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Key Words: aorta, aortopathy, pregnancy, dissection, aneurysm

EDITORIAL COMMENTARY

In pregnancy, aortic tissue is the issue

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CT images of a type A dissection that occurred 1 week postpartum in a patient with Marfan syndrome.

Central Message

A multidisciplinary team can optimize management and determine whether pregnancy is inadvisable or aortic repair needed before pregnancy.

See Article page S44.

In this elegant report, Lansman and colleagues¹ provide an interesting review of a complex topic: Management of aortic disease and aortic dissection in pregnancy. The available literature offers little evidence concerning this

topic, so this review should be applauded. The authors concisely describe the hyperdynamic state and aortic wall

FIGURE 1. Computed tomography images of a type A dissection that occurred 1 week postpartum in a patient with Marfan syndrome.

changes that occur during pregnancy and emphasize the increased risk of aortic dissection in women with predisposing aortopathies. The review cites the American College of Cardiology/American Heart Association guidelines for women with Marfan syndrome, Loeys-Dietz syndrome, Turner syndrome, and Ehlers-Danlos IV syndrome who are considering pregnancy, as well as the European recommendations for managing cardiovascular disease during pregnancy. The authors provide tips for appropriate timing of aortic surgery and management of cardiopulmonary bypass in this population. The proposed strategies change as gestation progresses.

The authors confirm previous reports that up to half of aortic dissections in women younger than age 40 years are associated with pregnancy.² Dissection is particularly frequent in pregnant women with genetically triggered thoracic aortic disease, and aortic dissection may be the first presentation of an aortopathy. In this population, aortic dissection results in a mortality rate of up to 22%.³ Most dissections happen during the third trimester or postpartum. In a 10-year review of 75 aortic dissections,⁴ Stanford type A dissection was the most common (77%). Maternal mortality was not significantly different in type A (21%) versus type B (23%) dissection, but fetal mortality was significantly worse in type B dissection (10% vs 35%).⁴

When women with known aortic disease contemplate pregnancy, they should receive proper information regarding potential maternal morbidity and mortality, as well as on the risk to the child, including possible transmission of the disease. A multidisciplinary team, comprising cardiologists, genetic counselors, and high-risk obstetricians, is extremely important for optimizing medical management before pregnancy and identifying women for whom pregnancy is

contraindicated or aortic repair is recommended before pregnancy. If a woman decides to become pregnant despite the risks, close proximity to a tertiary care center with high-risk obstetricians, anesthesiologists, cardiac surgeons, and cardiologists is advisable. In addition to β -blocker therapy, transthoracic echocardiography every 8 weeks and noncontrast magnetic resonance angiography every trimester are recommended,⁵ provided that the aorta remains stable. In-hospital observation for 1 to 2 weeks postpartum, to detect aortic changes, is also advocated. The early postpartum period is recognized as a time frame of significant risk (Figure 1); therefore, frequent echocardiography during the first 6 weeks postpartum is prudent. The National Marfan Foundation (<https://www.marfan.org>), Ehlers-Danlos Syndrome Society (<http://ednf.org>), and Loeys-Dietz Syndrome Foundation (www.loeysdietz.org) provide medical information and resources, including the risks associated with pregnancy. The National Registry of Genetically Triggered Thoracic Aortic Aneurysms and Cardiovascular Conditions (gentac-registry@rti.org) promotes research and clinical management of these patients and raises awareness among physicians and patients.

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