Regarding the Modification of an Old Procedure (Vineberg) in the Stem Cell Era - a New Strategy?

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I read with interest the above manuscript of Dallan et al[1] outlining the management of 2 patients with severe/diffuse coronary artery disease (CAD) using a modified Vineberg implant. Both patients had a "favorable outcome". The author, in conclusion, suggested that this revascularization approach "should be further analyzed with follow-up and functional tests".

In 2004, I published a series on the management of 21 patients, all with CAD non - amenable to conventional revascularization procedures (percutaneous or otherwise), and ischemic myocardium[2]. All patients were managed surgically with a Vineberg implant, on the beating heart combined with transmyocardial laser revascularization (TMLR) of the anterior wall (8 to 16 sites). In all but 3 cases, the Vineberg implant was modified so that the distal end of the conduit, as it emerged from the muscular tunnel, was anastomosed to any patent LAD segment.

Eight of the 21 patients were studied with preoperative, postoperative - early (4 to 9 days) and post-operative - late (3 to 5 months) stress and rest nuclear imaging. All patients achieved complete relief of their angina. Serial perfusion scans demonstrated a 2-phase improvement in perfusion. One patient, who consented to undergo an angiography at 24 months, demonstrated several sites of a myocardial "blush" consistent with neovascularization.

I suspect that this subset of patients will continue to increase and cannot emphasize the need for continued development of unique, hybrid, techniques to address this clinical dilemma. As clearly demonstrated in this report, such techniques may include the resuscitation of shelved "obsolete" procedures.

Keywords

Coronary artery disease; myocardial reperfusion; myocardial revascularization.

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References

1. Dallan LAO, Gowdak LHW, Lisboa LAF, Milanez AMM, Platatia F, Moreira LF, et al. Modificação de antigo método (Vineberg) na era das células tronco: nova tática? Arq, Bras. Cardiol 2009;93(5):e67-e69.
2. Quigley RL. Synergy of old and new technology results in successful revascularization of the anterior myocardium with relief of angina in the absence of suitable targets. Heart Surg Forum. 2004;7(5):E343-8.

Reply

I read with interest the letter sent to the Brazilian Archives of Cardiology regarding our article "Modification of an Old Procedure (Vineberg) in the Stem Cell Era - a New Strategy?"[1]. In it, Dr. R. L. Quigley elegantly states his concern with the surgical management of this special group of patients with refractory angina, in spite of the fact that all traditional methods of treatment have been employed unsuccessfully. We are aware that as the disease complexity increases, new challenges appear in the search for safe and efficient therapeutic strategies for these patients. One example of this search is the creativity that involved the initial technique proposed more than 50 years ago by Dr. Vineberg. This past has been revisited so that, in the light of more modern techniques being used or being developed (laser transmyocardial revascularization, cell therapy etc), novel treatment options can emerge.

In both our study and Dr. Quigley' study[2], there was difficulty in employing the "conventional" right myocardial revascularization and the surgeon took advantage of this "revisited past" to innovate. Another point worth mentioning is that both studies showed quite satisfactory initial outcomes, with angina relief and improved myocardial perfusion. Our

patients were submitted to a hemodynamic study in the postoperative period and areas with presence of diffuse contrast were identified amid the ischemic myocardium, suggesting neovascularization. We do not normally verify this aspect of the capillary network when left internal thoracic artery is anastomosed directly to the left interventricular branch of the left coronary artery, without being previously tunnelized through the myocardium. We also verified good graft flow with a patent coronary anastomosis, as one of our concerns was that there would be no constrictions along the intramyocardial trajectory of the left internal thoracic artery, which would have impaired its distal flow.

In opposition to all our patients, all patients reported by Dr. Quigley also underwent laser transmyocardial revascularization, which might have contributed favorably and synergistically to the improvement in the myocardial ischemia observed by him. I believe that isolated or combined alternative techniques must be further studied in larger series of patients, with longer follow-up periods.

Sincerely,

Prof. Luís Alberto O. Dallan

References

1. Dallan LAO, Gowdak LHW, Lisboa LAF, Milanez AMM, Platatia F, Moreira LF, et al. Modificação de antigo método (Vineberg) na era das células tronco: nova tática? Arq, Bras. Cardiol 2009;93(5):e67-e69.
2. Quigley RL. Synergy of old and new technology results in successful revascularization of the anterior myocardium with relief of angina in the absence of suitable targets. Heart Surg Forum. 2004;7(5):E343-8.