

Successful Management of a Rare Case of Ruptured Ovarian Artery Aneurysm by Coil Embolization

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About the Author



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Introduction

Ruptured ovarian artery aneurysms are extremely rare and usually occur during peripartum or early postpartum periods [1–4]. It usually occurs in multiparous women and in postpartum period. An association with uterine fibroids has been noted [5]. This was a case of ruptured ovarian artery aneurysm which was managed successfully by coil embolization (Cook Medicals).

Case Report

A 35 year-old female presented to casualty after 3 days of giving birth to a healthy baby via normal vaginal delivery

(third child). She had complained of left-sided abdominal pain without any vomiting, dysuria or altered bowel habits.

On examination, she was distressed and anemic. Her hemoglobin level was 6.8 gm%. Her pulse rate was 110/min and blood pressure was 110/70 mmHg along with signs of peritonitis. Her coagulation profile was within normal limits.

Ultrasonography of abdomen revealed left retroperitoneal hematoma with a possibility of psoas abscess. Contrast enhanced computed tomography (CT) scan of abdomen showed left psoas and left renal paracolic compartment hematoma with a possibility of ovarian aneurysm. For further confirmation, CT Angiography was performed which showed left ovarian artery pseudoaneurysm (1.46 × 1.38 cms) at L4 vertebral level with large left retroperitoneal hematoma (Fig. 1).

She was taken for exploratory laparotomy with adnexectomy but she continued to have peritoneal bleeding and symptoms. Her hospital course was complicated with wound dehiscence.

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She was referred to our department for expert opinion and needful. Emergency peripheral angiography was performed which revealed active contrast extravasation at the fourth lumbar vertebra level; this was identified as an aneurysm leaking from left ovarian artery. After detailed evaluation, she was taken for coil embolization of ovarian artery aneurysm. The procedure was done uneventfully (Figs. 2–4) and she recovered well.



Fig. 1 CT angiography abdomen showing left Ovarian artery aneurysm

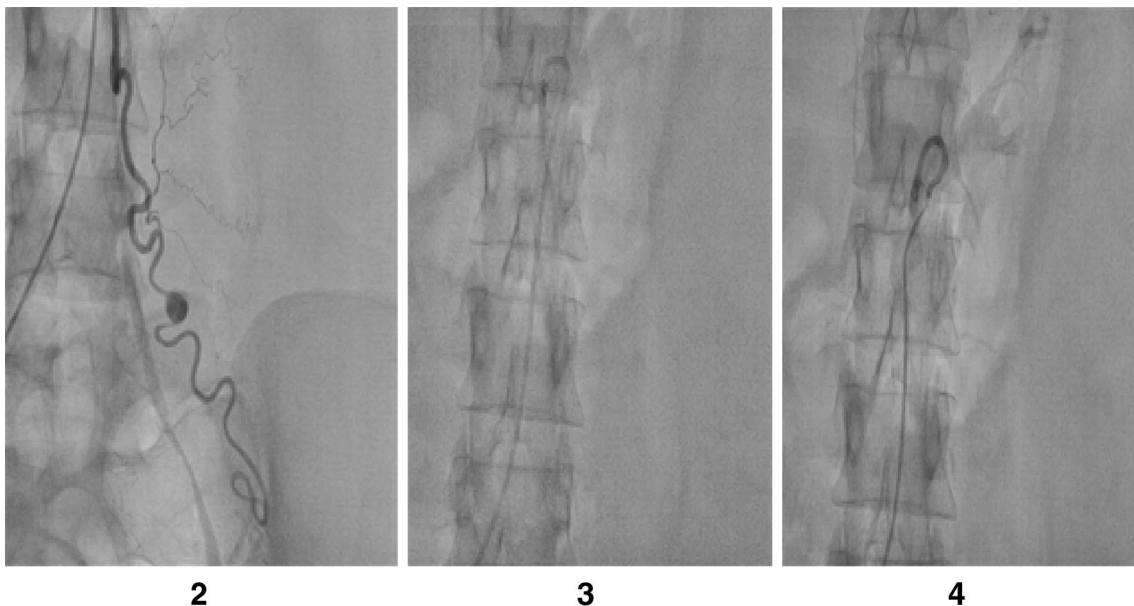
Now recently she was followed up after 1 year of the coil embolization. Her general condition was good without any symptoms.

Discussion

In their review of ruptured arterial aneurysms, Barret et al., listed in decreasing order of frequency those of intracranial, aortic, splenic, renal, and ovarian artery origin [6]. Of these, the ovarian artery location is by far the least frequent, with only 12 cases recorded in the literature [7]. Most cases were related to pregnancy and occurred during the peripartum or postpartum periods. Successful management of ruptured ovarian artery aneurysm by embolization is reported in only two cases in the literature [4, 5].

Various hemodynamic and hormonal factors have been suggested for the pathogenesis [1–3]. During pregnancy, cardiac output and blood volume increases and there is systemic hypertension. Also, enlargement of the uterus with dilatation of the pelvis arteries cause increased uterine blood flow. Burnett and Carfrae [1] have postulated that during the normal process of involution that occurs during the postpartum period, a segment or segments of the ovarian circulation may fail to involute, predisposing to aneurysm formation in subsequent pregnancy.

Concerning hormonal factors, Barret et al. [6] noted that the pregnancy-related alterations in steroid hormones may cause a variety of arterial changes, including intimal hyperplasia, thickening of the media associated with



Figs. 2–4 Coil embolization done via *right* femoral artery approach. *Left* ovarian artery hooked with picard 5f catheter. Figure 2 shows the ovarian artery aneurysm with extravasation of contrast. Figure 3

shows the delivery of the embolization coil (cook) (3 mm x 3 cm). And final result is the complete occlusion of the *left* ovarian artery (Fig. 4)

smooth muscle hyperplasia, fragmentation of reticular fibers, and loss of normal corrugation of elastic fibers.

The most common presentation of ruptured ovarian artery aneurysm is the acute flank pain or abdominal pain [2, 3]. Ultrasonography is a safe and rapid method of detection of intraperitoneal effusion [4]. CT or magnetic resonance imaging can then be used to search for the underlying cause, which is usually an intraperitoneal hematoma [4, 5]. In our case, intraperitoneal hematoma was first shown by ultrasonography, and CT scans and angiography led to the correct diagnosis.

A ruptured ovarian artery aneurysm may be surgically treated by adnexectomy or ligation proximal and distal to the rupture [2, 6]. Arterial embolization is now developing as a safe and effective alternative to surgery [4, 5].

Conclusion

Although rupture of an ovarian artery aneurysm is extremely rare, it is life-threatening and is often associated with a non-specific clinical picture. Awareness of this entity and a high index of suspicion may lead to early diagnosis and treatment. Contrast CT is an excellent imaging technique for rapid and safe evaluation and may be the examination of choice for such patients. These patients can be managed successfully by surgery or percutaneously by coil embolization.

Compliance with ethical requirements and conflict of interest That this case study has been approved by the institute ethics committee and has therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki and its later amendments. The patient gave informed consent before including in this case study. The author do not have any conflict of interest.

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