

Uterine Artery Pseudoaneurysm Secondary to Therapeutic Abortion Managed by Uterine Artery Embolisation

Case Report

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Article Information: Submission: 04/02/2020; Accepted: 11/03/2020; Published: 14/03/2020

Abstract

Uterine Artery Pseudoaneurysm (UAP) is a complication of uterine curettage or surgery and is intractable to conservative treatment. Characteristic grey scale and doppler ultrasound findings confirm the presence of pseudoaneurysm. In this case report we present a case of UAP diagnosed by ultrasound, confirmed by angiogram and managed by embolisation.

Keywords: Uterine artery pseudoaneurysm, Post D & C complications, Persistent vaginal bleeding after therapeutic abortion, Uterine artery embolisation

Abbreviations

UAP: Uterine Artery Pseudoaneurysm

Introduction

Uterine artery Pseudoaneurysm (UAP) is a complication of uterine curettage or surgery and should be considered when the haemorrhage is intractable and refractory to conservative measures [1]. Uterine artery pseudoaneurysm (UAP) is an extra luminal collection of blood communicating with the parent vessel through a defect in arterial wall showing characteristic Yin-an pattern on Doppler [2,3]. It is secondary to vascular trauma, etiology includes various pelvic surgeries and uterine procedures [4,5]. Classic ultrasound imaging findings includes pulsating anechoic cystic lesion [2], “yin -yan” pattern or “to and fro” phenomenon [2,5]. In this case report we present a case of UAP diagnosed on ultrasound and angiogram and successfully managed by selective transcatheter embolisation.

Case report

A 27 year old gravida 1, para 0, live birth 0 and abortion 1, female was admitted to hospital with severe vaginal bleeding. Her medical history revealed uterine curettage (D & C) for therapeutic abortion and evacuation of retained products of conception. Transvaginal ultrasound showed well defined anechoic lesion measuring 9 x 7 mm in the body of uterus. Doppler imaging showed swirling arterial flow with varying colours, the classic “yin - yan” pattern with narrow neck and feeding vessel. After explaining the pros and cons of the different treatment strategies, patient preferred minimally invasive fertility preserving therapy. Patient underwent left internal iliac artery angiogram which showed well defined bean shaped radio-opaque pseudoaneurysm arising from the left uterine artery. The pseudoaneurysm was embolised by superselective catheterisation of the left uterine artery. After embolisation the pseudoaneurysm showed reduced opacification and on follow up ultrasound showed no obvious vascularity (Figures 1 and 2).

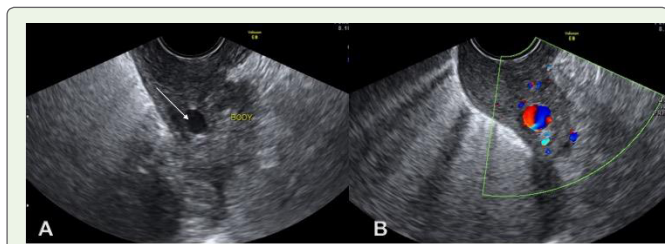


Figure 1: A-Transvaginal grey scale ultrasound showed well defined anechoic cystic lesion in the body of uterus, left laterally. B- Transvaginal Duplex Doppler ultrasound showed swirling arterial flow with varying colors, the classic "yin - yang" pattern.

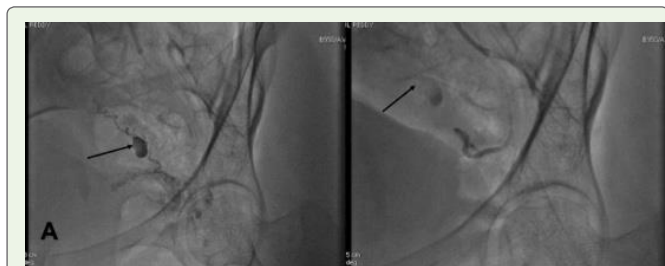


Figure 2: A- Super selective left uterine artery angiogram showed well defined bean shaped radio-opaque pseudoaneurysm. B- Super selective left uterine artery embolisation showed reduced opacification of pseudoaneurysm.

Discussion

Uterine artery pseudoaneurysm is a rare and life threatening vascular anomaly, secondary to injury to the artery with inadequate sealing of the arterial wall [4]. It occurs at a rate of 0.2 % [2]. Etiology of vascular injury includes pelvic surgeries and uterine procedures which are caesarean section, myomectomy, hysterectomy, ovarian cystectomy, traumatic delivery / traumatic pregnancy termination, curettage, manual removal of placenta, vacuum extraction and forceps delivery [4,5].

Following laceration of arterial wall, high arterial pressure gradient causes blood to dissect into the tissue planes and forms a perfused sac which communicates with the parent vessel [1]. In contrast with true aneurysm, pseudo aneurysm lacks the three layered arterial wall and usually surrounded by adjacent tissue and blood clots [5]. UAP is prone to rupture and may be fatal, risk is proportional to the size and intramural pressure [6].

UAP may remain asymptomatic but most of cases were reported as immediate and significant vaginal bleeding [7]. Some instances rupture of pseudoaneurysm involves peritoneal surface of uterus and presents as severe hypotension and shock which indicates intraabdominal haemorrhage [4]. Intractable haemorrhage refractory to conservative measures may be potentially attributed to uterine arterial injuries and UAP should be included in the differential diagnosis, should warrant search for clinical history regarding surgical trauma [1].

Grey scale ultrasound shows pulsatile anechoic cystic structure in the myometrium [1,2,7]. Colour Doppler ultrasound shows

swirling arterial flow with varying colours due to variable degree of turbulence, the "yin -yan" pattern or "to and fro" phenomenon, this can be attributed to pressure gradients between the artery and the aneurysm cavity in systole and diastole. In systole arterial blood flows like a jet in to the aneurysm cavity (forward flow) and in diastole flow reverses (back ward flow) in to the parent artery [1,2,5].

Angiography remains the gold standard in diagnosis of UAP [6]. Internal iliac artery angiogram shows a radio-opaque sac supplied by one or more feeding arteries [1]. The treatment options include hysterectomy, ligation of internal iliac artery or its branches and uterine artery embolisation [5]. Hysterectomy should be reserved for severe intractable hemorrhage in non reproductive age group [5]. Ligation of arteries has its disadvantages, as the collateral supply will establish with middle sacral, last lumbar and inferior epigastric arteries [5]. Uterine artery embolisation is minimally invasive fertility preserving treatment option in reproductive age group [4,5].

Embolisation of anterior division of internal iliac artery is a fast procedure in case of emergencies and super selective embolisation of uterine artery is an elective and time effective procedure [4].

Conclusion

Intractable haemorrhage refractory to conservative measures may be potentially attributed to uterine arterial injuries and UAP should be included in the differential diagnosis. Etiology includes pelvic surgeries and uterine intervention procedures. Classic imaging finding the "yin -yan" pattern or "to and fro" phenomenon on ultrasound. Angiography is the gold standard for diagnosis of UAP. Tran's catheter uterine artery embolisation is the minimally invasive fertility preserving treatment of choice in the women of reproductive age group.

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