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Case Report Open Access

Successful Treatment of Painless Type A Aortic Dissection without any Major Concomitant Symptoms

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Abstract

Painless aortic dissection is a relatively rare pathology. We report the case of painless type A aortic dissection without any concomitant symptoms such as congestive heart failure, cardiac ischemia, stroke, or paraplegia. The patient underwent total arch replacement with selective cerebral perfusion under deep hypothermic circulatory arrest. The postoperative course was uneventful and the patient was discharged with no complications. This case shows that a high index of suspicion and cooperation between the hospital and the referring clinic are crucial in making a definitive diagnosis of painless type A aortic dissection and in achieving successful surgical treatment.

Keywords: Concomitant symptoms; Total arch replacement; Type A aortic dissection

Introduction

As many as 40% of patients suffering from acute aortic dissection succumb to death immediately [1]. Aortic dissection should be considered in the setting of severe, unrelenting chest pain, which is present in most patients [1]. In the International Registry of Acute Aortic Dissection study, Hagan et al. [2] reported that 95.5% of patients complained of pain. However, some cases have been reported as painless aortic dissection presenting with atypical features or symptoms such as neurological or cardiac findings without pain [3]. We report the case of a referred patient with painless aortic dissection detected by coronary Computed Tomography (CT) who had only slight dyspnea.

Case Report

An 80-year-old man was referred to our hospital by a private clinician for the evaluation of ischemic heart disease by coronary CT. The patient had slight dyspnea, which became less severe by taking a deep breath. He indicated no chest or back pain up to the time of his referral examination. He had been diagnosed as having hypertension and atrial fibrillation with medication.

Coronary CT applied to rule out any ischemic heart disease showed intact coronary arteries. However, the CT revealed type A aortic dissection in the transverse plane without any malperfusion of other organs (Figure 1). The patient was immediately referred to our hospital by a cardiologist under a diagnosis of painless chronic type A aortic dissection. His blood pressure was 215/131 mmHg, his heart rate was 62 bpm (irregular), and the room air oxygen saturation was 97%. Electrocardiogram and blood examination showed no evidence of cardiac ischemia due to aortic dissection. Continuous antihypertensive medication was administrated and minimum required examinations such as brain CT, echocardiography, and carotid ultrasound were performed. Immediate operation was scheduled.

Median sternotomy was performed and cardiopulmonary bypass was established through the femoral and axillary arteries, with two-staged venous cannula from the right atrium. Under circulatory arrest with selective cerebral perfusion at a rectal temperature of 25°C, the ascending aorta was opened. On opening the ascending aorta, an intimal tear was observed in the proximal side of the aortic arch and subsequent retrograde dissection was found towards the aortic root. Total arch replacement was performed using 28 mm woven Dacron graft (J Graft SHIELD NEO, JUNKEN MEDICAL Co., Ltd., Chiba, Japan).

The postoperative course was uneventful (Figure 2) and the patient was discharged 2 weeks after the operation.

Discussion

Approximately 10% of aortic dissections are reported to be painless and may present with concomitant symptoms secondary to dissection complications [4]. Aortic dissection is misdiagnosed in up to 38% of patients on initial evaluation, and a definitive diagnosis is made at autopsy in up to 28% of patients [3,5].

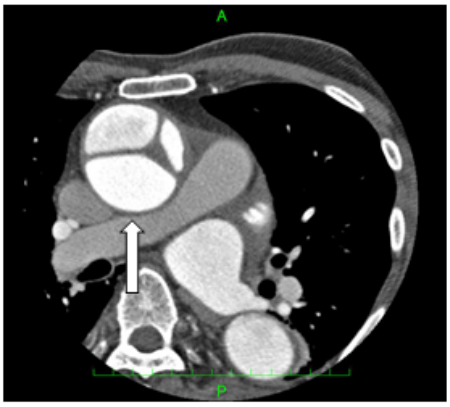

Figure 1: Initial contrast-enhanced CT showing communicating type A aortic dissection with three-opened pseudolumens (arrow).

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Figure 2: Postoperative CT angiography showing no abnormal findings.

On the other hand, some patients suffer from some concomitant symptoms after aortic dissection even if they feel no pain. In the present case, the patient visited a private clinic because of slight dyspnea, becoming less severe by taking a deep breath. The patient indicated no major concomitant symptoms such as severe dyspnea due to congestive heart failure and neurological symptoms attributable to malperfusion of the neck vessels. Other symptoms caused by visceral malperfusion such as paraplegia, acute peripheral arterial or bowel ischemia, and renal dysfunction, if associated with pain, are significant. However, the patient suffered no "classic" pain up to the time of his referral examination.

On opening the ascending aorta perioperatively, a large entry was recognized in the aortic arch. Total arch replacement was therefore performed. Additionally, the aortic wall was hard and thickened, indicating that the patient might have suffered from chronic type A aortic dissection.

Conclusion

We successfully treated a patient with painless type A aortic dissection which was detected by coronary CT while screening for ischemic heart disease. A high index of suspicion for painless type A aortic dissection as well as hospital and clinic cooperation are essential in making a quick and definitive diagnosis of this creeping emergency which is associated with serious morbidity and mortality.

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Conflict of interest statement

Dr. Yasunori Iida and all co-authors declare that they have no conflict of interest associated with this study.

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