

Case report: Large ovarian cyst causing limb ischaemia

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Abstract

We present and case of large ovarian cyst causing a complete occlusion of the pelvic vessels. 53-year-old female complained of acute ischaemia of her lower limbs 5 days after minor limb injury. She was treated as cellulitis initially. Then five days later suffered from severe limbs pain; no bridging anticoagulation therapy was initiated. CT angiogram showed occlusion of all crural arteries on both sides. This was due to compression and pressure of large right ovarian cyst. The patient has amputation of the right limb. This case demonstrate importance of early recognition for large intra-abdominal causes for vascular complications.

Keywords: intra-abdominal, ovarian, ischaemia

Introduction

Although ovarian cysts are commonly observed in women, those with sizes huge enough to fill in the pelvic cavity are rare. These giant cysts may not cause a symptom until reaching a certain size. On the other hand, depending on the localization, size, and presence of compression, they may cause acute abdomen (bleeding, rupture, and obstruction) leading to such symptoms as abdominal pain, nausea, vomiting, and constipation. Gynecologic disorders presenting with acute abdominopelvic pain incidence have been reported to comprise 1.5% of office-based visits and 5% of emergency department admissions^[1, 2]. Radiologic tools are essential for diagnosis.

The WHO classification of 2014 divides the surface epithelial tumors of the ovary into benign, borderline and malignant and the different histological types into serous, mucinous, endometrioid, clear cells, Brenner and seromucinous^[3]. Borderline ovarian tumors are characterized by a smaller aggressiveness when compared with other epithelial forms^[4] and are currently defined "atypical proliferative epithelial tumors." This type of tumor usually occurs in the third or fourth decade and is unilateral in 80% of cases^[5]. According to the tumor biology and behavior, the prognosis is usually favorable, but life-threatening outcomes may be observed by the compression on the surrounding structures when the tumor reaches large dimensions, leading to unexpected death.

Critical Limb Ischemia (CLI) is a severe obstruction of the arteries which markedly reduces blood flow to the extremities (hands, feet and legs) and has progressed to the point of severe pain and even skin ulcers or sores. Ischemia is a serious condition in which there is inadequate blood flow and oxygen to a specific part of the body. It can occur anywhere blood flows including the limbs, heart, brain, or intestines. It is generally caused by a narrowing or blockage of an artery. Ischemia is a severe condition that can cause tissue damage and loss of limbs. This condition will not improve on its own and requires appropriate medical attention^[6].

Case Report

53 years old female P3+0, with history of right foot injury, presented to emergency with swollen red limb. Patient also complained of Nausea and vomiting. After assessment and X-ray that excluded fractures, she was treated as cellulitis with oral antibiotics and sent home. Five days later she presented with increased swelling and inability to walk because of severe and slight right and left limbs pain respectively. Doppler ultrasound of the right lower limb showed appearance suggestive for deep venous thrombosis extending from the proximal femoral vein to popliteal vein in the right lower limb.

Following the US results, CT angiogram of both lower limbs performed, that showed occlusion of all crural arteries on both sides, flow reconstituted distal to the occlusions, appearance suggestive for embolus with central source. Both limbs were swollen worse on the right with feature suggestive for right-sided DVT, but impossible to exclude compartment syndrome on CT, there is significant oedema of the musculature and subcutaneous tissues of the right calf. Also CT showed very large multiseptated cystic mass is incompletely imaged, compress iliac veins and arteries and recommendations by radiologist to obtain pelvic MRI.

MRI pelvis showed, 12.3*22.9 cm cystic pelvic mass which is likely ovarian in origin containing multiple enhancing septation. Unchanged mild compression of the abdominal aorta and pelvic veins. All tumor markers including CA125 were within normal limits.

As arterial and venous clots were identified in the right lower limb with acute forefoot ischaemia. Decision had been made to book patient for total abdominal hysterectomy with bilateral salpingo-oophorectomy. Prior to surgical intervention inferior venaocaval filter placed temperately as per haematology review.

Total abdominal hysterectomy and bilateral salpingo-oophorectomy, omentectomy and appendectomy and herniorrhaphy performed. The ovarian cysts was removed with right ovary intact (Fig 1). Histological report showed largely necrotic complex ovarian cyst impairing pathological assessment, within limits of viable tissue present for evaluation. The features are most suggestive of a mucinous cystadenoma.

Omentum with mature adipose tissue with foci and necrosis but no evidence of malignancy. Hernial sac tissues showed focal inflammation.

Post hysterectomy, patient had right below knee limb amputation due to limb ischemia and necrosis. Post-operative recovery was good and patient discharged after 13 days post amputation. Reviewed 6 weeks post hysterectomy and was fully recovered from operation with good wound healing.



Fig 1

Discussion

Mostly Cysts originating from the ovary are observed closely [7, 8]. Mainly these cysts are asymptomatic. There is no reports for large ovarian cysts. Attempt to drain the cysts should be avoided as possible as cardiac failure, dyspnoea and pulmonary oedema have been described [9]. The option to drain the cyst was not considered due to complexity of the cyst.

In case of acute obstruction of the aorta with thrombus, blood flow into the lower extremities is decreased, causing pan-ischaemia. In physiology and anatomy studies the cells damage of the muscle occur after 6 hours of complete ischemia. Toxins released by dead cells would lead to multiple organs failure and death [10].

Retrospectively, the symptoms of nausea and dizziness in the supine and right position and preference to sleep on the left side were similar to the vena cava syndrome in pregnant women. But the haemodynamic effects were not interpreted before operation.

It's very difficult to calculate the pressure created by the cyst. The force toward the anterior abdominal wall, the aorta, vena cava and the spine, is formed by the tension inside the cyst. Thus, as many variables are missing it's very difficult to assess the compression on the aorta. Also specific gravity (sg) is unknown for the cyst; however, this can be done based on an sg to approximately 1.025 using an average CT Hounsfield unit (HU)-value of 25 [11]. Pressure of 8 kg, this combined with abdominal wall tension, have great effect on the aorta and IVC.

Conclusion

In conclusion, limb ischaemia pathologies due to giant ovarian cysts should be considered in women admitted to emergency service with symptoms of acute limb ischemia.

Acknowledgements

Main author who did write this case would like to thank Dr. Hassan Rajab for contribution as the lead of the gynecology clinic in Beaumont hospital and Feras J Elakharouf and Shayi Dezayi the reviewer of the paper before submission.

Funding: No funding sources

Conflict of interest: NO conflict of interest include relevant financial, personal, political, intellectual or religious interests.

Ethical approval: The study was approved by the Institutional Ethics Committee Patient consent was obtained from patient herself

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