

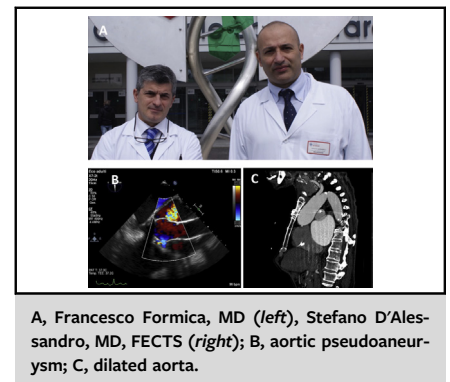
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## Commentary: When the heart team may save the patient's heart!

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In re sternotomy, sternal division carries an increased risk of injury of major cardiac structures because of the presence of adhesions between the posterior aspect of the bone and the right ventricle, ascending aorta, or bypass grafts. Early mortality is higher in patients with re sternotomy complicated by injury relative to patients without injury during re sternotomy (18.6% vs 6.5%, respectively).<sup>1</sup> Furthermore, injury of the ascending aorta is relatively frequent immediately after re sternotomy, and such injury increases the rate of in-hospital mortality. When an unexpected major injury occurs, expeditious institution of cardiopulmonary bypass (CPB) is crucial, and the early outcome often is negatively affected by the time consumed in instituting the CPB or other “rescue” maneuvers. Pre-operative imaging screenings and ad hoc protocols<sup>2</sup> are now routinely applied to identify very high-risk patients, and such screenings represent a recognized approach for planning a high-risk operation in detail, especially when the ascending aorta is in contact with the sternum. In such a complex scenario, the conventional approach is represented by the institution of CPB through the femoral vessels or the right axillary artery and the femoral vein, starting with the CPB and cooling the patients [even at 18°C-20°C] and finally performing the sternotomy and the adherence dissection during a variable period of circulatory arrest, with the time depending on the tenacity of tissue adhesions, the fragility of the tissue of the heart and the great vessels, the dislocation of cardiac cavities,



### CENTRAL MESSAGE

Percutaneous cardioplegic arrest and pulmonary venting is a strategy that can allow a safe surgery in complex reoperations. The synergy within the heart team may increase the likelihood of survival.

and the experience of the surgeon. This is often our conventional approach. In this issue of the *Journal*, Mehta and colleagues<sup>3</sup> from the Cleveland Clinic present their interesting and useful surgical approach in very complex patients who needed re sternotomy. This relatively innovative approach consists of percutaneous cardioplegic arrest and percutaneous pulmonary venting before re sternotomy. Since 2004, Mehta and colleagues<sup>3</sup> have used this surgical strategy in 6 consecutive high-risk patients. Mehta and colleagues<sup>3</sup> deserve to be congratulated for their excellent results. All patients were discharged alive, no permanent complications were reported and, last but not least, the planned operations have been performed and completed in all patients. Apart from the attractive approach described by Mehta and colleagues,<sup>3</sup> which is also impeccable, the strength of this study is represented by the perfect synergy of each specialist within the heart team. Refined techniques such as percutaneous endoaortic balloon occlusion,<sup>4,5</sup> percutaneous coronary sinus catheter placement,<sup>6-8</sup> and percutaneous pulmonary venting<sup>7,9</sup> are safe procedures if performed by experienced anesthesiologists. Moreover, the hybrid operating room allows the surgeons, anesthesiologists, perfusionists, and nursing staff to perform these high-risk operations safely.

Together, these factors make this surgical approach as fascinating as it is safe, but it unfortunately is not achievable

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in all cardiac surgery institutions. The lack of one of the aforementioned elements, particularly the hybrid operating room, could make this already demanding surgical approach very difficult to perform or even almost impractical. It is demonstrated and recognized that a multidisciplinary team has become an integral part of the daily practice to optimize patient selection and risk-benefit ratio of particular strategies.<sup>10</sup>

In the challenging scenario described by Mehta and colleagues,<sup>3</sup> the heart team may save the patient's heart.

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