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Small intestine gastro-intestinal stromal tumor mimicking an ovarian mass

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Gastrointestinal stromal tumors (GISTs) are rare tumors affecting the gastro-intestinal tract. These tumors tend to grow large and may elicit clinical symptoms due to their mass effect. On occasions, due to their propensity toward the pelvis, they may mimic genitourinary lesions. In this article, we present a young lady diagnosed pre-operatively to have an ovarian neoplasm which turned intra-operatively to originate from small intestine and proved histo-pathologically to be GIST. Pertinent literature and tricks to diagnose such lesions are discussed in detail.

Key words: gastrointestinal stromal tumor, ovarian tumor, surgery, diagnosis.

Introduction

Though ultrasound and MRI are considered best options for evaluation of abdominal masses, sometimes it is extremely difficult if not impossible to pinpoint precisely their origin (1). In addition to changing the technique and plan of surgery, failure to understand the origin of pathology of the tumor may affect therapeutic planning and prognostic estimates.

Despite major advances in our armamentarium for pre-operative evaluations, this misdiagnosis still happens and might be unfolded only intra-operatively(2). Here, we report a case of gastro-intestinal stromal tumor (GIST) of small intestine with pre-operative perception as ovarian tumor and then, review the pertinent literature of similar cases.

Case report

A 34 year old, married female with complaint of abdominal pain underwent evaluation. Except for anemia (Hb=9.5) and CA125=78 other markers including WBC, biochemistry, CEA, LDH, βHCG, and ROMA Index were within their normal range. Trans-abdominal ultrasound revealed a hypo-echo mass in superior part of right side of uterus extending superiorly up to the subcostal region with heterogeneous view, vascular flow, and fine septate with 80x115x72 dimensions and abundant necrosis inside. MRI reported a mixed cystic and solid lobulated mass measuring 139x195 mm with irregular thick wall and significant enhancement (figure 1). Considering ultrasound and MRI reports, the patient underwent laparatomy with the diagnosis of right ovarian neoplasm.

Intra-operatively, a large necrotic and bleeding mass originating from the small intestine antimesenteric wall and 70 cm away from the ileocecal valve was observed (figure 2). The mass was densely attached to the uterine and right adnexa. Small intestine resection and salpingo-oophorectomy were performed and the patient was delivered to the ICU where one week later, he developed fascial dehiscence repaired with tension suturing after which he spent an uneventful course till her discharge 5 days later. Two months later, she died with unknown clinical picture at home. Pathological studies revealed a high grade gastro-intestinal stromal tumor which was confirmed by immunohistochemicalstains (figures 3 and 4).

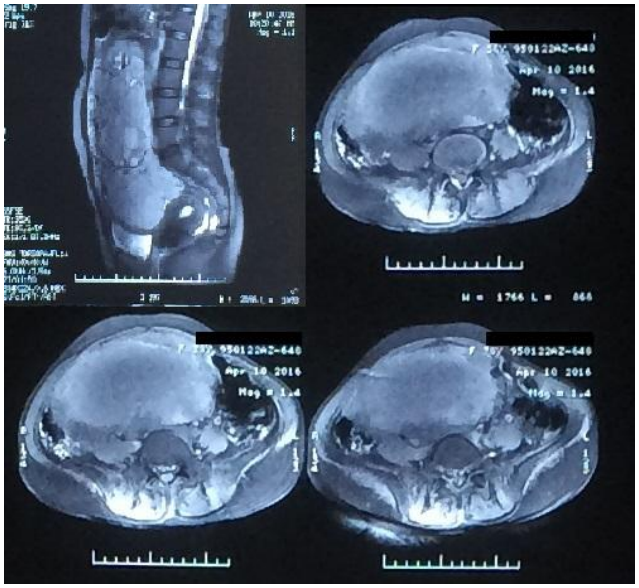

Figure 1. Pre-operative sagittal and axial abdomino-pelvic MRI.

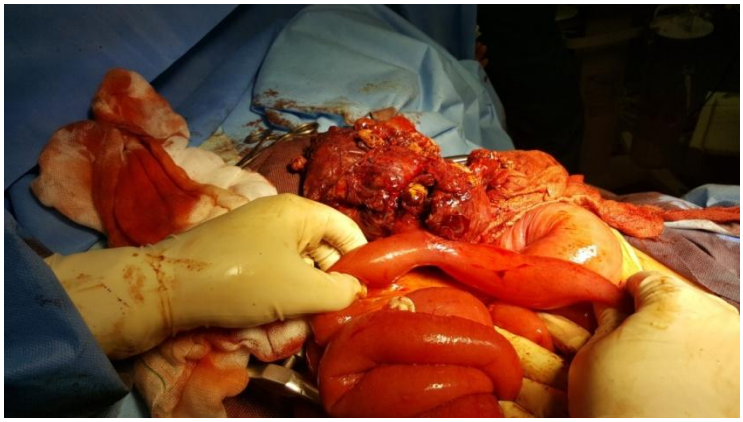

Figure 2. Intra-operative view of the tumor and its relation to the intestine.

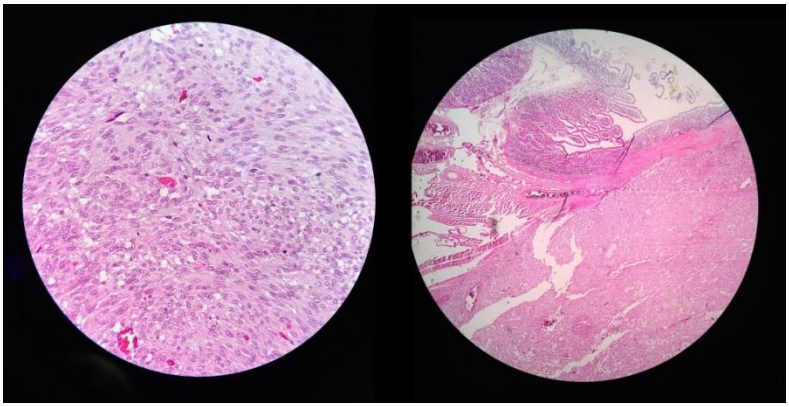

Figure 3. Pathological view under light microscope (Hematoxylin and Eosin stain).

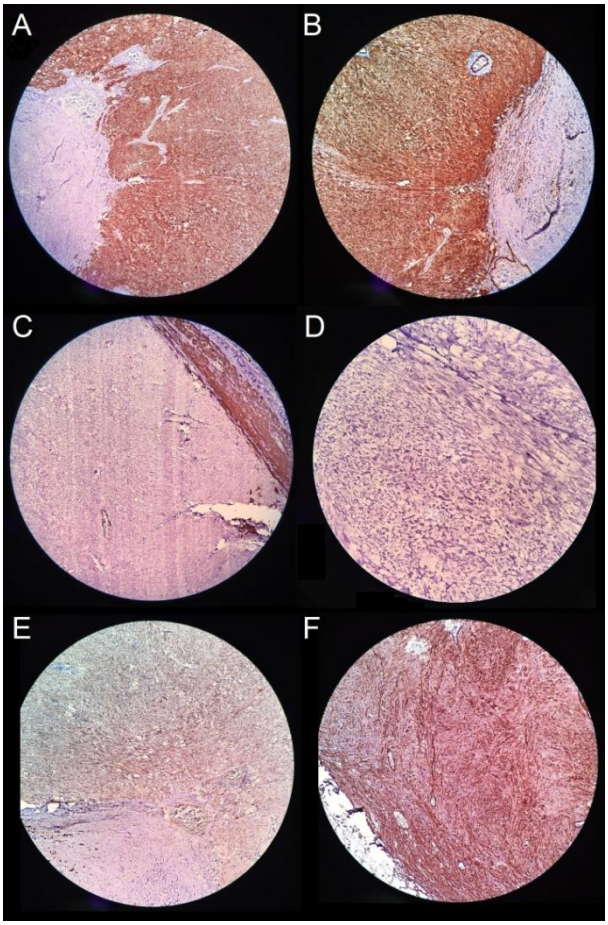

Figure 4. Immunohistochemistry views of pathology slides. Different stains were used for evaluation: A. CD117, B. CD34, C. Des, D. Ki 67, E. S100, F. SMA.

Discussion

Gastro-intestinal stromal tumors (GISTs) are uncommon malignancies compromising less than 1% of gastrointestinal tumors (3). Also, they are seen mostly after the age of 50 (4). This rarity brings them to the bottom of differential diagnosis based on pre-operative imaging especially in young patients. Therefore, there are many cases similar to our patient where a pre-operative diagnosis of gynecological malignancy, turned out to be a GIST (5, 6).

GISTs have tendency to grow large when their origin becomes difficult to determine pre-operatively. In a report by Pinto and colleagues, two cases of GISTs were reported to be mistaken pre-operatively for uterine leiomyoma and an ovarian tumor (1).In another report by Davies, a 82 year women with a pelvic mass on MRI was diagnosed pre-operatively as an ovarian tumor which later turned to be a GIST arising from proximal jejunum (7).Again, the tumor was 18 cm in diameter which clouded pre-operative findings on MRI. This further emphasizes on pre-operative diagnosis of large abdomino-pelvic masses.

These tumors may exhibit homogenous pattern on imaging evaluations but when growing larger, they tend to show heterogeneous areas corresponding to areas of necrosis. This may appear as hypoechogenicity on ultrasound (8) or mixed intensity on CT-scans in an exophytic mass with ulceration (9). Fine-cut and reconstructed CT-images may help to precisely delineate the origin of the tumor, however, little experience exists with such recommendations (9).

In conclusion, surgeons should be careful about the large pathologies found in pelvis or abdomen and before making the final therapeutic plans or surgical approaches, a definite diagnosis is warranted in most cases.

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