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GI IMAGE

Gastric Synovial Sarcoma

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Case Report

A 42-year-old male patient with unremarkable past medical history was referred to our institution for asthenia. Abdominal examination showed no abnormalities. A blood exam was carried out, which revealed hematocrit of 28% and hemoglobin level of 8.2 g/dl with an iron deficiency pattern. Due to the suspicion of gastrointestinal bleeding, a colonoscopy and upper gastrointestinal endoscopy (UGIE) were performed showing a 3 × 3-cm pedunculated lesion on the lesser curve of the stomach and on its surface, an ulcer with fibrinous fundus was observed. No evidence of any other lesion was noted on the colonoscopy. Given that the patient was not aware of the resection that needed to be performed in a lesion of this size, we decided to perform a deferred endoscopic resection. Therefore, we conducted a second UGIE in which we evidenced the formerly described lesion. By previously injecting the pedicle of the lesion with adrenaline (1:20.000 dilution), we performed the resection with a hot snare. Following this maneuver, closure of the defect was carried out by the insertion of two hemostatic clips (Fig. 1). Anatomopathological examination of the resected specimen showed a 3 × 3-cm lesion of elastic consistency. The microscopic evaluation revealed a fusocellular proliferation of monomorphic spindle cells with a mitotic count of 3/25 HPF (Fig. 2). Microscopic invasion of the lesion was reported on the resection margin. The immunohistochemical (IHC) analysis demonstrated negative CD117 (c-KIT), CD34, AML, and S100 and positive EMA, calretinin, and BCL2. Molecular biology studies (RT-PCR) evidenced rearrangement in the region of the SS18 gene in 34% of the evaluated cells. These findings are consistent with gastric synovial sarcoma (GSS).

As part of staging studies, we carried out PET, pneumo computed tomography (Pn-CT), and UGIE. No evidence of parietal thickening of the gastric wall was noted on the Pn-CT as well as no alterations in the distribution of the tracer in the PET (Fig. 3). The UGIE showed an area of cicatricial appearance located on the lesser curve of the stomach. Multiple biopsies of this area were taken and the area was marked with an endoscopic tattoo for further resection. No evidence of residual sarcoma was noted on the anatomopathological examination.

The case was presented to a multidisciplinary committee, and based on the microscopic invasion of the margin, the patient was considered a candidate for resection and underwent a laparoscopic subtotal gastrectomy. No postoperative complications were noted and he was discharged on the fifth postoperative day. No evidence of residual synovial sarcoma was identified on the anatomopathological exam as well as no clinical or imagenological recurrence during 1-year follow-up.

Discussion

Synovial sarcoma is a malignant mesenchymal tumor most commonly found in the limbs, near the knee joint.[1] Although the gastrointestinal tract is an extremely rare location for SS, this type of presentation has been previously described, and the stomach is the most frequent location along the digestive tract.[2]

UGIE is key in the evaluation of submucosal gastric tumors, and the most frequent finding in this study is a nodular lesion covered by normal mucosa. In cases of rapid growth, ulceration of the mucosa is possible and, consequently, upper gastrointestinal bleeding may develop, as it happened in our case. In order to achieve histological diagnosis, conventional endoscopic biopsy is not useful for the acquisition of a suitable

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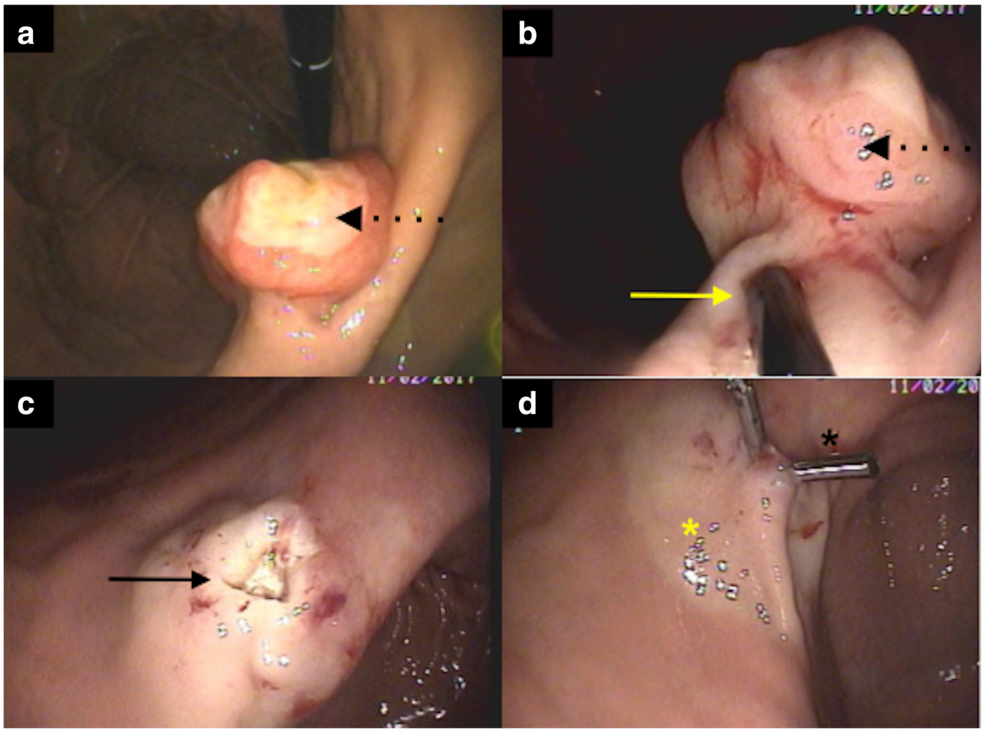

Fig. 1 Endoscopic view showing a nodular tumor located on the lesser curvature of the stomach (**a**). We carried out hot snare resection by previously injecting the pedicle of the lesion with adrenaline (**b**). Due to this maneuver, no signs of bleeding were noted (**c**) and closure of the defect was carried out by hemostatic clip insertion (**d**)

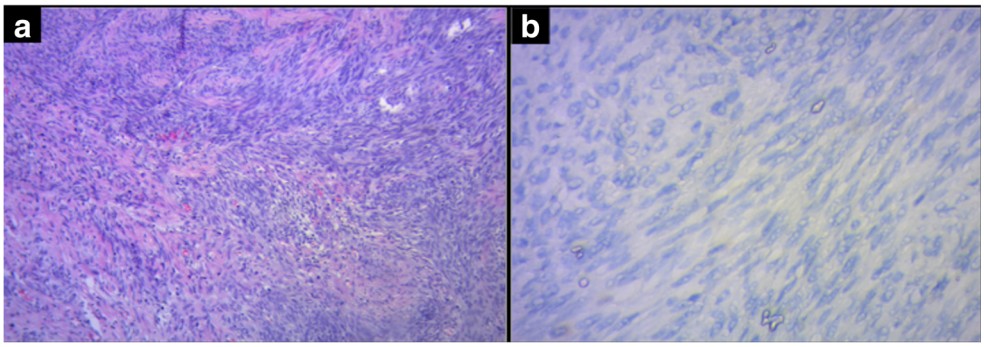

Fig. 2 Microscopic findings of the resected specimen. **a** Hematoxylin and eosin staining (magnification × 40) evidencing the tumor composed of monomorphic spindle cells. **b** Immunohistochemistry. The tumor cells were negative for CD117, CD34, desmin, and S100 and positive for calretinin and EMA

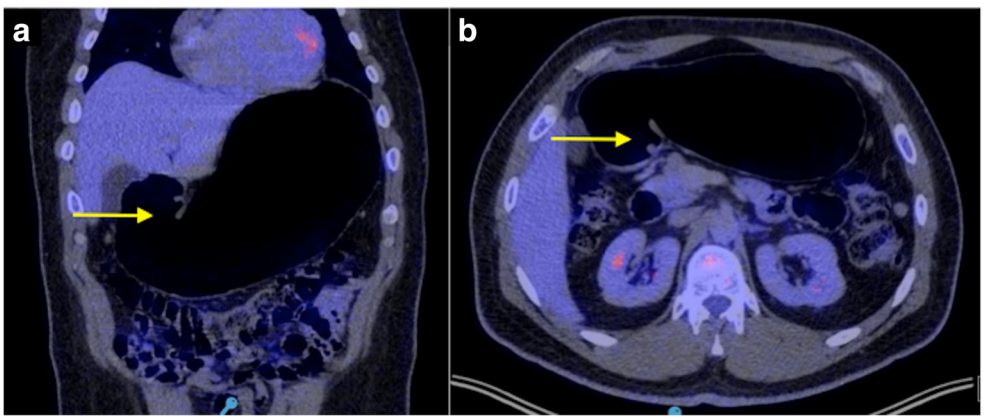

Fig. 3 PET with distention technique showing no areas of parietal thickening on the lesser curvature (yellow arrow) as well as no alterations in the distribution of the tracer in the PET

amount of tumor tissue due to the intact overlying mucosa. That was the reason why we carried out an endoscopic resection of the tumor instead of conventional biopsy. The discussion of whether endoscopic resection of GSS could be considered sufficient treatment is still open. Although in this case, the resection margin was reported with microscopic invasion and therefore, the indication for subsequent gastrectomy was clear, the aggressive behavior of sarcomas in addition to a high risk of local recurrence described in other locations makes surgical resection the mainstay of treatment of GSS.[3]

Definitive diagnosis of synovial sarcomas is achieved by anatomopathological examination followed by immunohistochemical and molecular analysis. On histological examination, it appears as a spindle cell tumor. IHC analysis shows calretinin and EMA positivity, as well as CD117, CD34, desmin, and S100 protein negativity. In order to differentiate from other c-KIT-negative spindle cell tumor-like Schwannomas, molecular techniques, such as RT-PCR, are performed and the detection of the pathognomonic t(X;18) translocation is confirmatory of synovial sarcoma.[1]

In summary, gastric synovial sarcomas are extremely rare tumors that should be taken into account in the differential diagnosis of mesenchymal gastric tumors. Based on the need to achieve R0 resection and given its aggressive behavior, surgical resection is the mainstay in the treatment of GSS.

Author's Contribution All authors have contributed to the design of the work, data acquisition and analysis data, revision for important intellectual content, and final approval of the version to be published.

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