Successful Treatment of Myocardial Bridge with Alcohol Septal Ablation in Hypertrophic Obstructive Cardiomyopathy

Murat Sunbul, MD[1] Alper Kepez, MD[1] Kursat Tigen, MD[1] Okan Erdogan, MD[1] Bulent Mutlu, MD[1]

[1] Department of Cardiology, Faculty of Medicine, Marmara University, Istanbul, Turkey

Int J Angiol 2014;23:69–70.

Address for correspondence Murat Sunbul, MD, Marmara Üniversitesi Eğitim ve Araştırma Hastanesi, Kardiyoloji Kliniği, Fevzi Cakmak Mahallesi, Mimar Sinan Caddesi, No: 41 Ustkaynarca, Postal Code: 34899, Pendik, İstanbul, Turkey (e-mail: drsunbul@yahoo.com.tr).

Abstract

Hypertrophic obstructive cardiomyopathy (HOCM) is characterized by left ventricular hypertrophy of various morphologies, with variety of clinical manifestations and hemodynamic dysfunctions. Myocardial bridge (MB) is frequently seen in HOCM patients and the decrease of flow in the coronary artery segment going intramurally through the myocardium beneath a muscle bridge is also associated with angina, myocardial ischemia, arrhythmia, and sudden death in these patients. We present here a rare case of successful treatment of MB with alcohol septal ablation in hypertrophic cardiomyopathy which has not been reported previously.

Keywords
- hypertrophic cardiomyopathy
- alcohol septal ablation
- myocardial bridge

Hypertrophic obstructive cardiomyopathy (HOCM) is characterized by left ventricular (LV) hypertrophy of various morphologies, with variety of clinical manifestations and hemodynamic dysfunctions. Patients with HOCM usually have certain abnormalities including diastolic dysfunction, myocardial ischemia, mitral regurgitation, myocardial bridge (MB), and LV outflow obstruction related to excessive myocardial hypertrophy.[1] These abnormalities can cause serious symptoms such as chest pain, palpitations, dyspnea, fatigue, and syncope due to myocardial ischemia and LV outflow obstruction. We present here a rare case of successful treatment of MB with alcohol septal ablation in hypertrophic cardiomyopathy which has not been reported previously.

Case Presentation

A 36-year-old man with a history of HOCM for 10 years had recently presented with exercise-induced dyspnea and chest pain. Alcohol septal ablation was performed because of severe symptoms, including dyspnea and angina, 5 years ago and intracardiac defibrillator was implanted due to nonsustained ventricular tachycardia. Three years ago, the patient underwent coronary angiography due to anterior ischemia documented in myocardial scintigraphy, which revealed MB in left anterior descending artery (►**Fig. 1**). Recent transthoracic echocardiography showed asymmetric septal hypertrophy, a significant dynamic LV outflow tract (LVOT) gradient of 89 mm Hg at Valsalva maneuver and systolic anterior motion of mitral valve. Alcohol septal ablation was performed due to recurrent severe symptoms. LVOT gradient was decreased and MB was improved after alcohol septal ablation (►**Fig. 2**). The patient was discharged 3 days later, and the symptoms were improved completely.

Discussion

HOCM can cause symptoms such as dyspnea, angina, and syncope due to obstruction of LVOT. On the contrary, MB is frequently seen in HOCM and the decrease of flow in the coronary artery segment going intramurally through the myocardium beneath a muscle bridge is also associated with angina, myocardial ischemia, arrhythmia, and sudden death in HOCM.[2] Alcohol injection with a coronary catheter to induce prespecified infarction in the septum may serve as an alternative treatment to myectomy not only for LVOT gradient

published online
February 17, 2014

DOI http://dx.doi.org/10.1055/s-0033-1353241.
ISSN 1061-1711.

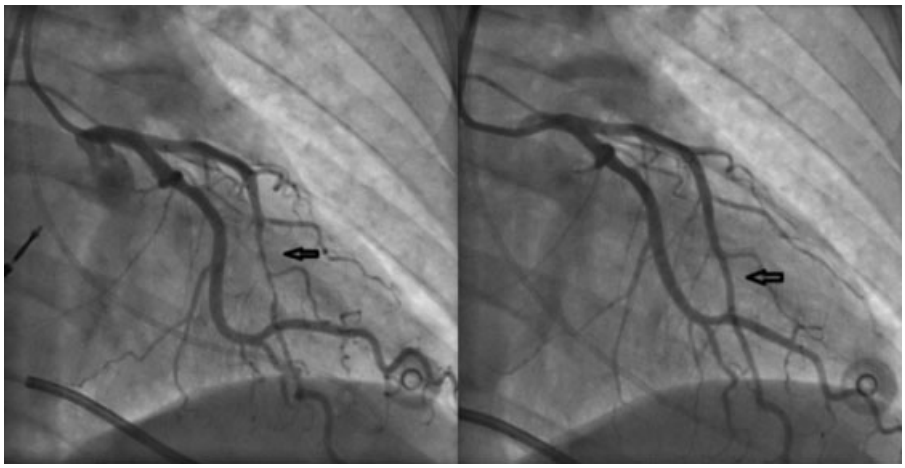

Fig. 1 Right cranial view of left anterior descending and circumflex arteries during systole (left) and diastole (right) of myocardium. Arrows indicate marked myocardial bridge with systole (left) and normal coronary artery with diastole (right) in the left anterior descending artery.

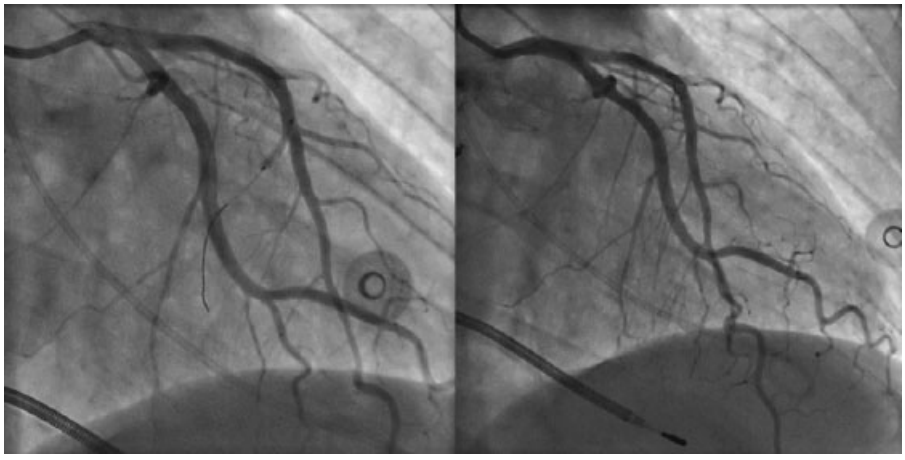

Fig. 2 Right cranial view; alcohol septal ablation was performed to third septal branch of left anterior descending artery (left), myocardial bridge improved remarkably after alcohol septal ablation (right).

but also for the successful treatment of MB in HOCM, as seen in our case. It is important to follow-up the patient carefully because of the possibility of recurrence of the gradient and myocardial ischemia.

References

1 Maron BJ. Hypertrophic cardiomyopathy: a systematic review. JAMA 2002;287(10):1308–1320
2 Möhlenkamp S, Hort W, Ge J, Erbel R. Update on myocardial bridging. Circulation 2002;106(20):2616–2622