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Left Hypochondriac Mass with Intestinal Obstruction in a Postmenopausal Female: A Diagnostic Dilemma.

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ABSTRACT: *Clinical diagnosis of abdominal masses remains a challenge to this day; in spite of the availability of advanced imaging facilities, we fail to reach a definitive diagnosis in a few cases and have to resort to a laparotomy, which reveals unexpected findings. Ovarian remnant syndrome (ORS) is a rare condition, in which the ovarian tissue is inadvertently left behind after difficult oophorectomy. The most common pre-existing conditions associated with this complication include endometriosis, pelvic inflammatory disease, and prior abdominal surgery; as in these conditions, removal of ovarian tissue becomes difficult. This is likely due to the presence of the dense fibrotic adhesions between an ovary and the surrounding structures. This residual ovarian tissue can become functional and cystic or can develop carcinomatous changes. We present a case of a 62-year-old lady who presented with pain abdomen, vomiting and non passage of flatus and stools for the last 4 days and was diagnosed as a case of intestinal obstruction. She had multiple abdominal surgeries in the past, including cholecystectomy, appendectomy, hysterectomy, and bilateral salpingo‐oophorectomy. Clinical examination revealed a fixed intra-abdominal firm to hard large mass in the left hypochondriac and left lumbar region. CT scan of the abdomen showed a large peripherally enhancing hypo-dense lesion reaching upto spleno-renal region superiorly and inferiorly upto left iliac region with no definite organ of origin. Patient underwent exploratory laparotomy. Intra-operatively, a firm-hard, large mass of size 20 x 15 x 15 cm arising from left pelvis and extending ectopically to left hypochondriac region with adhesion and scarring of adjoining small bowel wall was present. Histopathology of the abdomino-pelvic mass was consistent with the diagnosis of ovarian remnant (fibrothecoma left ovary). ORS can be prevented with careful resection of the entire ovarian tissue during the difficulty oophorectomy so that no ovarian tissue is left behind.*

Keywords: *Exploratory laparotomy, intestinal obstruction, oophorectomy, ovarian remnant syndrome*.

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I. Introduction

The abdominal cavity is commonly described as the 'Pandora's box', as one is bound to be astonished after opening it. Abdominal masses have always been a challenge to the surgeon; the complex anatomy and the presence of major organs makes clinical diagnosis a formidable task. Ovarian remnant syndrome (ORS) is defined as the pelvic pain in the presence of histologically proven ovarian tissue after salpingo‐oophorectomy. It is a rare condition, where ovary has been incompletely resected due to dense adhesions as in endometriosis or pelvic inflammatory disease. The residual ovarian tissue can get vascularised and enlarge under the influence of the hormones or can develop carcinomatous changes.[1] Although ORS has been well described in literature, few reports has been published, describing a patient presenting with intestinal obstruction with incidental histopathological diagnosis of ovarian remnant from the resected abdominopelvic mass. We present a case of 62 years old female patient who was diagnosed with intestinal obstruction and left abdominopelvic mass. She underwent abdominopelvic mass resection along with small bowel resection and anastomosis. The histopathological evaluation of the resected mass demonstrated the presence of the ovarian remnant with carcinomatous changes.

Case Report

A 62 years old multigravida postmenopausal woman presented to the Emergency Department with complaints of persistent nausea, vomiting, abdominal pain and non passage of flatus/ stools for the past 4 days.

The abdominal pain was left- sided, sharp, constant, and non-radiating. The vomiting was non-bloody and non-bilious in nature. She had multiple abdominal surgeries in the past, including cholecystectomy, appendectomy, hysterectomy, and bilateral salpingo- oophorectomy. On admission, the patient was in significant distress, secondary to the abdominal pain. She was afebrile with temperature of 97°F, tachycardic with heart rate of 108 beats/min and hypertensive with the blood pressure measuring 206/106 mmHg. Her abdomen was distended with hyperactive bowel sounds. Physical examination revealed a large mass in the left hypochondriac and lumbar region, measuring around 12 × 15 cm; it was a smooth swelling, firm to hard on palpation and fixed. Borders were well defined except the lower border, which could not be palpated. The patient was subjected to an ultrasound of the abdomen which showed a well-defined solid-cystic lesion with mixed echogenicity in the left iliac fossa extending up to the left hypochondrium measuring about 08×12×15 cm. CT scan of the abdomen showed a large peripherally enhancing ill-defined hypo dense lesion size 13×14×15 cm reaching upto spleno-renal region superiorly and inferiorly up to left iliac region with no definite organ of origin (Fig. 1). There was dilatation of the jejunum and proximal ileum with multiple air fluid levels consistent with intestinal obstruction. Distal small bowel loops were collapsed, and there was a stricture segment noted in the small bowel. The decision was made to proceed with exploratory laparotomy. A large firm-hard peduclated mass of size 20 x 15 x 15 cm arising from left pelvis and extending ectopically to left hypochondriac region with adhesion and scarring of adjoining small bowel wall was present (Fig.2). Adhesions to the abdominal wall musculature were present anteriorly, laterally and posteriorly. The small bowel was extremely dilated throughout its proximal two third. There was a stricture identified in the proximal ileum with an adhesive band, causing near complete obstruction. The abdominopelvic mass was resected at the peduncle. The adhesions and the obstructed segment of the small bowel were resected followed by functional end to end re-anastomosis of the small bowel. She was discharged home on postoperative day 5 in afebrile condition, tolerating regular diet, and having bowel movements. Histopathology of the resected abdominopelvic mass confirmed the presence of ovarian remnant (fibrothecoma left ovary) [Fig. 3].

II. Discussion

The true incidence of ORS remains unknown. The reported literature is limited to few case reports and case series. It occurs after the ovarian tissue is left inadvertently in the pelvis after difficult oophorectomy. This residual ovarian tissue may remain functional and can undergo cyclical or carcinomatous changes. ORS should not be confused with two similar and closely related entities including "residual ovarian syndrome" and "supernumerary ovary syndrome." "Residual ovarian syndrome" is reserved to describe chronic pelvic pain associated with intentionally left normally vascularized ovarian tissue after partial oophorectomy. The "supernumerary ovary syndrome" refers to the embryological development of more than two ovaries [2]. ORS is most commonly associated with pelvic endometriosis, pelvic inflammatory disease, and previous surgery (most commonly appendectomy). Our patient also had multiple prior abdominal surgeries, thus increasing her risk for the development of ORS. Additional risk factors include inflammatory bowel disease and pelvic (uterine or ovarian) neoplasms, and ligation of the infundibulopelvic ligament within 2 cm of the ovarian margin [3]. The ovarian stroma can extend microscopically into the infundibulopelvic ligament beyond the visual ovarian margins. Most cases reported in literature occurred after hysterectomy and bilateral salpingo-oophorectomy, however few cases have been reported after unilateral oophorectomy. The clinical diagnosis is often difficult due to nonspecific clinical symptoms. It is most commonly seen in young premenopausal age group, with typical presentation of chronic pelvic pain within 5 years of oophorectomy. The pain is typically constant, however, can be cyclical. Additional clinical symptoms include dyspareunia, dysuria, and pain with defecation, vaginal bleeding, or an asymptomatic pelvic mass. Reported literature revealed the development of ureteric obstruction secondary to residual ovarian tissue and implantation of ovarian tissue in the anterior abdominal wall at the site of port insertion for initial planned oophorectomy [4]. In addition, adenocarcinoma arising within the ovarian remnant has also been reported [5]. A study by Satoshi et al. described women who developed rare primary ovarian clear cell carcinoma in the ovarian remnant after she had total abdominal hysterectomy and bilateral salpingo- oophorectomy for endometriosis [6]. The radiological literature describing the CT scan findings of the ORS is sparse. Ultrasonographic findings are more often described. The most common ultrasound finding of ORS is cystic pelvic mass. A rim of vascularised ovarian tissue when present could help in suggesting the diagnosis; however, vascularized scar tissue can have a similar appearance. Additional ultrasound finding includes complex multiseptated cystic mass or solid pelvic mass, which can be difficult to differentiate from neoplasm's [7]. These ultrasound findings are nonspecific and can be confusing given the history of prior oophorectomy. ORS should be considered in differential diagnosis in patients with pelvic pain and pelvic mass after oophorectomy, especially in patients with a history of pelvic surgeries before oophorectomy, and history of difficult oophorectomy secondary to pelvic adhesions. The residual ovarian tissue is most commonly found within the pelvis and can be adherent to the small bowel, large bowel, rectum, vaginal cuff, urinary bladder and ureter, uterosacral ligament, and pelvic sidewall. A serum follicular stimulating

hormone levels in premenopausal range (<40 IU/dl) after bilateral oophorectomy supports the diagnosis of ORS; however, elevated (>40 IU/dl) serum follicular stimulating hormone levels does not exclude the diagnosis [8]. Confirmation of suspected ORS in a patient with negative initial radiological imaging studies can be achieved by stimulation of ovarian tissue with clomiphene citrate followed by repeat imaging studies. This may also facilitate in the easy intraoperative identification and excision of remnant ovarian tissue. Since our patient presented with sign and symptoms suggestive of acute intestinal obstruction, a contrast- enhanced abdominal and pelvic CT scan was performed. Due to its location and presence of mass in close proximity to site of the intestinal obstruction, our differential considerations were mesenteric carcinoid, sclerosing mesenteritis, and mesenteric fibromatosis. However, on exploration and pathological examination, the mass was ovarian remnant. We present a unique case of ORS, where the patient presented with a large hypochondriac mass and intestinal obstruction and on histopathological evaluation, ovarian remnant was diagnosed. One case series by Nezhat et al. [8] reported the identification of ovarian remnant tissue on bowel requiring bowel resection, however, none of the patients in their series presented with intestinal obstruction. Currently, the treatment of choice is laparoscopic or robotic assisted surgical resection [3, 9]. However, the surgical resection can be difficult secondary to pelvic adhesions and may require extensive meticulous dissection of retroperitoneum, bowel, pelvic sidewall, ureter, or urinary bladder depending on the location of the ovarian remnant. If the remnant tissue is embedded within the bowel, urinary bladder, or ureteric wall, it can necessitate the partial surgical resection of the involved organ [10, 11]. Ovarian remnant excision should be performed by a surgeon with the requisite skill to perform this technically challenging procedure. Due to the potential risk of development of malignancy, currently, it is recommended that the ovarian remnant when identified should always be excised.

III. Conclusion

ORS is an uncommon complication of difficult oophorectomy. The preoperative diagnosis is challenging due to nonspecific clinical symptoms and imaging findings. Therefore, ovarian remnant should be considered in differential diagnosis of a patient, presenting with chronic pelvic pain and abdomino-pelvic mass with the history of multiple surgeries or difficult oophorectomy.

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FIGURES

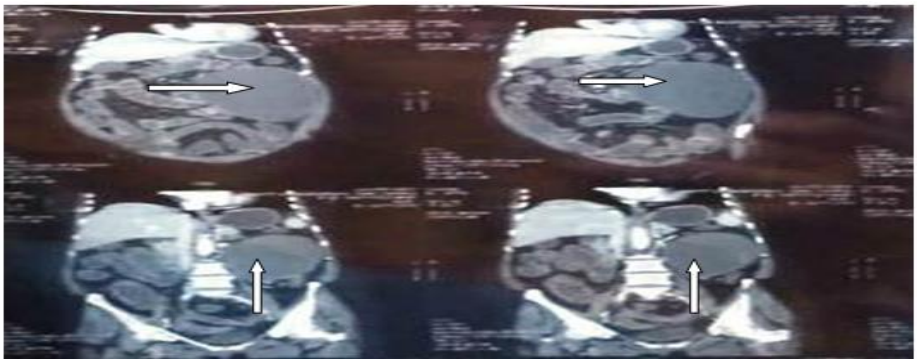

Figure 1- (Saggital view) CT evaluation suggestive of large peripherally enhancing ill-defined hypo-dense lesion of size 13×14×15 cm reaching up to spleno-renal region superiorly and inferiorly up to left iliac region with no definite organ of origin.

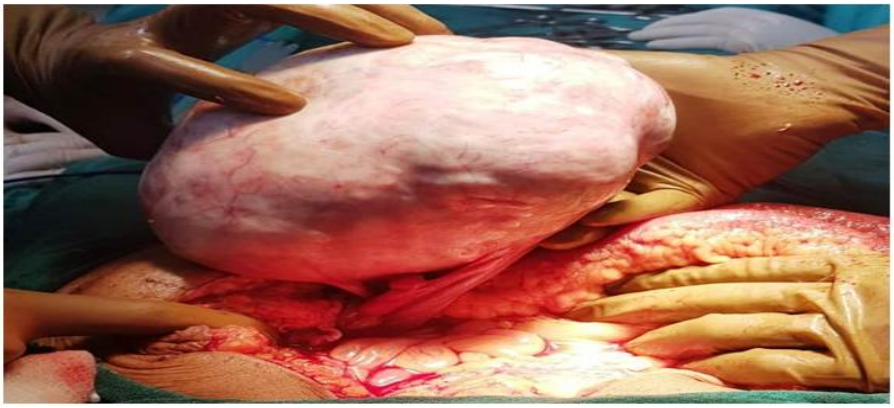

Figure 2- A large firm-hard peduclated mass of size 20 x 15 cm arising from left pelvis and extending ectopically to left hypochondriac region with adhesion and scarring of adjoining small. bowel wall.

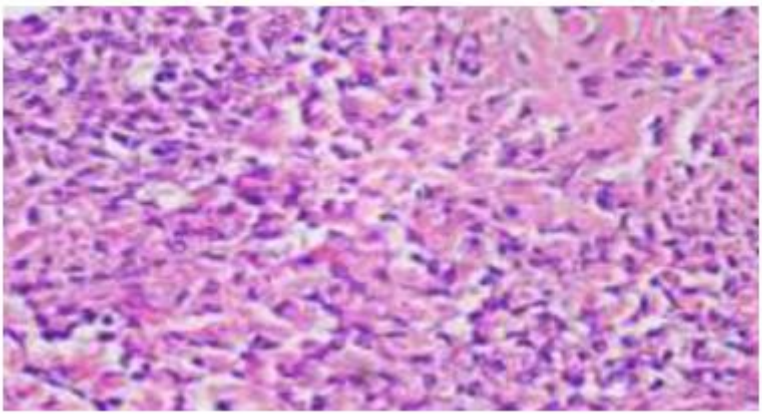

Figure 3: Histopathology of ovarian fibrothecoma

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