Case Series

Haemorrhagic Ovarian Cysts in females with inherited bleeding disorders

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Introduction

Inherited bleeding disorders in females are underappreciated. Inadequate awareness and exposure can partially be held responsible. This ultimately translates into inadequate management algorithms. Females with inherited bleeding disorders have clinical manifestations very much akin to their male counterparts with the same diagnosis. Additionally, these females can have manifestations which are very much specific to female genital tract. This case series highlights an unusual manifestation in this cohort of female patients which is not represented properly in medical writings.

Case 1

A 20 year old female, diagnosed case of Glanzman’s Thrombasthenia (platelet function defect), presented with severe abdominal pain and vomiting in emergency department. Ultrasound pelvis revealed solid mass in pelvis (Figure 1). CT Scan pelvis (with I/V contrast) showed a large mixed density hyperdense mass in mid abdomen/pelvis. It measured about 10.5 X 6.4 cm. It showed fine septae. The density was about 78 HU in plain scan and did not change significantly in post contrast scan. No areas of calcification were noted. Considering the age of patient appearance was labeled as suggestive of haemorrhagic cyst (Figure 2). Another cyst was noted in the right ovary. It measured about 38 X 37 mm in size. No solid component was noted in it. The right ovary cyst was labeled as simple cyst ovary. The patient was managed conservatively on DDAVP and platelet concentrates. She responded well to the treatment.

Case 2

A 23 year old female presented to surgical emergency with acute abdominal pain. Emergency laparotomy was performed. A cyst was found in the ovary. Histopathological examination of the cyst revealed haemorrhagic luteal cyst. After few months she again developed acute abdominal pain. This time she presented to gynae emergency. Laparotomy was performed. Cyst was found and histopathological examination revealed ovarian cyst. Meanwhile her younger sister had severe menorrhagia. Her blood counts revealed platelet counts of 52 X 10^9/l. At this time the retrospective analysis of the blood counts of elder sister (with a diagnosis of haemorrhagic cysts) also revealed consistent thrombocytopenia in her blood counts. Blood film examination of both sisters revealed giant platelets. Platelet aggregation studies of both sisters were consistent with Bernard Soulier Syndrome (Platelet Aggregation Defect).

Case 3

A female child, at the age of 6 years, presented with bleeding from teeth. The bleeding was severe and failed to stop by simple measures. Her coagulation profile revealed prolonged Prothrombin Time (PT) and Activated Partial Thromboplastin Time (APTT) with normal Fibrinogen. On mixing studies and Factor Assays, diagnosis of Factor V deficiency was established. At the age of 16 years she started having mid cycle pains. She also developed complaint of abdominal pain, due to haemo-peritoneum. Laparotomy was done. Three months later she again developed abdominal pain and was operated once again. She was put on oral contraceptive pills (Tab Famila 1 X O.D) to have non-ovulatory cycles.

One year later she got married and
gynaecologist advised her to stop tablet Famila as she was keen to have children.

Fig 1: Ultrasound Abdomen & Pelvis in a case of Haemorrhagic Ovarian Cyst showing a solid mass in pelvis

After six months she presented to gynaec emergency with colicky pain in the lower abdomen. On admission her vital signs were stable, abdomen was distended and there was tenderness in lower abdomen. Bowel sounds were present and normal.

Fig 2: CT Scan Pelvis: Showing large mixed density hyperdense mass in mid abdomen/pelvis

There was no evidence of external bleeding and vaginal gynaecological examination was unremarkable. Laparotomy was done. She took oral contraceptives for almost 9 years but she wanted to conceive, stopped taking oral contraceptive pills and started taking Tab Clomid. Ultrasound examination revealed left multicystic ovary. Patient was counseled about management options and poor prospective of in vitro fertilization. She restarted Tab Famila.

Discussion

While women with bleeding disorders are at risk for the same obstetrical and gynaecological problems that affect all women, they appear to be disproportionately affected by conditions that manifest with bleeding. In women with inherited bleeding disorders, menorrhagia may be the most common manifestation, but it is not the only reproductive tract abnormality. Women with bleeding disorders appear to be at an increased risk of developing haemorrhagic ovarian cysts and possibly endometriosis. As they grow older, they may be more likely to manifest conditions which present with bleeding such as fibroids, endometrial hyperplasia and polyps. Women with bleeding disorders are more likely to undergo a hysterectomy and more likely to have this operation at a younger age. During pregnancy, they may be at great risk of miscarriage and bleeding complications. At the time of child birth, women with bleeding disorders appear to be more likely to experience postpartum haemorrhage, particularly delayed or secondary postpartum haemorrhage. Vaginal or vulvar haematomas, extremely rare in women without bleeding disorders, are not uncommon in this cohort.

The female patients in reproductive age, with inherited bleeding disorder have twice higher incidence of haemorrhagic ovarian cysts in comparison to the general population. These cysts are due to excessive bleeding into the corpus luteum at the time of ovulation, and rupture of these cysts may result in haemoperitoneum. Recurrent and excessive haemoperitoneum and secondary increased production of fibrin in the peritoneal cavity can be a major cause of increased formation of pelvic adhesions, external occlusion of the fallopian tubes, and destruction of the ovarian tissue, and could lead to reduced fertility in these patients. Majority of these complications require medical or surgical intervention.

In medical literature, out of inherited bleeding disorders, cases of von Willebrand disease with haemorrhagic ovarian cysts are reported more frequently, but the etiology and pathogenesis easily explains the likelihood of this complication in all groups of inherited bleeding disorders in females.

In these cases bleeding in ovaries typically occurs few days after ovulation during the stage of vascularization when the thin walled capillaries invade the granulosa cells
from the theca interna. As a result of the heavy haemorrhage into the cyst, the intracystic pressure rises and rupture of the cyst occurs.

Interestingly, in women with inherited bleeding disorders, only a minority of ovulations are associated with haemoperitonium. The explanation could lie in the fact that in some cycles, particularly in those following an anovulatory one, the Graffian follicle has greater vascularity because it is larger due to the higher levels of gonadotropin hormones in those cycles.

The blood in the abdominal cavity irritates the peritoneum, and this usually initiates the clinical symptoms of acute abdomen. Secondary production of fibrin in the peritoneal cavity increases the risk of formation of adhesions, like those seen in endometriosis that could lead to the decreased fertility in those patients. Furthermore, excessive and recurrent formation of the haemorrhagic cysts and surgical interventions lead to the obstruction of the remaining healthy ovarian tissue. In those patients, the prevention of recurrence of haemoperitonium is essential to avoid massive bleeding and life threatening bleeding and to preserve fertility.

Long-term hormonal suppression of ovulation and subsequent formation of the ovarian cysts with the use of the combined oral hormonal contraceptive pills or gonadotropin-releasing hormone analogues successfully prevented recurrence of ovarian haemorrhage in majority of cases. In platelet function defects and in von Willebrand disease, I-desamino-8-D-arginine vasopressin can be helpful.

This case series reflects that a delay in diagnosis can lead to an inadvertent surgery in many of these cases. This can ultimately cause problems with fertility. The conservative management or at the most laparoscopic intervention with an objective to preserve fertility can be a plausible answer in many cases of this nature.

References