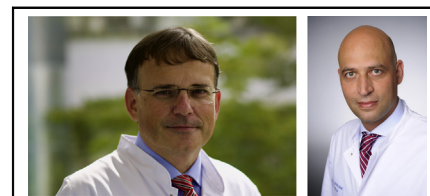


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Commentary: The mini-Bentall approach: Small and safe!

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First described in 1968 by Hugh Bentall and Antony De Bono,¹ the Bentall procedure is a well-established surgical technique for replacement of the aortic valve, aortic root, and ascending aorta with a composite graft. The Bentall procedure and its modifications represent an established approach to treating various pathologies of the aortic root, with excellent long-term results. Therefore, current guidelines of the European Society of Cardiology recommend aortic root replacement with a composite graft when a valve-sparing technique is not feasible.²

Over the past 2 decades, the introduction of minimally invasive, or less invasive, techniques has greatly influenced modern cardiac surgery.^{3,4} The variety of operations for which a less invasive approach is technically feasible has been continuously expanded to more complex operations, such as aortic or mitral valve disease, multivessel coronary artery grafting, and even aortic surgery involving the arch.⁵⁻⁷ In this issue of *JTCVS Techniques*, Shah and coworkers⁸ report their institutional experience with a minimally invasive “mini-Bentall” procedure via a partial upper sternotomy and compare mid-term results with those from the conventional full sternotomy approach. In the downloadable narrative video, the authors nicely demonstrate their surgical technique with the mini-Bentall via an upper hemisternotomy and provide useful hints for preventing surgical complications attributed to the limited access site.

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CENTRAL MESSAGE

The mini-Bentall technique is presented as a safe, minimally invasive approach for aortic root replacement.

Of note, in the early period, between 2009 and 2014, the Bentall procedure was always performed via a full sternotomy, whereas the mini approach was implemented by the group from 2015 to 2019. All patients were operated on by a single experienced surgeon, and patient selection was focused on elective patients with indication for first-time aortic-root replacement. Patients requiring redo surgery, repair of the aortic arch or hemiarch, or other concomitant procedures were excluded. These factors certainly limit the generalizability of the approach to a selected patient cohort and demonstrate that the mini-Bentall procedure is technically more demanding. Furthermore, the number of treated patients was relatively small in both groups (mini-Bentall, $n = 48$; full Bentall, $n = 49$) owing to the single-center design. There were no statistically significant differences between the 2 groups in preoperative patient characteristics or patient outcomes in terms of hard clinical outcome measures for morbidity and mortality. However, patients in the mini-Bentall group had a shorter ventilation time and fewer bleeding complications compared with patients with full sternotomy procedures. Nonetheless, none of the patients with bleeding complications required an exploratory redo thoracotomy, thereby excluding a possible access-related cause.

In summary, Shah and colleagues are to be congratulated for their excellent clinical outcomes independent of the chosen surgical approach. Furthermore, the present report clearly underscores the fact that the increasing demand and patient preference for more minimally invasive techniques in cardiac surgery can be met by meticulous patient selection in experienced centers without reducing safety or surgical efficacy even in more complex cardiovascular pathologies.

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