Case Report

Single Stage Operation with Two Different Incisions in a Patient with Ascending Aortic Aneurysm and Aortic Coarctation

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ABSTRACT
A case of successful a single stage repair of aortic coarctation and ascending aortic aneurysm in a 26-year-old man is presented. He was referred to our clinic due to chest pain. Because echocardiography had showed aneurysmatic ascending aorta and there was no distal peripheral arterial pulses, computed tomography was made. The computed tomography demonstrated giant ascending aorta and distal aortic coarctation. We performed Bentall procedure for ascending aorta and coarctation repair at single operation with two different incisions. At the one year follow-up, he was free of complications and two-dimensional echocardiography revealed normal heart contractility, good function of the aortic valvular prosthesis, a regular ascending aorta, and no evidence of aneurysm.

Key words: Ascending aort, aneurysm, aortic coarctation, single-stage repair, Bentall procedure

ÖZET
Aort Koarktasyonu ve Assandan Aort Anevrizması Bulunan Bir Hastada İki Farklı İnsizyonla Tek Evreli Cerrahi

Anahtar Sözcükler: Assandan aort, anevrizma, aortik koarktasyon, tek evreli tamir, bental prosedürü

Aortic coarctation is a serious pathology required surgical treatment. About 50% of uncorrected isolated aortic coarctation cases are lost up to the age of 10, only 10% may reach the age of 50 (1). The most common reason for death from untreated aortic coarctation is the aneurysm or rupture of aorta or side branches with a rate of 23% (1).

Aortic insufficiency resulting from anulooaortic ectasia and ascending aortic aneurysm together with aortic coarctation rarely occur, and surgical treatment is difficult. It is very important to decide whether surgical operation will be of one and two stage, and to determine intra-operative strategy. Aortic coarctation is a congenital vessel disease that can cause such complications as myocardial infarction, congestive cardiac failure, infective endocarditis, aortic aneurysm, aortic dissection or rupture and intracranial bleeding as a result of present resistant hypertension in adult age (2).

The aneurysm of the ascending aorta is a life-threatening complication of aortic coarctation. Studies report various operations done when aortic aneurysm (1-3) occur together with aortic coarctation. This combined condition is usually treated by one or two-stage surgery when aortic aneurysm exists. If there is ascending aortic aneurysm in addition to aortic coarctation without aortic dissection, the first repair must be performed for aortic coarctation. In our patient, ascending aorta aneurysm and aortic coarctation were operated on the same stage with two different incisions.

CASE REPORT
A 26-year-old man was referred to our unit for sudden onset of retrosternal, constrictive pain. A 3/6 systolic murmur was heard in the aortic area. Blood pressure was 160/100 mmHg in upper extremity and 80/40 mmHg in the lower extremity. Chest radiography showed rib notching and very large mediastinal size (Figure 1A). A computerised tomogram (CT) of the chest revealed a giant aneurysm of the ascending aorta, normal aortic arch, and a coarctation of the aortic isthmus (Figure 1B). Transsthoracic echocardiogram (TTE) confirmed the presence of an aneurysm of the ascending aorta and advanced aortic valve incompetence. The diameter of the ascending aorta was 11cm. The patient underwent emergency surgery. In order to improve of the coarctation, a left thoracotomy was carried out at the fourth intercostal (Figure 1C).

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204
The patchplasty was made with PTFE patch for coarctation repair with side clamping without atrio-femoral shunt. Then, the patient was rotated to the flat position, and median sternotomy was made. The pericardium was opened. The aneurysm was very large, but the aneurysm was limited to the ascending aorta, and the proximal segment of the arcus aorta didn’t affect (Figure 1D). There was cross-clamping site. Cardiopulmonary bypass was initiated with axillary arterial and right atrium venous cannulation. The ascending aorta was cross-clamped and incised transversely. There was no dissection in ascending aorta. The sinuses of valsalva were abnormal, they were suspended, and the coronary ostia were displaced. The aortic valve was bicuspid, with partially fused, thickened, and calcified leaflets. The aortic valve was excised, and the segment of the ascending aorta comprising the aneurysmal part was resected. The patient was performed modified Bentall procedure with 30 mm ascending aortic graft as described by Yakut et al (4). The anastomoses were reinforced with gelatin resorcinol glue and teflon strips. The thoracotomy and then sternotomy were closed after bleeding control. Intensive care unit stay was 4 days. No cerebral, respiratory or renal complications occurred.

Figure 1A: Chest radiography showed rib notching and very large mediastinal site.
Figure 1B: Computerised tomogram of the chest revealed a giant aneurysm of the ascending aorta, normal aortic arch, and a coarctation of the aortic isthmus.
Figure 1C: A left thoracotomy showing descending aortic coarctation under right subclavian artery.
Figure 1D: After median sternotomy, giant ascending aortic aneurysm was showed in peroperative term.
REFERENCES


