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Case Report

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Peripartum type A dissection: a case report

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ABSTRACT

Aortic dissection is a rare but potentially lethal complication during pregnancy in young women and usually diagnosis could be overlooked. We reported a 40-year-old postpartum female with aortic dissection which developed in peripartum period. She complained of interscapular back pain and chest pain. The patient's pain had continued after caesarean section. She admitted to our clinic six days after this intervention. Contrast-enhanced computed tomography revealed the aortic dissection. Hemiarch replacement performed successfully and the patient discharged uneventfully despite of delayed diagnosis.

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Key Words: Peripartum aortic dissection, pregnancy complications, monitoring

Introduction

Aortic dissection during pregnancy is a rare but life-threatening complication for both mother and fetus [1]. Increased intravascular volume, heart rate, cardiac output and hemodynamic changes, occur during pregnancy. These changes are may be responsible for the increased risk for acute aortic dissections during labour and delivery or in the early postpartum period [2]. Reported cases are mostly associated with connective tissue disease (e.g. Marfan's syndrome), systemic hypertension and congenital heart disease, including coarctation and bicuspid aortic valve [3]. We reported the case of an acute type A aortic dissection occurred in a primigravid female with no noticeable risk factors just before delivery.

Case Presentation

A 40-year-old primigravid female delivered a baby with caesarean section 6 days ago, who had sudden onset of interscapular back pain and chest pain just before delivery. The patient underwent caesarean section and her chest pain had continued persistently. She had hypertension medication during pregnancy. There was no Marfanoid appearance or other appearances related with aortic dissection. Her blood pressure was 160/90 mmHg with no difference in both arms. Chest X-ray showed mediastinal enlargement but no pulmonary congestion or pleural effusion. The baseline complete blood count, serum creatinine and electrolytes were within normal limits. Contrast-enhanced computed tomography revealed type A aortic dissection starting from ascending aorta to the

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distal descending thoracic aorta (Figure 1).

After decided to emergent surgical intervention, the patient has taken to the operating room. Following right axillary artery cannulation [4-6], cardiopulmonary bypass was established. Later a sternotomy incision was made and presence of intimal tear in the supracoronary ascending aorta revealed. Under circulatory arrest with selective cerebral perfusion the arcus aorta was opened. A tear was not detected at the ostia of supra-aortic branches. We performed hemiarch replacement. The postoperative course was uneventful and the patient was discharged from the hospital on the postoperative day 7.

Discussion

According to the Stanford classification system aortic dissections evaluated as two types: type A, involving the ascending aorta regardless of the entry site location, and type B, involving the aorta distal to the origin of the left subclavian artery. Due to its high rate of mortality type A dissections requires urgent surgical approach [4]. The most common site of pregnancy-associated dissection is the proximal aorta, and aortic rupture usually occurs during the third trimester or first stage of labour [2]. There are many case reports in the literature about surgical experience at all stages of pregnancy [3].

In our patient hypertension was the known predisposing factor. It should also be stated that pregnancy is an independent risk factor for aortic dissection. Because hemodynamic changes are significantly effective in pregnant women in the second and third trimesters. These changes include increased heart rate, stroke volume, cardiac output, left ventricular wall mass, and left ventricular end-diastolic dimensions, and additionally decreased systemic vascular resistance, heart rhythm changes, and compression to the abdominal vessels by the gravid uterus [2]. Also alterations in plasma estrogen and progesterone concentrations which induced by pregnancy could be associated with aortic structural changes and lie behind the aortic dissection.

Although the clinical manifestations of acute aortic dissection are well described, the diagnosis is often overlooked in the pregnancy. In our case we have also encountered a delayed diagnosis. Acute aortic dissection has an estimated mortality rate of 1 to 2% per hour during the first 24 to 48 hours of onset if remains untreated [7]. Rajagopalan *et al*. [8]reported a maternal mortality rate of 21% for type A and 24% for type B aortic dissections in 75 pregnant women. The fetal mortality rate was 10% for type A and 35%

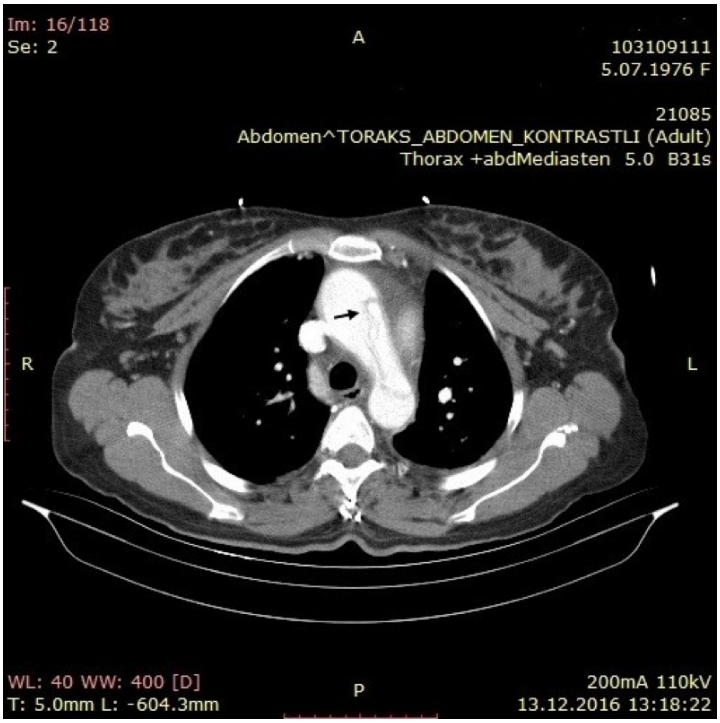

Figure 1. Intimal flap imaging (arrow) at the transverse arch

for type B aortic dissections [8]. The patients which has predisposing factor such as hypertension due to preeclampsia, congenital heart disease, coarctation of the aorta or connective tissue disorders as Marfan syndrome, should be closely monitored. For our patient, we performed hemiarch replacement and in despite of delayed intervention outcomes were sufficient. Late presentation and delayed diagnosis may cause death in these patients. If any symptom begins suddenly such as severe, sharp pain in the chest and interscapulary area aortic dissection must be considered.

Conclusions

A 40-year-old female with type A acute aortic dissection which developed just before delivery, treated successfully by hemiarch replacement six days after delivery. This case has some highlights for gynaecologist and cardiovascular surgeons. After onset of acute complaints caesarean section has been performed but not suspicious presence of aortic dissection. She could have lost her life in this six days.

Informed consent

Written informed consent was obtained from the patient for publication of this case report and any accompanying images.

Conflict of interest

The authors declared that there are no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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