

Pre-Rupture Aneurysm of the Juxta and Sub-Renal Abdominal Aorta in Early Pregnancy: A Case Report

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How to cite this paper: Rahadat, I., Niassy, A.C., Ba, D.I.G., Dieng, P.A., Faye, M.E. and Moreau, J.-C. (2022) Pre-Rupture Aneurysm of the Juxta and Sub-Renal Abdominal Aorta in Early Pregnancy: A Case Report. *Open Journal of Obstetrics and Gynecology*, 12, 999-1003.

<https://doi.org/10.4236/ojog.2022.129083>

Received: August 21, 2022

Accepted: September 26, 2022

Published: September 29, 2022

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Abstract

Aneurysm of the abdominal aorta is the result of a weakening of the arterial wall and corresponds to abnormal dilatations of the arteries defined as an increase $\geq 50\%$ of the arterial diameter compared to the normal segments. A long asymptomatic, abdominal aortic aneurysm can be a catastrophic maternal-fetal situation due to the high risk of rupture induced by pregnancy. A rare association between aneurysm and pregnancy poses a problem of diagnosis and standardized management. The lack of knowledge of this condition regularly leads to a delay in management, which is a source of excess mortality. We report the case of a patient with a progressive pregnancy of 12 weeks of amenorrhea who presented with a large sub renal abdominal aortic aneurysm with thrombosis and fissuring in order to discuss the diagnostic and management aspects of this association.

Keywords

Aneurysm, Pregnancy, Thrombus, Fissuring

1. Introduction

The most common aneurysm location is in the sub-renal abdominal aorta (2). It was most often asymptomatic or discovered by chance during an abdominal ultrasound performed for other pathology, and it can manifest itself by a fixed, deep, stabbing pain, felt predominantly in the lumbosacral region, rarely by a flapping, expansive abdominal mass in lean women. It is a rare pathology, potentially fatal due to its dreaded and unpredictable complications, which are

aneurysm rupture preceded by fissuring and thrombus that can lead to ischemia of the lower limbs and mesentery (2). However, the compression of the aorta and iliac vessels by the pregnant uterus and the modifications of the arterial walls induced by the hormonal changes linked to pregnancy make pregnancy a risk factor for aneurysm rupture. Maternal-fetal survival depends on the rapidity of the diagnosis and the management, which remains multidisciplinary. The indication for surgery depends on the size of the aneurysm and the presence or absence of complications. Few cases of aneurysms associated with pregnancy are reported in the scientific literature.

2. Patient and Observation

Mrs. K. F, 37 years old, third gesture, second pare, with a pregnancy of 12 weeks of amenorrhea + 6 days, presenting obesity as a risk factor, received at the clinic of gynecology and obstetrics Le Dantec for acute periumbilical abdominal pain of the type of prick.

The patient was followed up with a pre-pregnancy consultation, and was found to be at risk of an aneurysm of the aorta, which was discovered by chance during an ultrasound scan carried out on 31 May 2002 at the beginning of the pregnancy. She was followed up with a prenatal consultation, the prenatal check-up was done and revealed a positive B hepatitis Hbs antigenemia, a typical AS profile on hemoglobin electrophoresis. Obstetrical physical examination on admission showed clear consciousness, vitals were normal, symmetrical normal breasts with accentuated areolar pigmentation, cervix is softened with enlarged and globular uterus.

Abdominal examination showed a soft abdomen, a firm tender flapping, expansive, non-blowing supra umbilical mass of about 10 cm long with a negative BAKEY sign. There were no signs of peritoneal irritation. There were no trophic or sensory-motor disturbances in the lower limbs, local heat was retained and peripheral pulses were felt distally. The examination of other devices and systems was unremarkable. She had an ultrasound scan which showed a 61 mm saccular aneurysm of the sub renal abdominal aorta with a 98 mm * 33 mm mural thrombus in an evolving pregnancy of 12 weeks and an emergency Angio scan of the abdominal aorta and lower limbs which revealed an aneurysm of the abdominal aorta measuring 85 * 69 mm axially and 191 mm in height, associated with circumferential thrombosis of the aneurysm with signs of fissuring, such as irregularity of the circulating aortic lumen and peri-aortic infiltration (see **Figure 1**). We concluded that the patient had a thrombosed abdominal aortic aneurysm with fissuring and was evacuated to cardio-thoracic surgery in Fan, where she was hospitalized, conditioned, had her blood pressure monitored and was treated with a level 2 analgesic and an anti-emetic, morphine tablet 2 mg * 6/day then PSE 80 mg in 50 cc speed 1, an anxiolytic, iron, a proton pump inhibitor, mannitol 1 cac every 15 minuites, a laxative, antibiotic therapy, basic needs (2NaCl + 1KCl in G5%) and a tocolysis protocol with spasfon and injectable delayed progesterone before the surgery Cardiac echocardiography was

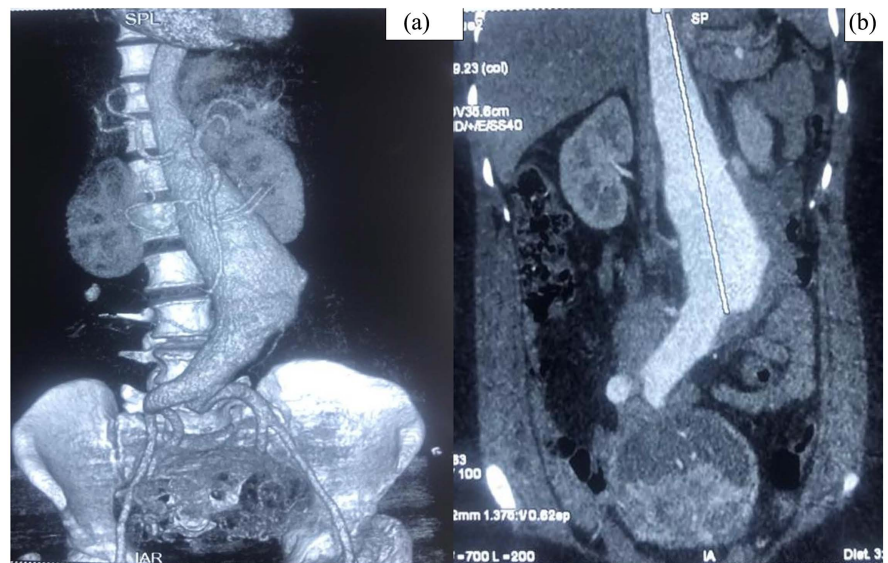


Figure 1. Abdominal aortic aneurysm—Angio scan of the abdominal aorta and lower limbs which revealed an aneurysm of the abdominal aorta measuring 85 * 69 mm axially and 191 mm in height.

normal with a left ventricular systolic ejection fraction of 57%, obstetrical echocardiography showed an evolving monofetal pregnancy of 14SA + 5 days, blood count showed normocytic normochromic anemia at 9.3 g/dl. The blood ionogram, blood crase, urea and creatinemia were normal. The C-reactive protein was elevated to 24.9 mg/l and the pro-calcitonin to 0.41 ng/ml. The indication for an aneurysm cure by laparotomy was given and the exploration showed a large fusiform aneurysm of about 10 cm long and 8 cm wide, located between the suprarenal abdominal aorta and the aortic bifurcation without iliac extension.

3. Discussion

Abdominal aortic aneurysm is a rare but potentially fatal condition due to cataclysmic rupture: 80% pre-hospital mortality and 30-60% hospital mortality according to a study conducted in Dakar, Senegal [1].

Incidence of sub-renal abdominal aortic aneurysm in the general population remains unknown with a clear male predominance [2]. The most important risk factors in descending order are smoking, family history of abdominal aortic aneurysm, evidence of atherosclerosis, age, hypercholesterolemia and high blood pressure [3].

Pregnancy contributes to aneurysm rupture by the fragilization of the vascular walls linked to a gravida degenerative process, in particular dysplasia of the media fibers, splitting and rupture of the internal elastic lamina, fragmentation of the elastic fibers [4], which makes aneurysm rupture one of the most frequent circumstances of discovery during pregnancy. Emergency splenectomy for splenic artery aneurysm rupture during pregnancy has been reported in more than 100 patients in the scientific literature and appears to be associated with

significant maternal and neonatal mortality rates in the range of 75% to 95%.

A case of uterine artery aneurysm ruptures in the second trimester of pregnancy which benefited from arterial embolization [5].

Most often asymptomatic, acute abdominal pain remains one of the circumstances of discovery, as in the case of our patient who presented with acute abdominal pain which was not soothed by the usual analgesics. A therapeutic abstinence or a curative treatment of abdominal aortic aneurysms (AAA) can be performed. The curative treatment is either surgical, which remains the reference treatment, and consists of the surgical flattening of the AAA and the placement of a synthetic tubular aortic prosthesis, or endovascular, which is less invasive and consists of excluding the aneurysm from the bloodstream by endovascular implantation of a prosthesis in the AAA, thus creating a new passageway for the blood and strengthening the arterial wall. Curative treatment of abdominal aortic aneurysms before rupture is an important factor in reducing AAA-related mortality, particularly in non-emergency settings. The decision to operate on an unruptured AAA is based on the following criteria: diameter of the aneurysm sac > 50 mm, growth rate of the AAA > 10 mm/year, symptomatology suggesting a crack. The size of our patient's abdominal aortic aneurysm was 85 mm with signs of fissuring.

4. Conclusion and Recommendations

A rare and morbid association, this couple remains in a situation with a high risk of rupture due to the physiological modification induced by the pregnancy. The rarity of its occurrence and its clinically misleading revelation for the obstetrician makes the diagnosis too often late. Appropriate multidisciplinary management can improve the maternal-fetal prognosis.

Because of the higher risk of rupture and mortality during pregnancy, we recommend that pregnancy be planned in order to reduce maternal-fetal mortality.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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