Primary fibrochondroma in the descending aorta

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Disclosures: Authors have nothing to disclose with regard to commercial support.

Received for publication March 9, 2019; revisions received March 24, 2019; accepted for publication April 1, 2019; available ahead of print June 4, 2019.

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J Thorac Cardiovasc Surg 2020;159:e287-8

0022-5223/\$36.00

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<https://doi.org/10.1016/j.jtcvs.2019.04.011>

Primary fibrochondroma in the human descending aorta.

Central Message

A fibrochondroma originating from the aorta could be invasive with increased malignancy; therefore, radical resection is imperative.

See Commentary on page e289.

Video clip is available online.

A 29-year-old woman presented to Peking University People's Hospital with a 5-month history of left lower limb numbness and swelling, and progressive hypertension (160/100 mm Hg) but without any sign of the immune disease or tumor. Computed tomography of the thorax and abdomen revealed a well-defined aortic space-occupying lesion at the level of the 12 thoracic vertebrae to the level of the birenal arteries (Figure 1, A). A left thoracoabdominal incision via retroperitoneal access was performed. The aortic mass was hard in shape and sprouted from the posterior wall of the aorta with a small pedicle, which had been entirely resected (Figure 1, B). Microscopically, the mass was aortic chondroma and consisted of chondrocytes in a nodular distribution (Figure 1, C). Further immunohistochemistry stain showed positive cartilage biomarkers, and the pathologic diagnosis was fibrochondroma. However, 15 months later, she underwent the second operation for a neo-formed fibrochondroma at the previous location, but this time the mass was smaller but with a “fish-flesh” soft appearance, which originated from the anterior wall of the aorta (Figure 1, D). Intraoperatively, we observed the fibrochondroma had invaded the original segment of the celiac artery. The fibrochondroma was then fully resected with tumor margin intima excision (Figure 1, E and Video 1). The pathologic result remained the chondroma but with increased malignancy (Figure 1, F). Overall, a chondroma occurs primarily in the limbs and has a benign nature.¹ There were reports of primary leiomyosarcoma in the human abdominal aorta² and chondromas in a dog's aorta.^{3,4} However, in this case, the fibrochondroma not only originated from the aorta but also was confirmed with an invasive and recurrent nature.

This case indicated that the ability of the vascular smooth muscle cells differentiating into a cartilage tissue, which was not justified previously. At follow-up 8 months after

VIDEO 1. During the first operation, the fibrochondroma was fully resected after the visceral arteries were under control. Note that the fibrochondroma was hard in shape and sprouted from the posterior wall of the aorta with a small pedicle. During the second operation, we found the neo-formed fibrochondroma was “fish-flesh” soft in appearance and originated from the anterior wall of the aorta. It was fragile and easily crushed into pieces. The fibrochondroma and neoplasm intima that had invaded to the celiac artery were fully resected with tumor margin intima excision. The intima was removed with the assistance of vascular shunt for maintaining the patency of the visceral artery. Video available at: [https://www.jtcvs.org/article/S0022-5223\(19\)30904-3/fulltext](https://www.jtcvs.org/article/S0022-5223(19)30904-3/fulltext).

FIGURE 1. The primary fibroenchondroma in the human descending aorta. A, Three-dimensional reconstruction of computed tomography scan revealed a large aortic space-occupying lesion (white arrow) at the descending aorta. B, The appearance of the space-occupying lesion (centimeter) after the first operation. C, The pathological diagnosis was fibroenchondroma, and the section showed an atypical hyperplasia of chondrocytes (red arrow). D, Three-dimensional computed tomography scan reconstruction revealed a “smaller” (white arrow) neo-formed fibroenchondroma at the descending aorta. E, The intima of neoplasm that had invaded to the celiac artery in the second operation. F, Pathologic result indicated increased malignancy of the fibroenchondroma (red arrow).

the second surgery, she was free of fibroenchondroma and no recurrence was observed. Our case suggests that full resection is critical for an aortic chondroma.

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