COMPLETE PERCUTANEOUS REVASCULARIZATION OF A SINGLE CORONARY OSTIUM IN A 84 YEAR-OLD WOMAN

ABSTRACT
Coronary arteries originating from a single coronary ostium is a rare condition. The incidence is 0.03% of patient undergoing diagnostic coronary angiography. Approximately 20 possible variations of single coronary artery have been described. Of these, single coronary artery arising from the right sinus of valsalva are extremely rare. Some of the patients are clinically silent, except for cases in which a coronary artery passes between the pulmonary artery and aorta, which can present with sudden death especially in the athletes. Yet, most of the patient can present with recurrent ischemia or heart failure at younger age. Treatment is still controversial and no guidelines for treatment of this condition exist. We report the case of an octogenarean patient with acute inferior myocardial infarction who was managed by primary percutaneous coronary intervention (PCI) to the single coronary ostium.

Key Words: Geriatrics; Coronary Vessel Anomalies; Inferior Wall Myocardial Infarction.

OLGU SUNUMU
TEK KORONER OSTÜMLU 84 YAŞINDAKİ HASTADA TAM PERKÜTAN KORONER REVASKÜLARİZASYON

ÖZ

Anahatar Sözcükler: Geriatrik; Inferior Miyokard Infarktüsü; Koroner Arter Anomali.
INTRODUCTION

Single coronary artery is a rare congenital anomaly that may be associated with sudden cardiac death after exercise and angina in the young age. We present the case of an old patient with acute inferior myocardial infarction who was managed by primary percutaneous coronary intervention (PCI) performed through a single coronary artery originating from a single ostium in the right sinus of Valsalva.

CASE REPORT

A 84-year old woman was admitted to the emergency room with severe retrosternal chest pain. She had a medical history of hypertension and diabetes mellitus. On admission, she had a blood pressure of 100/70 mmHg, a regular pulse of 65 beats per minute, and a breath rate of 12 per minute with 97% of partial oxygen saturation. Electrocardiography revealed a regular sinus rhythm and persistent ST segment elevation in the leads D2, D3, and aVF. The patient was immediately transferred to the catheterization laboratory. Left coronary artery catheterization with Judkins left diagnostic catheter did not demonstrate any vessel originating from the left coronary sinus. Right coronary artery catheterization with Judkins right guiding catheter demonstrated that right coronary artery (RCA), left anterior descending artery (LAD) and the circumflex artery (Cx) were all originating from a solitary ostium from the right sinus of Valsalva. The RCA had a 100% occlusion short after acute marginal branch. The Cx supplied its normal territory without significant obstruction, and the LAD had a 70% ostial obstruction (Figure 1). We decided to perform PCI of the RCA and LAD. Firstly a 0.014 floppy guidewire crossed the totally occluded segment of the RCA. Even after wiring, TIMI-2 flow was established, and 2.75 x 28 mm bare metal stent (Gazelle, Biosensors, Singapore) was deployed successfully. The control angiography showed good result without any residual stenosis or complication (Figure 2). Next, decision was then made to proceed with PCI of the LAD. Second 0.014 floppy guidewire was advanced through the ostial lesion of LAD. A 3.5x8 mm bare metal stent (Gazelle, Biosensors, Singapore) was deployed at the ostium of the LAD with excellent result (Figure 3). The patient was discharged on the fifth day after the intervention.
DISCUSSION

The coronary circulation arising from a single coronary ostium is rare, with incidence estimated at approximately less than 0.03% of general population (1). It was first reported by Hyrtl in 1841 (2,3). Shirani et al, described a classification that is anatomically based, depending on the origin and pattern of distribution of the coronary arteries (4). In this classification system, type I represents an ostium of the coronary artery originating from the left aortic sinus, and type II indicates that an ostium of the coronary artery originates from the right aortic sinus. Subtypes depend on the course of the coronary arteries. These patients are usually asymptomatic. Nevertheless ischemia can occur due to anomalous pathway in which a coronary artery passes between pulmonary artery and aorta (5). These patients can present with sudden death in the young age due to extrinsic compression of the myocardium’s sole source of blood, so the appropriate equipment and the provision of surgical back-up are essential for the technical success of the intervention.

PCI bears some difficulties due to the unusual course of the coronary artery and angle of the coronary ostium. Although serious complications, such as coronary dissection, obstruction of the untargetted coronary artery as a result of the plaque shifting or extension of the dissection can occur during the procedure. The ostium of the coronary arteries are usually detected during coronary angiography, but exact course determination and relationship are difficult to visualize. The multi detector computed tomography is useful for accurate visualization of the entire course of the coronary artery. In conclusion, PCI on a single coronary ostium can be complicated because of the myocardium’s sole source of blood, so the appropriate equipment and the provision of surgical back-up are essential for the technical success of the intervention.

REFERENCES