Serial images demonstrating progression of type A intramural hematoma to type B aortic dissection

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Central Message

A 67-year-old man presented to our institution with severe back pain. Computed tomographic angiography showed progression of type A intramural hematoma to type B aortic dissection.

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▶ Video clip is available online.

A 67-year-old man with history of hypertension sought treatment at our institution with short-term onset of severe back pain. On physical examination, his pulse was 110 beats/min, and his blood pressure was 148/77 mm Hg. A computed tomographic scan on arrival revealed a type A intramural hematoma involvement in the whole thoracic aorta (Figure 1, A, arrows). Blood pressure control was initiated, and the decision was made to treat the patient medically. At 1 week and 3 weeks after admission, repeated computed tomographic angiographic scans showed progression of type A intramural hematoma to type B aortic dissection and that there was communication (arrow) between the hematoma and the aortic lumen. The patient was in hemodynamically stable condition, and pain was relieved gradually during this time (Figure 1, B and C). We can see from series of computed tomographic images that there was a trend toward the gradual absorption of the intramural hematoma in the ascending aorta, and the range was decreasing.

Although sudden death is the most tragic event associated with type A intramural hematoma,¹ controversy still exists as to whether emergency surgical intervention should be

carried out for patients with type A intramural hematoma. On the other hand, because typical type B dissection was observed (Figure 1, C-E), the patient was taken to the operating room and endovascular stent grafting was performed.

One month after the surgery, another computed tomographic angiographic scan revealed that no endoleak was identified and the stent remained unchanged in position when compared with placement imaging (Figure 1, F). After half a year, however, the patient was readmitted to our hospital because of severe lower back pain. Computed tomographic angiography revealed a huge solitary penetrating aortic ulcer with minimal intramural hematoma located just underneath the distal end of the original stent (Figure 1, G-I, and Video 1). The decision was then made to proceed to abdominal aortic stent grafting (Video 2).

Reference

1. Nienaber CA, Sakalihasan N, Clough RE, Aboukoura M, Mancuso E, Yeh JS, et al. Thoracic endovascular aortic repair (TEVAR) in proximal (type A) aortic dissection: Ready for a broader application? *J Thorac Cardiovasc Surg*. 2017;153:S3-11.

FIGURE 1. A, Computed tomographic scan on arrival revealed a type A intramural hematoma (*arrows*) involvement in the whole thoracic aorta. B and C, Repeated computed tomographic angiographic scans showed progression of type A intramural hematoma to type B aortic dissection and communication (*arrows*) between the hematoma and the aortic lumen. C, D, and E, Typical type B dissection was observed. F, Computed tomographic angiography reveals that the stent was in good condition and remained unchanged in position when compared with placement imaging. G, H, and I, Computed tomographic angiography showing a huge solitary penetrating aortic ulcer with minimal intramural hematoma.

VIDEO 1. Descending aortography showing a huge solitary penetrating aortic ulcer. Video available at: [http://www.jtcvsonline.org/article/S0022-5223\(17\)31915-3/fulltext](http://www.jtcvsonline.org/article/S0022-5223(17)31915-3/fulltext).

VIDEO 2. Abdominal aortic angiography demonstrating stent deployment. Video available at: [http://www.jtcvsonline.org/article/S0022-5223\(17\)31915-3/fulltext](http://www.jtcvsonline.org/article/S0022-5223(17)31915-3/fulltext).