Resolution of Ascending Aortic Dissection in a Stanford Type A Patient

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We observed an unusual natural course of a Stanford type A aortic dissection. The patient presented to the emergency department with an acute aortic dissection involving an ascending aorta and left-sided hemiparesis. The patient declined surgery and was managed conservatively. A follow-up scan after 1 month revealed that the patient had a complete spontaneous resolution of the dissection in the ascending aorta. Such a development is very rare and unexpected in patients with Stanford type A aortic dissection.

A 53-year-old patient presented to the emergency department of National University Hospital in Singapore with a new onset of neurologic deficit in 2010. His medical history revealed poorly controlled hypertension. He had left-sided hemiparesis and speech slurring upon arrival to the emergency department, without any chest, back, or abdominal pain. His score on the Glasgow Coma Scale upon arrival was less than 10, and his score declined to 8 during the assessment in the emergency department. Clinical examination revealed weak pulse in the left radial artery and a significant difference in systolic blood pressure of more than 40 mm Hg between the right and left arms.

The patient underwent emergency whole aorta contrast-enhanced computed tomography (CT), which showed a dissection of the aorta originating from the proximal aortic root and extending all the way into the left external iliac artery (Fig 1). The ascending aorta and aortic arch were grossly involved in the dissection, with the flap extending to the left subclavian and innominate artery. Although the true lumen was opacified in all branches, it was compressed into the slit in the left subclavian artery. A transthoracic echocardiogram confirmed the diagnosis of aortic dissection and showed a gross dissection of the ascending aorta and mild aortic regurgitation.

An emergency ascending aortic replacement was offered to the patient and his family. They were informed about the poor natural history of Stanford type A aortic dissection, as well as the low chance of a full neurologic recovery with or without surgery. In view of the neurologic symptoms and associated high-risk procedure, the patient’s family declined the operation. The patient was managed conservatively throughout his stay and was discharged after 2 weeks with well-controlled blood pressure, residual speech changes, and left-sided hemiparesis.

The patient progressed well and underwent contrast CT scan on follow-up 1 month later. Despite the expected changes in the ascending aorta, the new angiogram did not show a typical picture of an ascending aortic dissection: the aortic wall of the ascending aorta was thickened without the flap and double lumen (Fig 2).

A contrast-enhanced CT scan was performed on subsequent regular follow-up during the next 2 years. The angiogram revealed that the ascending aorta remained stable in terms of the diameter and thickness of the aortic wall (Fig 3). The tomographic image of the aortic arch and the descending aorta still displayed the dissection without life-threatening complication.
Comment

Acute Stanford type A aortic dissection requires immediate surgical intervention. A new onset of neurologic deficit, which is generally considered a relative contraindication for an emergency ascending aorta replacement, could be one of the major clinical presentations of patients with acute Stanford type A aortic dissection. The approach to medical treatment of acute Stanford type A aortic dissection is usually symptomatic, with emphasis on controlling the patient’s blood pressure to prevent the potential cardiovascular complication of Stanford type A aortic dissection. However, this form of management has a poor prognosis and is usually associated with high mortality. Early mortality is usually related to ascending aortic rupture and malperfusion of visceral branches.

In the case we present here, we observed an uncommon natural course of Stanford type A aortic dissection. The patient with a confirmed ascending aortic dissection 1 month after initial presentation exhibited resolution of double lumen on repeated CT angiogram. Regular scans done during the 2-year follow-up showed normal appearance of the ascending aorta without dilation. This is very rare, and thus far, only one case report [4] had been found in the literature. The literature review, however, revealed several reports where there was a complete resolution of Stanford type B aortic dissection [5–7]. The exact mechanism of a spontaneous resolution of an ascending aortic dissection is unknown and not explained in the literature. Theoretically, we postulate that thrombus formation in the false lumen might have led to obliteration of the false lumen. In general, the resolution of the false lumen may be considered as a sign of good prognosis [8]. The scar formation between two dissected layers can be expected with reinforcement of the aortic wall.

In our opinion, this rare condition prevented sudden death and rupture of the ascending aortic in this patient. However, the aortic wall is unlikely to revert back to its original healthy state and requires close follow-up. A combination of tight blood pressure control and regular follow-up with available imaging is essential for diagnosis of late complications and for prolonging the patient’s survival. Surgery must be reconsidered in situations where complications of an aortic dissection occur.

References