Coronary revascularization surgery (CRS) is considered the best alternative to treat patients with main left coronary artery disease (MLCA). The therapeutic effectiveness and long-term benefits of this treatment have been set since coronary surgery started to develop. (1-3)

The superiority of the surgical therapy over the medical therapy for MLCA disease has been demonstrated in the CASS registry; 1484 patients were followed-up for more than 16 years, and the average survival rate of surgical patients was 13.3, compared to 6.6 years for medically treated patients. (2) Various surgical groups informed their immediate post-surgical outcomes for a series of 300 patients with MLCA disease, with a hospital mortality rate of 3% to 4.2%. (4) Ellis et al. reported late mortality figures for 3 years of follow-up ranging from 4% to 40%, and related to the number of associated diseases among the different patients. (5) Recently, improvements in post surgical care, as well as the use of arterial conduits, have spread this therapeutic benefit to patients with higher preoperative risk. In a recent survey on more than 16,000 patients with MLCA disease, Faxon et al. reported a hospital mortality rate of 2.3%, with a late survival rate of 94%, and a period free of revascularization of 93%. (6)

In our country, the outcomes of MLCA surgery have significantly improved throughout these years. A long way off are the surgical outcomes presented in the CONAREC and ESMUCICA studies; (7, 8) At present, not only has surgical mortality decreased significantly but also, in contrast to these studies, MLCA disease is no more an independent predictor of preoperative risk.

Our experience in treating patients with MLCA disease during the last 6 years is based on 365 patients who underwent surgery with no extracorporeal circulation. The global mortality of the series was 4.1%, and 90% of the patients had no significant complications, with a very low postoperative morbidity (auricular fibrillation 11%, AMI 1.9%, reoperation due to bleeding 3%, stroke 1.1%, acute respiratory failure 2.1%), and 85% of the patients were extubated in the operating room.

ARE CRS AND CA EQUIVALENT TREATMENTS TO MLCA DISEASE?

The use of coronary angioplasty (CA) for the MLCA treatment is an interesting alternative, since it is the most proximal anatomic area of coronary circulation, with a wider diameter. However, three anatomic cases limit the success of the CA treatment: 1) only 6% to 9% of the patients have MLCA disease as unique lesion; instead, 70% to 80% of the patients with lesions in MLCA also have multiple vessel disease, and CRS is the therapy that guarantees complete revascularization; 2) in 40% to 94% of the cases, the lesions occur in the distal trunk and/or expand to the coronary arteries with bifurcated or trifurcated lesions; 3) more than half of MLCA lesions have a significant degree of calcification. (9) These cases influence negatively on the CA outcome, and do not influence on the CRS because it is a different revascularization method. The outcomes published in various studies on 1155 patients with MLCA disease and treated with CA show an average hospital mortality rate of 6% and a late mortality (1 to 2 years) of 17% (3% to 31%), with an average need for revascularization of 29% (15% to 34%). (4) The outcomes of seven published studies on 599 patients with MLCA and drug eluting stents (DES) show a significant decrease in hospital mortality rate (2.4%), a reduction in late mortality at 18 months (7%), and a need for revascularization of 13% (2% to 38%). (4) Unfortunately, these studies present significant limitations, such as the inclusion of only few patients in each study, an incomplete angiographic follow-up to quantify the restenosis degree, and a short follow-up period (11 months average) with no control groups, which makes it impossible to discard bias when selecting the procedure. On the contrary, in one of the few published studies with complete angiographic follow-up, Price et al. report a higher restenosis index, 34% in 3 months, and up to 44% in 9

---

MTSAC Full Member of the Sociedad Argentina de Cardiología
1 Cardiac Surgery Department Chief. ICBA, Argentina
months. (10) These significant differences in restenosis degree are due to disfavorable outcomes in the distal trunk lesions, with bifurcations and trifurcations, which would constitute prohibitive anatomic scenarios for CA in patients with MLCA lesions. Finally, the outcomes of the SYNTAX (Synergy between PCI with Taxus drug-eluting stent and cardiac surgery) study, recently presented in the 2008 European Congress of Cardiology, show that CA was inferior to CRS in treating multiple coronary artery disease. This randomized study included 1800 patients with lesions in multiple vessels and MLCA disease, treated with CRS and CA. After a year of follow-up, the CA was inferior to the CRS in major cardiovascular and cerebrovascular events (death, myocardial infarction, stroke, or need for a new revascularization, 17.8% versus 12.1%). The SYNTAX study also showed that the CRS significantly improved late survival in a one-year follow-up, with 23% of relative benefit in mortality (Figure 1).

Therefore, this study demonstrates that they are not equivalent therapies for groups of complex and high risk patients, and that the CRS is the therapy to choose. This study is more representative of the real world, since no complex and high risk patients have been included in previous communications, probably due to the study design or the selection criteria. Its outcomes are comparable to those in low risk populations. With these new outcomes, it is crucial to inform high risk patients properly about the lower late survival, about the risk of stent thrombosis, and about the need for new reinterventions, before performing CA with conventional stents or with DES on these patients. While stent thrombosis is not very frequent, it causes complete occlusion of left coronary circulation, which is fatal in 40% of the cases. Conversely, occlusion of coronary bridges usually occur together with angina but not with fatal events, since native circulation is not involved.

Borracci et al. (11) share their experience on 174 surgical patients with MLCA, operated within a four-year period in three facilities, with very good intrahospital morbimortality outcomes. These authors try to perform a long-term analysis of the outcomes, but these outcomes are not very representative due to the short average follow-up period of 4 and 5 years with few risk patients. However, the authors should be recognized for reflecting the early outcomes of coronary surgery in patients with MLCA lesions.

BIBLIOGRAPHY


