mediastinitis, a complication that could have devastating consequences. We offer rigid plate fixation as a method of both sternal fixation after early dehiscence and as a means for prophylaxis in the cardiac transplant population.

References

Congenital thoracoabdominal aortic aneurysm

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Thoracoabdominal aortic aneurysms are uncommon in infancy; only a very few surgical cases are reported. In general, there is much to suggest that infection is a cause of the disease, but in the present case we suspected aberration of elastin composition from the fetal period. We report an extremely rare surgical case of congenital thoracoabdominal aortic aneurysm.

Clinical Summary
A 2-month-old boy with tachycardia and tachypnea was referred to our hospital. He had been delivered normally at full term and was well after birth; the mother’s pregnancy had been uncomplicated. Nevertheless, computed tomography revealed 2 huge saccular thoracic aortic aneurysms in the posterior mediastinum and a small abdominal aortic aneurysm at the level of the celiac artery. The maximal diameter of the thoracic aortic aneurysm was $75 \times 53 \times 47$ mm, and in part of the aneurysmal wall, a laceration and an intraluminal hematoma were recognized. In addition, the left atrium and the inferior vena cava were pressed forward by the aneurysms (Figure 1). Angiography revealed a hypoplastic abdominal aorta and showed that the celiac artery and the superior mesenteric artery originated from the same location as the distal site of the abdominal aortic aneurysm.

An operation was performed through a median sternotomy with extension to the abdomen and a left thoracotomy. Arterial cannulas were inserted into the ascending aorta and the abdominal aorta. A venous cannula was inserted through the right atrium. After institution of deep hypothermic cardiopulmonary bypass, the aorta was divided just distal to the origin of the left subclavian artery. The aorta was replace with a 10-mm Dacron graft (Hemashield; Meadox Medicals, Oakland, NJ) while the heart was beating. Microscopic examination of the resected specimens revealed fragmentation and configuration change of elastic fibers in the media and secondary increased findings of fibroblasts and collagen fibers in the adventitia (Figure 2). Infiltration of inflammatory cells was not detected. Aortography showed smooth reconstruction of the descending aorta except for a slight dilatation of the abdominal aorta at the level of the celiac artery (Figure 3). The patient had an uneventful postoperative course and was discharged with no complication.

Discussion
Thoracoabdominal aortic aneurysm is extremely rare in infancy, with few surgical cases reported. Infection, connective tissue disease, and trauma have been nominated as causes of the disease, but there is much evidence that the disease is caused by infection from the umbilical artery catheter. With respect to the origin bacteria, staphylococcus has been documented in 51% of cases, and the patient had an uneventful postoperative course and was discharged with no complication.
reported,\textsuperscript{4,5} as in the present case. In the histopathological study of this case there were no findings of infection or inflammation in the media or intima of the aneurysmal wall. In addition, there was no connective tissue disease that was consistent between pathology and clinical observation. However, an aberration of elastin composition was suggested by the observation of fragmentation and configuration change of elastic fibers in the media of the aneurysmal wall. Furthermore, we strongly suspected that the aneurysms were formed during the fetal period because of a remarkable secondary increase of fibroblasts and collagen fibers in the adventitia of the 2-month-old boy.

The natural prognosis of aortic aneurysm in infancy is unacceptable. According to Cribari and colleagues,\textsuperscript{1} 80\% of the patients who did not undergo surgery died in hospital and, of those, 42\% experienced rupture of the aortic aneurysm. With respect to operation reports\textsuperscript{1-4} of thoracoabdominal aortic aneurysm in infancy, there have only been 6 cases; 2 of these patients were younger than 2 months, including this case.

Concerning postoperative complications, maximal care is necessary to avoid paraplegia or paraparesis, and reconstruction of the intercostal arteries of a child is very difficult. In this case, we closed the intercostal artery as much as possible, to achieve hemostasis, and no abnormal neurological findings were recognized. Ultimately, owing to mismatch of the prosthetic graft by growth of the patient, we will have to consider reoperation. For avoidance of reoperation, both primary lateral repair\textsuperscript{1} and bypass grafting with a surplus length\textsuperscript{4} had been tried in other institutions. Presently, there are no adequate clinical reports on reoperation and no mid- to late-term results, so we will have to employ a cautious follow-up in the future.
References


Figure 3. Postoperative angiography and computed tomography showing smooth reconstruction of the descending aorta except for a slight dilatation of the abdominal aorta.