კლინიკური შემთხვევა

MANAGEMENT OF UTERINE ARTERY PSEUDOANEURYSM IN A 33-YEAR-OLD FEMALE THROUGH SELECTIVE ARTERIAL EMBOLIZATION (SAE) - CASE REPORT

George Jinchveladze, Lela Tandashvili, Sandro Tsikarishvili

[1]*Caucasus Medical Centre*

Contact person: George Jinchveladze, gioangio@gmail.com

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Rezume

Background: Uterine artery pseudoaneurysm (UAP) is a rare but serious complication that can occur following pelvic surgery, including cesarean sections and hysterocopy. It presents a risk of severe hemorrhage and requires rapid diagnosing and intervention.

Case Presentation: A 33-year-old female with a history of cesarean section and rescent hysteroscopy presented with intermittent, heavy vaginal bleeding and mild pelvic pain. Four weeks prior, she had undergone hysteroscopy. Imaging with transvaginal ultrasound revealed a 2 cm anechoic cystic structure with a "yin-yang" sign, suggestive of a uterine artery pseudoaneurysm. Confirmatory imaging with computed tomography angiography (CTA) and digital subtraction angiography (DSA) was performed.

Management: The patient was urgently referred for selective arterial embolization (SAE), a minimally invasive procedure. Under conscious sedation, catheterization was performed via the left brachial artery, and selective angiography confirmed the presence of a pseudoaneurysm arising from the left uterine artery. Embolization with microcoils effectively occluded the pseudoaneurysm. Post-procedural recovery was uneventful, with resolution of symptoms and normalization of hemoglobin levels.

Outcome: At one-year follow-up, the patient reported complete resolution of symptoms and had no evidence of residual or recurrent pseudoaneurysm on repeat imaging. Her hemoglobin levels had normalized, and she was advised on the importance of close follow-up for future pregnancies.

Conclusion: Selective arterial embolization is an effective and minimally invasive treatment for uterine artery pseudoaneurysms, offering high success rates while preserving fertility. This case underscores the importance of considering UAP in the differential diagnosis of abnormal uterine bleeding, particularly following recent pelvic surgeries. Early diagnosis and intervention are crucial to prevent life-threatening complications. Further research is warranted to refine management strategies and understand long-term outcomes for patients with UAP.

Key words: Uterine artery pseudoaneurysm, endovascular surgery

INTRODUCTION

Patient Information:

- Age: 33 years
- Gender: Female
- Gravida/Para: G2 P1

CLINICAL PRESENTATION:

A 38-year-old female presented to the emergency department with complaints of intermittent, heavy vaginal bleeding that had persisted over the past two weeks. The bleeding episodes were described as sudden, profuse, and unrelated to her menstrual cycle. Additionally, she reported mild, cramping pelvic pain but denied any fever, chills, or signs of infection.

The patient had undergone hysteroscopy four weeks prior due to fetal distress. The immediate postoperative period was unremarkable, and she was discharged home on the third postoperative day. Her past obstetric history included one previous full-term cesarian delivery.

On presentation, the patient appeared mildly pale but was hemodynamically stable with a blood pressure of 100/70 mmHg, heart rate of 98 beats per minute, and a respiratory rate of 17 breaths per minute. She was afebrile and did not exhibit signs of acute distress. Abdominal examination revealed a well-healed lower transverse cesarean section scar. Pelvic examination revealed active vaginal bleeding, although the origin of the bleeding could not be identified on initial inspection.

INVESTIGATIONS:

Laboratory investigations revealed a hemoglobin level of 9.5 g/dL, indicating mild anemia likely secondary to ongoing blood loss. The patient's platelet count and coagulation profile were within normal limits, with no evidence of coagulopathy. Given the history of cesarean section and the clinical presentation, an urgent transvaginal ultrasound (TVUS) was performed.

TVUS revealed a well-defined, anechoic, cystic structure measuring approximately 2cm in diameter within the myometrium, adjacent to the cesarean scar. Color Doppler imaging demonstrated a characteristic "yin-yang" sign, indicative of bidirectional blood flow within the structure. This finding was highly suggestive of a uterine artery pseudoaneurysm (UAP), a rare but serious vascular complication.

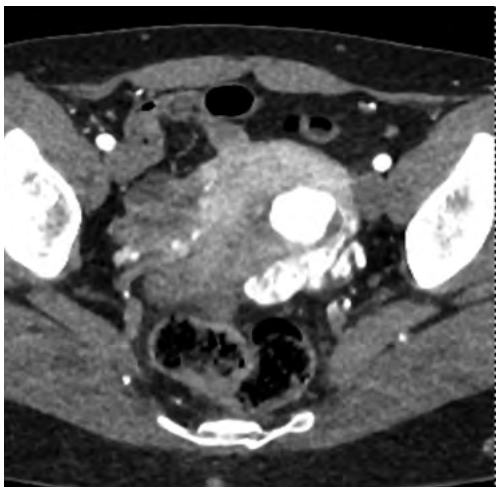


Figure 1.

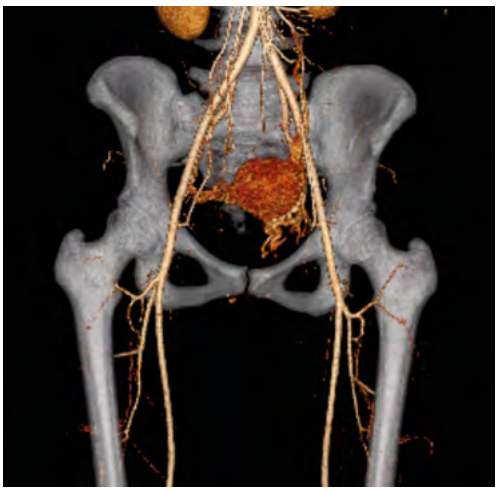


Figure 2.

DIAGNOSIS:

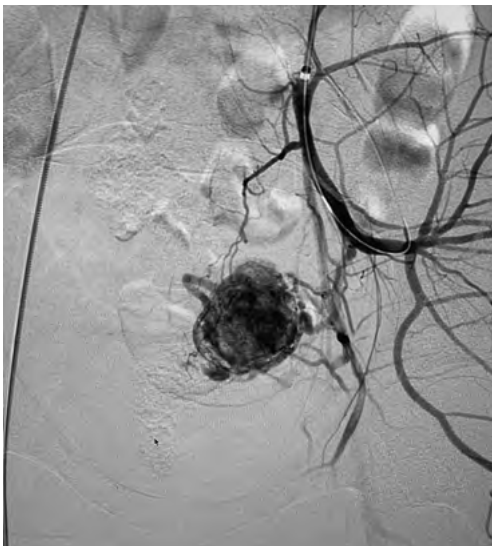
A diagnosis of uterine artery pseudoaneurysm was made based on the clinical and radiological findings. Ct scan and DSA is referred to be gold standart. UAPs are false aneurysms, where the arterial wall is disrupted, and the blood is contained only by the surrounding tissues, leading to the formation of a pulsatile hematoma. This condition can result in life-threatening hemorrhage if not promptly identified and managed.

MANAGEMENT:

To avoid potential risk of severe hemorrhage, the patient was referred urgently catheterisation laboratory for selective arterial embolization (SAE), a procedure that is both diagnostic and therapeutic. The procedure was explained to the patient, including potential risks, benefits, and alternatives. After obtaining informed consent, the patient was prepared for the procedure. (Fig.1 & 2)

Under sterile conditions, the patient was placed under conscious sedation. Access to the vascular system was achieved via the left brachial artery using the Seldinger technique. A 6-French long vascular sheath was inserted, and a diagnostic catheter was advanced to the aorta under fluoroscopic guidance. Selective angiography of the pelvic vasculature confirmed the presence of a pseudoaneurysm arising from a branch of the left uterine artery. (Fig. 3 & 4)

Once the pseudoaneurysm was localized, a microcatheter was advanced into the feeding artery. Embolization was performed using coils (3mm, 4mm, 5mm) to occlude the arterial supply to the pseudoaneurysm. Post-embolization angiography confirmed successful occlusion of the pseudoaneurysm with no further filling of the sac. The patient was monitored for a short period in the interventional radiology suite before being transferred to the recovery room. (Fig. 5 & 6)



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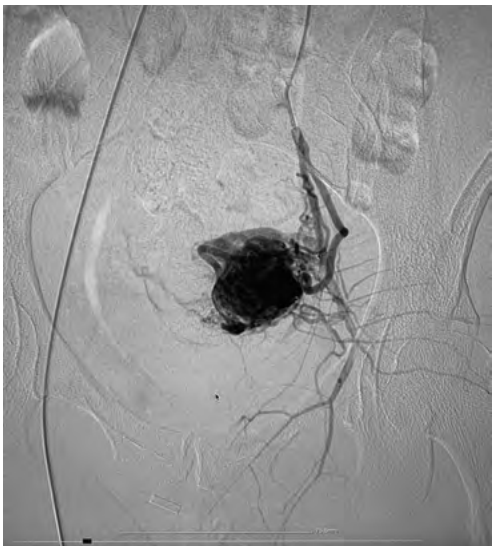

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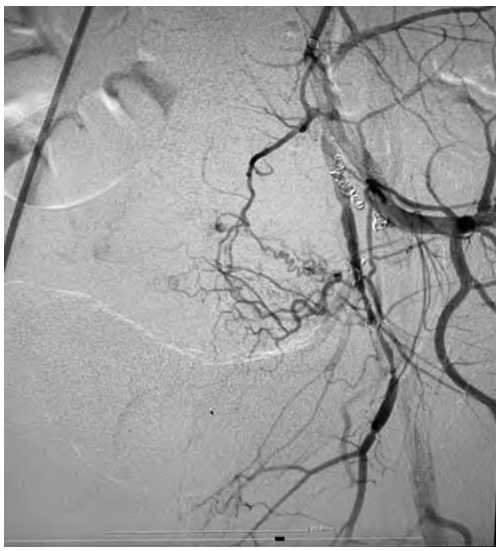

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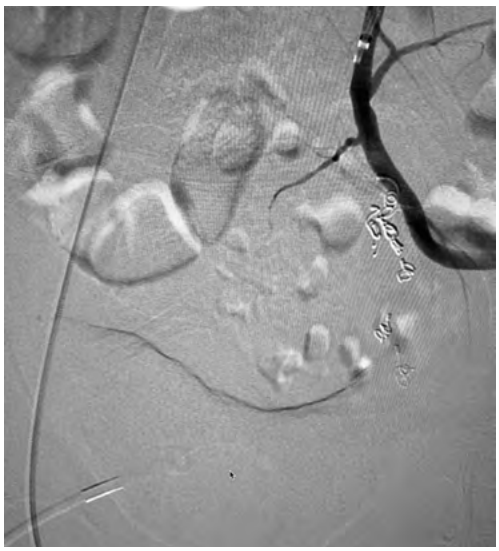


Figure 6.

OUTCOME AND FOLLOW-UP:

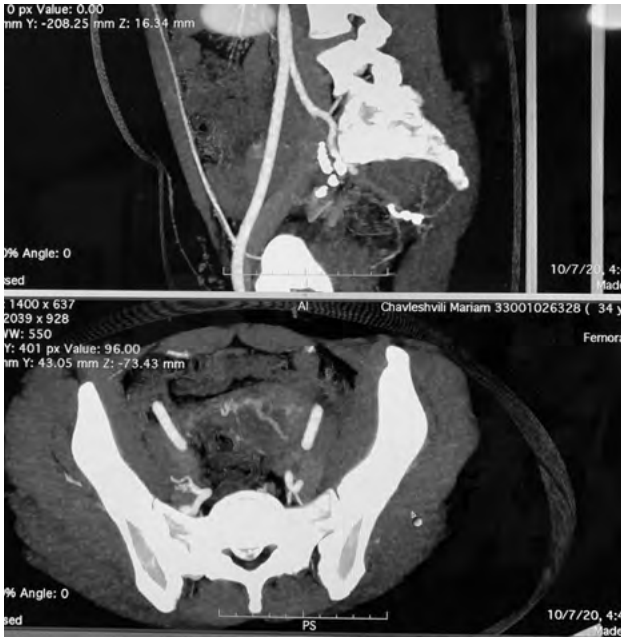
The patient's postoperative course was uneventful. She remained hemodynamically stable with no recurrence of vaginal bleeding. Her hemoglobin levels were monitored closely and showed improvement over the following days. She was discharged home two days post-procedure with instructions for pelvic rest and follow-up in the outpatient clinic.

At her one-month follow-up appointment, the patient reported complete resolution of her symptoms. A repeat Ct scan was performed and showed no evidence of residual or recurrent pseudoaneurysm. The patient's hemoglobin had normalized to 12.5 g/dL, and she was asymptomatic. The patient was counseled on the importance of early follow-up in future pregnancies due to her history of vascular complications. (Fig. 7 & 8)

DISCUSSION:

Uterine artery pseudoaneurysm is a rare but potentially life-threatening condition that can arise as a complication of pelvic surgery, including cesarean section, myomectomy, and hysterectomy [4,9,18]. The incidence of UAP is not well-defined due to its rarity, and it is often underdiagnosed due to nonspecific clinical presentations [9,15]. However, it should be considered in the differential diagnosis of delayed postpartum hemorrhage or unexplained vaginal bleeding following gynecological surgery.

The pathophysiology of UAP involves the disruption of the arterial wall, leading to extravasation of blood into the



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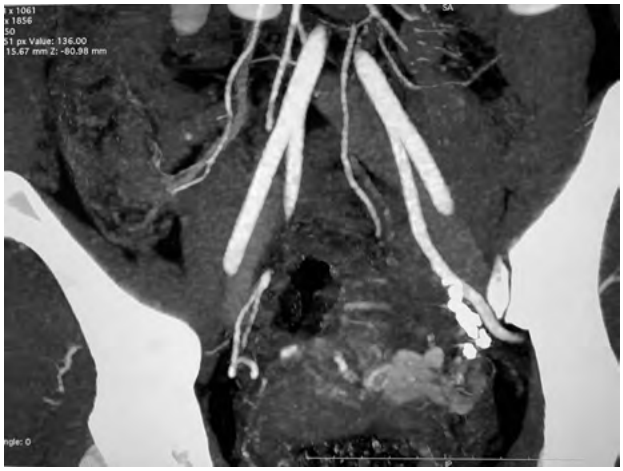

Figure 8.

surrounding tissues, where it is contained by the adventitia or perivascular tissue This creates a false aneurysm, which, unlike true aneurysms, lacks all three layers of the arterial wall [6,25]. The pseudoaneurysm is at risk of rupture, leading to catastrophic hemorrhage if not identified and treated properly. [24]

Imaging modalities play a crucial role in the diagnosis of UAP. Doppler ultrasonography is typically the first-line imaging technique, with the hallmark findings being a cystic structure with a "to-and-fro" flow pattern. Computed tomography angiography (CTA) or magnetic resonance angiography (MRA) can be used in more complex cases to provide detailed vascular mapping [19]. Ct scan (Angio) and DSA are referred to be gold standart in diagnosing. [26]

Selective arterial embolization has emerged as the treatment of choice for UAP due to its minimally invasive nature, high success rate, and ability to preserve fertility [25]. During the procedure, embolic agents such as micro-coils, gelfoam, or polyvinyl alcohol (PVA) particles are used to occlude the feeding vessel, thereby eliminating the aneurysm [1,10]. The success rate of SAE in treating UAP is reported to be over 90%, with minimal complications [24]

CONCLUSION:

Selective arterial embolization (SAE) is the treatment of choice for UAP [15]. It is a safe, effective, and minimally invasive option that preserves fertility by avoiding hysterectomy [25] The procedure involves the targeted occlusion of the aneurysmal artery, which leads to resolution of symptoms and prevents further hemorrhage.

This case highlights the importance of considering uterine artery pseudoaneurysm in the differential diagnosis of abnormal uterine bleeding, especially in the context of recent cesarean section or other pelvic surgeries. Prompt recognition and intervention are crucial in preventing life-threatening hemorrhage. Selective arterial embolization offers an effective, minimally invasive treatment option that preserves the patient's fertility and ensures a favorable outcome.

Given the potential for recurrence, close follow-up is essential in patients who have undergone embolization for UAP. Additionally, further research is needed to better understand the risk factors, optimal management strategies, and long-term outcomes for patients with uterine artery pseudoaneurysms.

This version of the case report provides a more detailed and comprehensive discussion of the patient's condition, diagnostic process, treatment, and the implications for future care

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საშვილოსნოს არტერიის ფსევდოანევრიზმის მკურნალობა სელექტიური არტერიული ემბოლიზაციით - შემთხვევის განხილვა

გიორგი ჯინჭველაძე, ლელა თანდაშვილი, სანდრო წიქარიშვილი

[1]*კავკასიის მედიცინის ცენტრი*

პასუხისმგებელი პირი: გიორგი ჯინჭველაძე, gioangio@gmail.com

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რეზიუმე

საშვილოსნის არტერიის ოსევდოანევრიზმა არის იშვიათი მაგრამ მძიმე გართულება, რომელიც შეიძლება განვითარდეს მენჯის ღრუზე ოპერაციებისას, საკეისრო კვეთისას და ჰისტეროსკოპიის შემდგომ. წარმოადგენს რა ზემოთ აღნიშნული პათოლოგია მაღალი სისხლდენის რისკს საჭიროებს სწრაფ დიაგნოსტიკასა და ინტერვენციას.

შემთხვევის პრეზენტაცია: 33 წლის ქალბატონი, საკეისრო კვეთისა და 4 კვირის წინ ჩატარებული ჰისტეროსკოპიის შემდგომ აღნიშნავს ჩივილებს: ძლიერი სისხლდენა საშვილოსნოდან, დიფუზური ტკივილი მუცლის არეში. პაციენტთან ჩატარებული ტრანსვაგინალური ექოსკანირებით ინახა: 2 სმ ზომის ანექოგენური ცისტური სტრუქტურა, „yin-yang" ნიშნით, სავარაუდო საშვილოსნოს არტერიის ცრუანევრიზმის სურათი. დიაგნოზი დადასტურდა კომპიუტერული ტომოგრაფიითა (CT Scan) და დიგიტალური სუბტრაქციული ანგიოგრაფიით (DSA).

მკურნალობა: პაციენტს სასწრაფო-გადაუდებელი წესით ჩაუტარდა სელექტიური არტერიული ემბოლიზაცია, მინიინვაზიური პროცედურა. ხანმოკლე ინტრავენური ანესთეზიის ქვეშ ტრანსბრაქიალური მიდგომით განხორციელდა დიგიტალური სუბტრაქციული ანგიოგრაფია, რითიც დადასტურდა საშვილოსნოს არტერიის ცრუანევრიზმა. საემბოლიზაციო თვითხვევადი ხვეულებით წარმატებით განხორციელდა აღნიშნული ცრუ ანევრიზმის ოკლუზია. პოსტოპერაციულმა პერიოდმა ჩაიარა მნიშვნელოვანი გართულებები გარეშე, ჩივილების კუპირებითა და ჰემოგლობინის დონის ნორმალიზებით.

გამოსავალი: ერთწლიანი დაკვირვების შედეგი - პაციენტს ჩაუტარდა საკონტროლო კომპიუტერული ტომოგრაფია სადაც რაიმე ჭეშმარიტი ნიშანი აღნიშნული დაავადების ვერ ინახა, იგი სრულად კუპირდა, გაიცა რეკომენდაცია გინეკოლოგიური გუნდისგან ორსულობის დაგეგმვის თაობაზე.

დასკვნა: სელექტიური არტერიული ემბოლიზაცია არის ეფექტური და მინიინვაზიური პროცედურა საშვილოსნოს არტერიის ცრუ ანევრიზმის მკურნალობის დროს, რომელიც გამოირჩევა მაღალის წარმატების ალბათობითა და საშვილოსნოს ფუნქციის შენარჩუნებით. ეს შემთხვევა ხაზს უსვამს სელექტიური არტერიული ემბოლიზაციის ჩართულობას საშვილოსნოს არტერიის ცრუ ანევრიზმის მკურნალობის დროს. ადრეული დიაგნოსტირება და ინტერვენცია არის უმნიშვნელოვანესი სიცოცხლისათვის სახიფათო გამოსავალის თავიდან აცილებისთვის. აღნიშნული პროცედურა და მისი ჩვენებები საშვილოსნოს არტერიის ცრუ ანევრიზმის დიაგნოსტირებისა და მკურნალობის საკითხში საჭიროებს დამატებით კვლევებს, მკურნალობისა და მართვის დახვეწის მიზნით.

საკვანძო სიტყვები: საშვილოსნოს არტერიის ფსევდოანევრიზმა, ენდოვასკულური ქირურგია