2022, one with a result considered benign with a retroperitoneal tumor and one malignant, both patients benefiting from surgical intervention. The surgical team consisted in both cases of both gynecologists and general surgeons. **Conclusions.** The publication of these results in the literature will be important for the assessment of the conduct, the treatment.

Keywords: GIST, EGIST, immunohistochemistry,intestinal tract.

Introduction

Gastrointestinal stromal tumors can present in rare cases outside the gastrointestinal tract as extragastrointestinal stromal tumor known as EGIST.

GIST form 1% of all gastrointestinal tumors, and are primary mesenchymal tumors. Only 10% of GIST are known as EGIST and the main difference is that GIST can take place anywhere in between the esophagus and the anus, while EGIST are more common in the mesentery and omentum. EGIST patients are younger, presenting with bigger tumors at the time of diagnosis and have a poor outcome compared with GIST patients.

The prognosis of gist tumors in general depends on c-kit status, age, gender of the patients, mitotic index, dimensions of the tumor, presence of metastasis. EGIST can also be benign in very rare cases depending on the c-kit status, the rate of mitosis and tumor necrosis.

Case presentation

Patient C.S female, 52 years old presented for ultrasound examination with a 16 cm retrouterine tumor detected by ultrasound, complaining of pelvic pain, abdominal flatulence and marked asthenia.

Surgery was performed and a retroperineal mass of 17 cm, fibromatous

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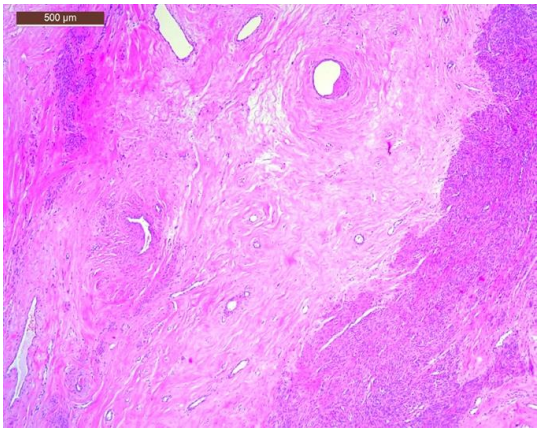
uterus was found, total hysterectomy with bilateral adnexectomy and tumorectomy was performed.

The macroscopic histopathological examination revealed a 3.5 cm cervix, with gelatinous cysts, a 14/10/6 cm uterine body with multiple subserosal and intramural fibromatous nodules, maximum diameter 5.5 cm, endometrium 1 mm, fundal polyp 7 mm. Detached from the uterus a nodular formation of 16/15/10.5 cm partially covered by serosa with hemorrhagic fusions, on the section we can see translucent liquid areas with white fasciculated aspects, right appendix with salpinges 4/1 cm, ovary 3/1 cm, left appendix with similar appearance.

The microscopic examination revealed cervical glandular hyperplasia, proliferative endometrium, functional adenopolyp, myometrium with adenomyosis, subserous and intramural multinodular uterine leiomyoma. Tumor formation brought separately shows benign aspects with areas of sclerohyalinosis, interstitial edema and hydropic degenerative changes (Fig 1). Ovaries with cortico-stromal hyperplasia.

The final anatomopathological diagnosis was endometrial adenopolyp, adenomyosis, multinodular uterine leiomyoma, aspects compatible with a stromal tumor that requires differentiation from retroperitoneal EGIST.



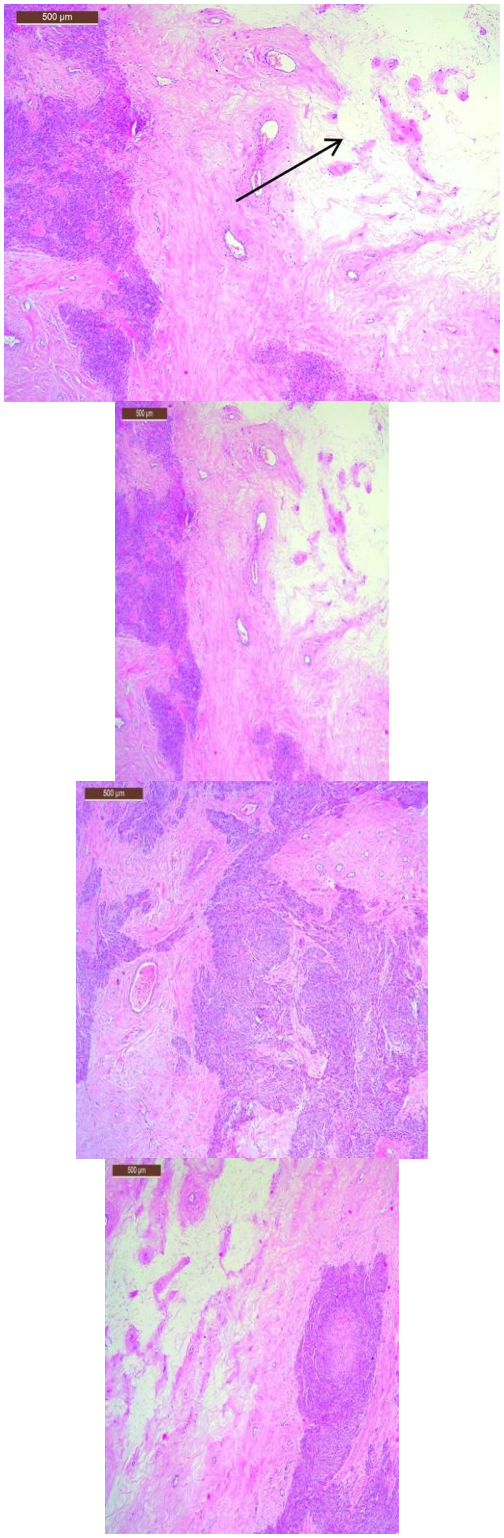


Figure 1. Hematoxylin-eosin images. Extensive areas of sclerohyalinosis and interstitial edema with cystic degenerative changes. Interstitial edema and cystic degeneration (arrow)

The patient with retroperitoneal EGIST at the immunohistochemical examination presented a benign mesenchymal tumor proliferation, well delimited, non-encapsulated, covered on a serous slope, consisting of groups of fusiform cells arranged in randomly cut bundles, separated by extensive myxoid, edematous or sclerohyaline areas. The cells tumors were without cyto-nuclear atypia, with elongated, vesicular nuclei and eosinophilic cytoplasm with imprecise boundaries. In the examined sections, no mitotic activity, tumor necrosis or infiltrative aspects were identified.

Markers revealed:

SMA, H-caldesmon- intensely positive diffuse in tumor proliferation.

CD117, DOG1- negative in tumor proliferation.

Ki67 positive in 1% of the tumor population in the most active areas.

Differential diagnosis between a leiomyoma with hydropic changes and a benign retroperitoneal EGIST.

Second patient, also female, 47 years old presented for decreased appetite, weight loss, abdominal flatulence and ecography that revealed a mass in the lower abdomen.

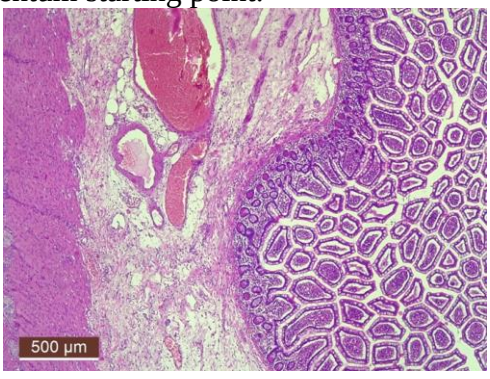
The operation performed on 01.03.2022 identified: tumorectomy with terminal ileum enterectomy. Anatomo-pathology histological exam revealed: well-defined tumor formation, dimensions 11/8/6 cm with a broken capsule, fragment of omentum adhering to the surface, on section solid appearance with white-yellow areas and extended areas of central necrosis and hemorrhage. A 6 cm long appendix with adipose tissue attached. With a intestine approximately 90 cm long, at one of the ends of the intestinal serosa there was hemorrhagic suffusion, whit white-ish deposits and the adhesion of loops between them, intestine with greenish mucinous content and on a hematic portion, the serosa also showed other indurated parts with hemorrhagic infusions, the intestinal mucosa did not show macroscopic changes.

Microscopic examination:

The tumor formation included a dense proliferation of fusiform and epithelioid tumor cells, with solid architecture, low and moderate nuclear pleomorphism, mitotic activity <5/25 hpf, reduced sclerohyaline and focal myxoid stroma. Areas with discoid tumor cells, in the periphery of the tumor and in the stroma myxoida, there was a focus of tumor cells with marked nuclear pleomorphism. The tumor showed areas of tumor necrosis, hemorrhage and polymorphic inflammatory infiltrate - lymphocytes, eosinophils, PMN, plasma cells. Vascular thrombosis and the appearance of a pseudocapsule at the periphery were identified. There were no clear images of angioinvasion.

The intestine showed a serosa with abundant fibrino-leukocytic inflammation with extension in the external muscular layer and subserosal edema, and the intestinal mucosa without histopathological changes. The mesenter with abundant polymorphic inflammation and vascular thrombosis. Serous appendix presented with areas of polymorphic inflammation.

The suggested anatomic-pathological diagnosis was compatible with a gastrointestinal stromal tumor of mixed type - GIST, possibly extraintestinal with an omentum starting point.



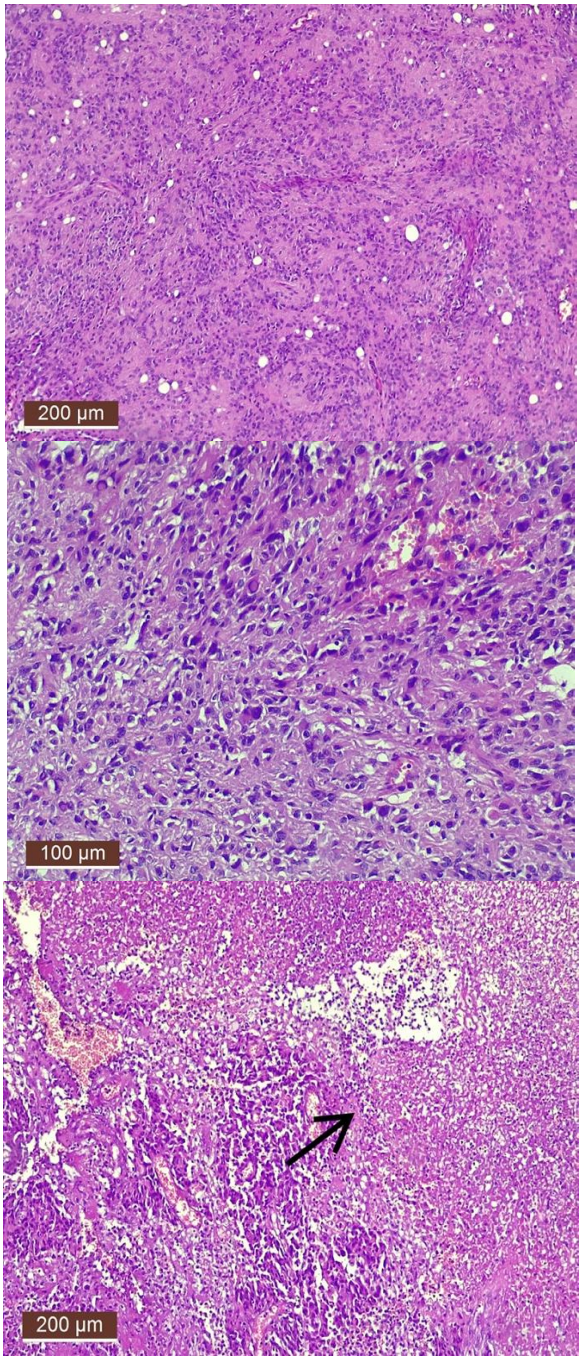


Figure 2. Hematoxylin eosin images with fusiform and epithelioid cells, intestine without lesions, tumor necrosis (arrow)

CT thoraco-abdominal-pelvic native and with contrast substance performed postoperatively 20.11.2022 revealed:

At the thoracic level, there were no pleural or pericardial collections, without suspicious pulmonary nodules. Several infracentimeter nodular images were visible at the level of the medial group. The large mediastinal vessels are permeable.

At the abdominopelvic level the images showed:

Terminal ileum postenterectomy status with lateral-lateral ileo-cecal anastomosis. Liver, pancreas, spine, adrenal glands, kidneys without newly appearing lesions. The cholecyst without images of stones, without parietal thickening, without dilation of intra or extrahepatic bile ducts. Without imaging signs of loco-regional recurrence. Urinary bladder without visible parietal anomalies, uterus measuring 8/5 cm, heterogeneous structure of the myometrium, ovaries with follicles up to 15 mm, the aorta and its branches are permeable, of normal caliber. No retroperitoneal or periiliac adenopathy, free liquid collection in small amount at the level of the peritoneal recess of the bladder compared to the previous examination, Areas of intensity and extension of the infiltrative aspect of the mesenteric fat compared to the previous examination were noted. At the level of the lower aspect of the greater omentum, three nodular lesions were found with infraumbilical localization in the left paramedian.

Conclusion of evolutionary imaging was aspect of lower mesenteric fat infiltration.

The abdomino-pelvic MRI with contrast material was performed in December 2022 and showed the post-enterectomy status of terminal ileum with ileo-cecal anastomosis.

Corresponding to the changes described at the level of the lower mesenteric fat at the CT examination of November 2022, hyposignal T1/T2 signal abnormalities were visualized, highlighting at the level of the

lower aspect of the paramedian infraumbilical greater omentum on the left nodular lesions described on the CT examination with a diameter of 9 mm.

Liver with increased dimensions, right lobe 18 cm on the medioclavicular line, regular outline of the parenchyma. No suspicious of rectal parietal thickenings. Visible pelvic fluid collection at the level of the Douglas space. No suspicious signal anomalies at the level of the bone structures included in the examination.

Conclusions of the MRI examination noted: signal changes with the intake of the contrast substance visible in the lower part of the greater omentum.

Discussions

EGISTs have a very rare presentation. In a study conducted in Turkey considered to be one of the largest in this pathology, only 13 cases were encountered over a 16-year period. Patients mostly received tumor resection, similar to the cases we presented. The diagnosis of EGIST was made with immunohistochemistry from the surgical tissue. Panel of antibodies tested usually involve CD117(c-kit), CD34, SMA, S100 and desmin. Tumors are considered negative if <10% of cells are positive or positive if > 10% positive tumor cells. Mean age of diagnoses is around 60 years, localization in the mesentery being very rare, more common in the intra-abdominal cavity. Tumor mean diameter is 15 cm at the time of diagnosis. Patients can be classified based on the Miettinen criteria in high, intermediate or low risk categories. 5-year survival rate was around 40%. Other articles are citing 60% survival rates. Conflict appears when discussing pathogenesis, molecular biology in order to improve prognosis for these patients. The first mention of these tumors was made more then two and a half decades ago, but there is a need for a better follow-up and classification.

Conclusions

EGIST tumors present as large tumors localized outside the gastrointestinal tract, with a poor survival rate in cases of malignancy, scientists are interested in improving survival rate and diagnostic markers.

Informed Consent Statement: Informed consent was obtained from the patient involved in the study.

Conflicts of Interest: The authors declare no conflict of interest.

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