



TREATMENT OF LEFT ANTERIOR DESCENDING ARTERY ANEURYSM

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ABSTRACT

Coronary artery aneurysms (CAAs) are rare and their management is controversial. Their incidence varies from 1,5% to 5% of the coronary angiographies, with predilection of the right coronary artery. Unruptured coronary aneurysms are often silent and may remain undiagnosed. The etiology can be either congenital or acquired. We describe a case of a left anterior descending artery (LAD) aneurysm treated with an off-pump surgical revascularization with a LIMA to LAD without exclusion or ligation of the aneurysm.

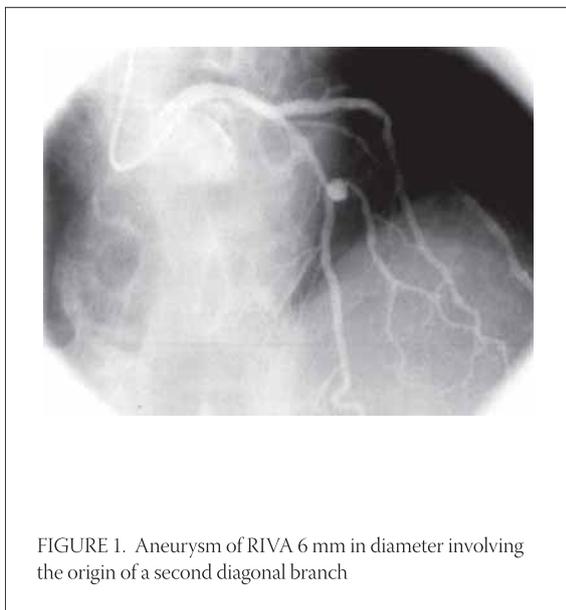
KEY WORDS: Coronary aneurysm, off-pump CABG.

INTRODUCTION

CAAs are defined by the Coronary Artery Surgery Study as a coronary dilatation that exceeds more than 1,5 times the diameter of normal adjacent segments, or the diameter of the patient's largest coronary vessel (1). Morgagni reported the first case of coronary artery aneurysm in 1961 (1). Contemporary incidence of CAAs varies from 1,5% to 5% of the coronary angiographies, with male dominance. The most common etiology is atherosclerosis (50%) (3). CAAs of atherosclerotic or inflammatory origin, are usually multiple and involve more than one coronary vessel, compared to the congenital, traumatic or dissecting ones (2,3). CAAs most frequently develop in the right coronary artery, while a LAD involvement is less common. The natural history of CAAs is largely unknown: the previous reports (2-4) have listed thrombosis and distal embolization, rupture and spasm.

CASE REPORT

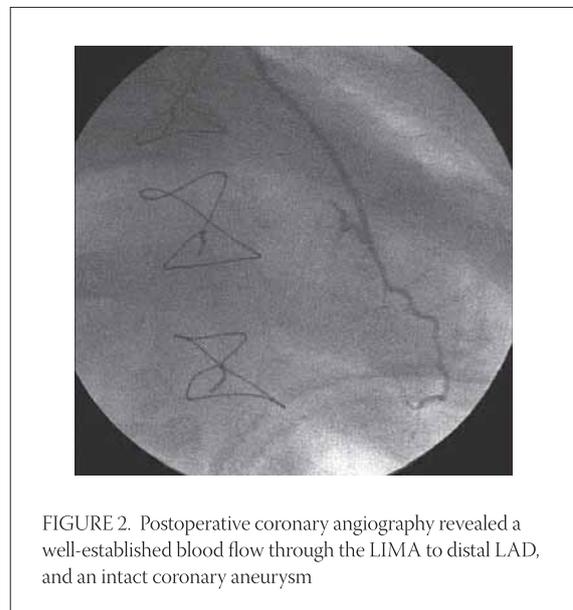
We report a case of 60-year-old man, obese, under anti-hypertensive therapy and β -blockers, who complained of effort dyspnea. After positive stress test at 100W on the anterior wall, without angina, he was admitted into our institution. The coronary angiography showed calcified left main stem. The LAD was calcified in the proximal third, with a significant stenosis (20 mm long) in the middle third, followed by an aneurysm 6 mm in diameter involving the origin of a second diagonal branch (Figure 1). Distal to the lesion, the LAD was normal as well as the other coronaries. Septal branches emerging from the LAD proximally and distally to the aneurysm were well visualized. We decided that the LAD stent involved too much risk (5), because in the angiogram the lesion seemed severely calcified. Therefore, we perform an elective surgical revascularization with an off pump LIMA to LAD, using an *Octopus*[®] stabilizer (*Medtronic Inc, USA*). Intra-operatively, the aneurysm proved to be calcified, so we preferred to leave it undisturbed, considering that having a mammary graft distally would decrease the flow stress on the aneurysmatic wall, and avoid complications that other procedures like ligation, plication, end to end anastomosis or patch of the aneurysm cause as



stated in the literature (6-10). Postoperative coronary angiography revealed a well-established blood flow through the LIMA to distal LAD, and an intact coronary aneurysm (Figure 2). Patient was extubated in the 6th postoperative hour, and discharged from Intensive care unit on the 1st postoperative day. He was discharged from hospital on the 7th postoperative day, symptom free and with normal electrocardiographic pattern. He was placed on medical therapy that included calcium antagonist, transdermic nitrates and aspirin. Ten months post-operatively, he was symptom free with a negative stress test, on aspirin and anti-hypertensive treatment.

DISCUSSION

Natural history of CAAs leads to calcification, intraaneurismatic thrombosis otherwise may lead to spontaneous rupture and bleeding. Preoperative evaluation of digitally derived data allowed us to confirm angiogram finding and make proper decision intra-operatively. Considering that we encountered a calcified aneurism without a threat of a rupture we decided to apply terminolateral anastomosis distally and avoid aneurysm disturbance. Postoperative period was uneventful; patient was symptom free, chronically medicated due to other causes.



CONCLUSION

Surgical treatment of CAAs is a great challenge. It depends on good preoperative diagnostic tool and surgical experience and skill. Creating a bypass without disturbing the aneurysm was optimal choice for the patient in this particular case.

REFERENCES

- (1) Kawasaki disease: Proceedings of the Second International Kawasaki Symposium. New York, NY, A.R.Liss, 1987: 325-339.
- (2) Morgagni J.B. De sedibus et causis morborum. Venectus Tom I:1961; Epis 27, Art 28.
- (3) Syed M., Lesch M. Coronary artery aneurysm: a review. *Progress in Cardiovascular Diseases*, 1997; 40: 77-84
- (4) Virmani R., Robinowitz M., Atkinson J.B. et al. Acquired coronary arterial aneurism: an autopsy study of 52 patients. *Human Pathology*, 1986; 17: 575-583.
- (5) Von Rotz F., Niederhauser U., Straumann E., Kurz D., Brtel O., Turina M.I. Myocardial infarction caused by a large coronary artery aneurysm. *Ann. Thorac. Surg.* 2000; 69:1568-1569
- (6) Leung A.W., Wong P., Wu C.W., Tsui P.T., Mok N.S., Lau S.T. Left main coronary artery aneurysm: sealing by stent graft and long term follow-up. *Catheter Cardiovasc. Interv.* 2000; 51:205-209
- (7) Dralle J.G., Turner C., Hsu J., Replege R.L. Coronary artery aneurysm after angioplasty and atherectomy. *Ann. Thorac. Surg.* 1995; 59:1030-1035
- (8) Harandi S., Johnston S.B., Wood R.E., Roberts W.C. Operative therapy of coronary arterial aneurysm. *Am. J. Cardiol.* 1999; 83: 1290-1293
- (9) Westaby S., Vaccari G., Katsumata T. Direct repair of a giant right coronary aneurysm. *Ann Thorac Surg* 1999; 68: 1401-1403
- (10) Kuwaki K.K., Morishita K.K., Abe T.T. Saphenous vein patch angioplasty for a discrete saccular aneurysm of left anterior descending coronary artery. *Ann. Thorac. Surg.* 2000; 25: 342-344