A case of aorto-pulmonary fistula formation between descending aortic aneurysm and pulmonary artery

M Tomita, M Fukumoto, T Kato, A Inoue, H Nakano, H Arima

Citation

M Tomita, M Fukumoto, T Kato, A Inoue, H Nakano, H Arima. *A case of aorto-pulmonary fistula formation between descending aortic aneurysm and pulmonary artery*. The Internet Journal of Anesthesiology. 2007 Volume 18 Number 2.

Abstract

Previously reported aorto-pulmonary fistula located at ascending aorta and the patients developed cardiac failure soon after the fistula formation. We experienced a case of fistula formation at descending aorta. The patient remained asymptomatic since the shunt flow was not so large. Intraoperative transesophageal echocardiography could detect the shunt flow.

INTRODUCTION

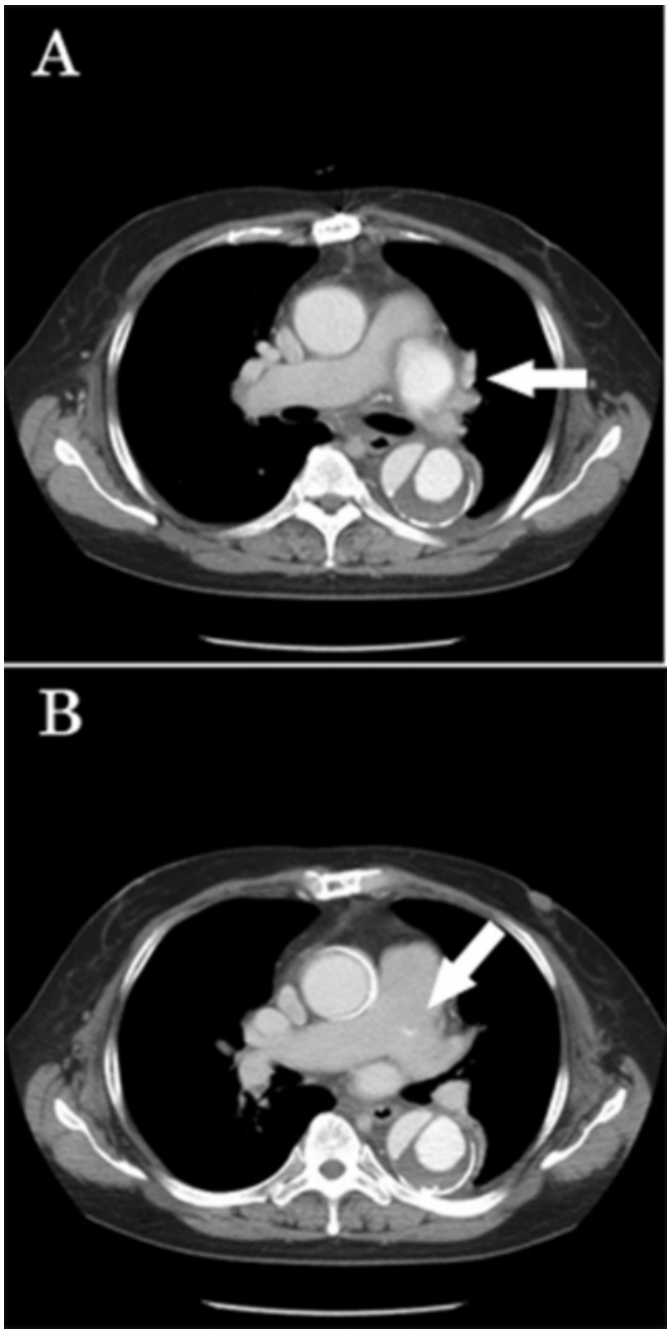
Acquired aorto-pulmonary fistula (APF) is a rare complication of endocarditis, chest trauma or aortic aneurysm. There are several reports regarding APF, but ascending aorta is the only site of APF formation reported[1,2,3,4]. We experienced a rare case of APF between descending aorta and pulmonary artery (PA).

CASE REPORT

A 56-year-old female admitted to our hospital for descending aortic graft replacement. She had undergone ascending aortic graft replacement for type I aortic dissection 9 years previously. She remained asymptomatic other than hoarseness, but descending aorta had expanded up to 70 mm. Figure 1A demonstrates distorted descending aorta (white arrow). Figure 1B is three slices below Figure1A image. A small spot of contrast agent (white arrow) is demonstrated in the main PA adjacent to the expanded descending aorta, and APF was suspected.

Figure 1

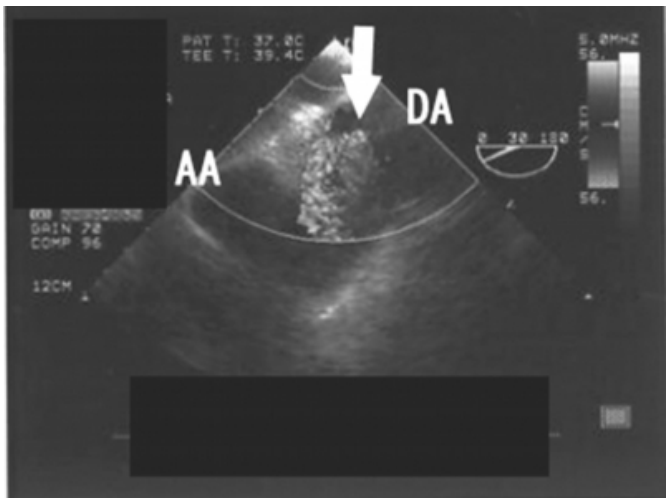
Figure 1



In the operating room, general anesthesia was induced uneventfully and PA catheter was inserted. Oxygen partial pressure of right atrium and PA was 37.8 torr and 43.6 torr, respectively. Figure 2 demonstrates intraoperative transesophageal echocardiography 32 degrees rotated from aortic root short axis view. A streaky Doppler signal (white arrow) is demonstrated in the PA. (AA: ascending aorta, DA: descending aorta).

Figure 2

Figure 2



The surgery, including APF closure, was completed uneventfully and she was discharged from hospital on the 60th postoperative day.

APF is a rare pathological condition and previously reported cases developed cardiac failure soon after APF formation. In our case, the patient remained asymptomatic, so it was extremely difficult to suspect APF preoperatively without proficiently performed radiographic examinations. The view of Figure 2 is not included in the 20 standard images recommended by American Society of Echocardiography and Society of Cardiovascular Anesthesiologists for a systemic examination of transesophageal echocardiography. We are not sure whether the shunt Doppler signal could be identified, if the APF formation had not been suspected preoperatively. Since the site of APF formation located at the replaced area of aorta, bleeding from PA should be anticipated if APF remained unnoticed, as weaning of extacorporeal circulation proceeded.

References

1. Massetti M, Babatasi G, Saloux E, Bhoyroo S, Khayat A. Aorto-pulmonary fistula: a rare event in the revolution of a dissecting aneurysm of the thoracic aorta. Eur J Cardiothorac Surg 1997;11:994-6.
2. Gon S, Shioguchi S, Cho M, Chiba T, Tanaka K, Hata I, Irie Y, Imazeki T. Rupture of a chronic dissecting giant aneurysm into the pulmonary artery; report of a case. Kyobu Geka 2006;59:847-50
3. Kitamura T, Motomura N, Ohtsuka T, Shibata K, Takayama H, Kotsuka Y, Takamoto S. Aortopulmonary fistula in pseudoaneurysm after ascending aortic surgery. J Thorac Cardiovasc Surg 2003;126:904-5
4. Thistlethwaite PA, Kriett JM, Madani MM, Jamieson SW. Acquired aortopulmonary fistula in acute dissection. J Thorac Cardiovasc Surg 2001;121:1213-5

Author Information

Maiko Tomita, M.D.
Staff anesthesiologist, Department of Anesthesia and Critical Care, Okazaki City Hospital

Masatoshi Fukumoto, M.D.
Staff anesthesiologist, Department of Anesthesia and Critical Care, Okazaki City Hospital

Tae Kato, M.D.
Staff anesthesiologist, Department of Anesthesia and Critical Care, Okazaki City Hospital

Asuka Inoue, M.D.
Staff anesthesiologist, Department of Anesthesia and Critical Care, Okazaki City Hospital

Hiroshi Nakano, M.D, Ph.D.
Staff anesthesiologist, Department of Anesthesia and Critical Care, Okazaki City Hospital

Hajime Arima, M.D., Ph.D.
Chief anesthesiologist, Department of Anesthesia and Critical Care, Okazaki City Hospital