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Case Report

An atypical presentation of chronic Stanford type A aortic dissection during pregnancy☆

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Abstract Aortic dissection is a rare but devastating disease during pregnancy, usually presenting with sharp pains on the chest or back. We report a pregnant woman suffering from chronic Stanford type A aortic dissection presented with atypical symptoms without pain in the third trimester with markedly dilated aortic root and congestive heart failure, who received concomitant cesarean delivery and aortic repair with good maternal and fetal outcomes. Multidisciplinary approach and tight hemodynamic control are very important. More attention should be paid to those atypical symptoms so as to early identify this scarce but disastrous disease during pregnancy.

1. Introduction

Aortic dissection is a rare but devastating disease during pregnancy, with high mortality and morbidity for the mothers and fetuses. Sawlani et al [1] reported that the rate of aortic dissection in pregnancy was 0.0004% in the United States and represented 0.1% of all cases of aortic dissection. According to the duration from initial onset of symptoms to the time of presentation, aortic dissection can be categorized as acute if presenting less than 2 weeks from symptom onset, and chronic if presenting 2 weeks or more from symptom onset [2]. Most patients with acute aortic dissection would present with typical symptom of severe chest pain or back pain [3]; in scarce situations, patients may present to the hospital due to other severe coexisting conditions, not due to severe chest pain or back pain. Patients with atypical presentation may accompany with severe conditions and be prone to have delayed diagnosis and mismanagement. We report that one case of atypical presentation of chronic type A aortic dissection without pain occurred in the third trimester of pregnancy with markedly dilated aortic root and congestive heart failure, who underwent concomitant cesarean delivery and aortic dissection repair with good maternal and fetal outcomes.

Written consent was acquired from the patient, and approval was received from the institutional ethics committee of Beijing Anzhen Hospital.

2. Case report

A 27-year-old multiparous woman presented to our emergency department at 29 weeks of gestation. She was 175 cm in height and 76 kg of body weight. One month ago, she complained of chest tightness, significant decline in vigor,

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shortness of breath, and bad sleeping, but denying any pain. She did not come to the hospital and thought that these symptoms were the results of advanced pregnancy. One week ago, her situation deteriorated; she developed orthopnea with frequent coughing and could not lie flat. She was sent to the local hospital; a Stanford type A aortic dissection with severe aortic regurgitation was confirmed by transthoracic echocardiography (TTE). She was referred to our emergency department. Physical examination did not find any Marfinoid stigmata, and no pulse deficit was revealed. Bedside TTE demonstrated the following: left ventricular end-diastolic dimension (LVED) of 80 mm, ejection fraction (EF) of 27%, severe aortic regurgitation and mild tricuspid insufficiency, the estimated systolic pulmonary artery pressure of 49 mm Hg, the diameter of the sinuses of Valsalva of 81 mm, and ascending aorta of 48 mm with intimal flap floating at the root of the ascending aorta. Computed tomographic angiogram showed that the dimension of aortic root was 71.4 mm, the intimal flap was seen in the aortic root extending to the arch, and the maximal diameter of thoracic aorta was 24.6 mm (Fig. 1). Laboratory investigations revealed significantly increased plasma pro–brain natriuretic peptide (2373 pg/mL), serum alanine transaminase (282 U/L), and serum aspartate transaminase (197 U/L), and her serum creatinine was 64.4 μmol/L in the normal range. She denied history of hypertension, diabetes, smoking, and drug abuse. Chronic type A aortic dissection and congestive heart failure were diagnosed. A multidisciplinary team including obstetrician, neonatologist, perfusionist, cardiac surgeon, and anesthesiologist was consulted, and emergent concomitant cesarean delivery and aortic dissection repair were decided. Eight hours later, she was transferred to the operating room without premedication. Her left radial artery and dorsal pedal artery were cannulated under local anesthesia. Her radial arterial pressure was 142/57 mm Hg, heart rate was 123 beats/min, and oxygen saturation was 95% on room air. The chest and abdomen were prepped and draped. Cesarean delivery was performed under general anesthesia with cardiac surgeons on standby. Induction drugs were midazolam 5 mg, sufentanil 100 μg, cisatracurium 20 mg, and etomidate 8 mg. The radial systolic arterial pressure was maintained at about 100 mm Hg during cesarean delivery to avoid aortic rupture and provide sufficient perfusion for the placenta with inhalation of 1% end-tidal sevoflurane and intermittent injection of sufentanil. A baby boy of 1450 g was delivered with 1-5-10 minute Apgar scores of 4-4-6. The neonate was immediately intubated and transferred to the neonatal intensive care unit (ICU) by the neonatologist. No oxytocin was administrated as the uterine contractions seemed normal. A balloon catheter was placed into the uterine cavity through vagina immediately after delivery, and filled with normal saline about 160 mL to minimize uterine bleeding. Then her abdomen was carefully closed. She was draped again and proceeded to cardiovascular

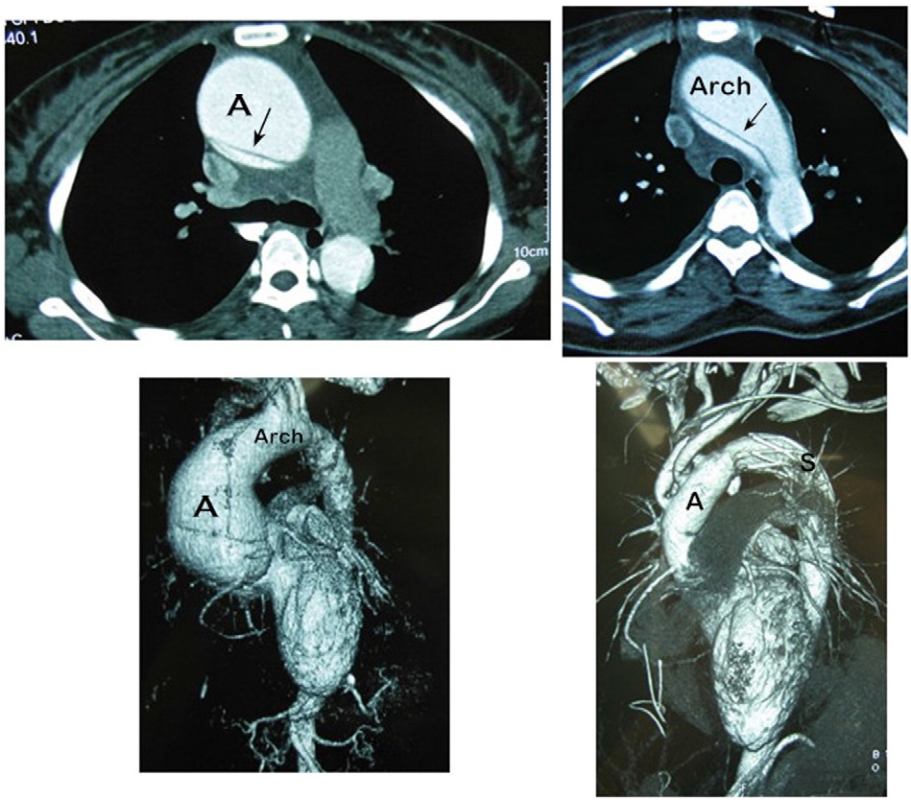

Fig. 1 Top left: axial CT demonstrates dilated ascending aorta (A) with intimal flap (black arrow). Top right: dissection of aortic arch and intimal flap (black arrow) is revealed. Bottom left: three-dimensional CT shows dilated ascending aorta (A) and the arch. Bottom right: postoperative 3-dimensional CT illustrates the stented graft (S) and reconstructed ascending aorta (A) and arch. CT = computed tomographic imaging.