

Middle- and Long-Term Follow-up Outcomes of a Modified Bentall Technique in Aortic Root Replacement

Kexiang Liu

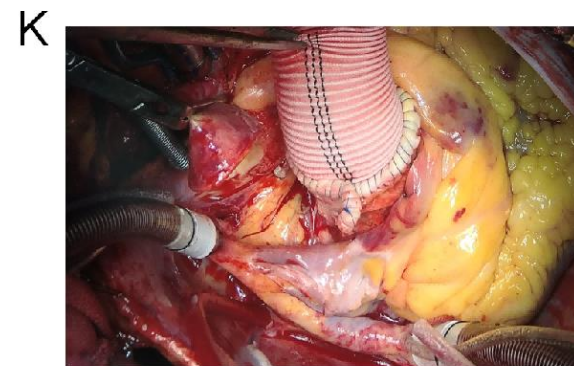
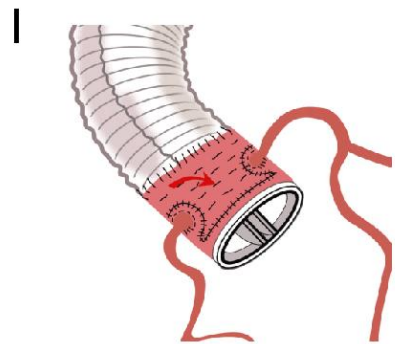
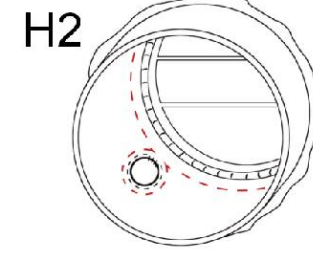
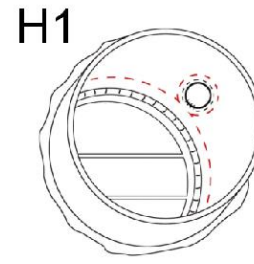
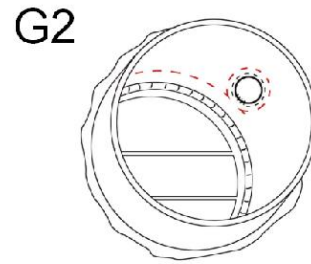
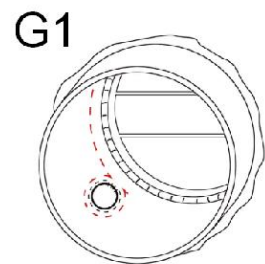
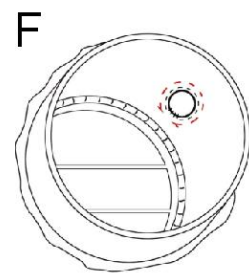
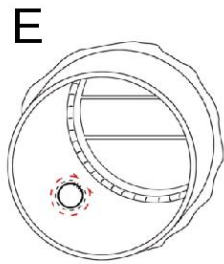
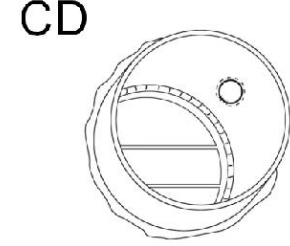
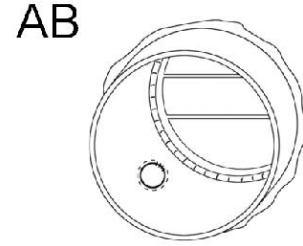
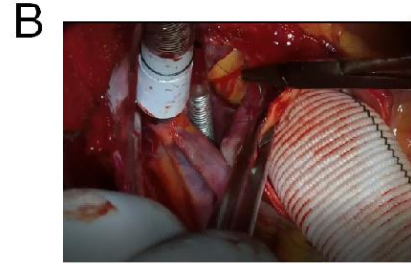
Department of Cardiovascular Surgery, The Second Hospital of Jilin
University, Changchun, Jilin, China, 130041

Background

- **Complications associated with treating aortic root aneurysm using the conventional Bentall technique necessitated the development of modified techniques to improve patient outcomes.**
- **This study aimed to describe a modified Bentall technique for aortic root replacement and report the middle- and long-term follow-up outcomes.**

Methods

- **Eighty-eight patients (9 with Marfan syndrome), including 69 males (78.4%) and 19 females (21.6%), underwent aortic root replacement using the modified Bentall technique from 2011 to 2020 at our hospital. The patients' mean age was 43.4 ± 11.7 years (range, 20–71 years). Data were collected on surgical time, aortic clamping time, cardiopulmonary bypass time, and computed tomography angiography before discharge.**



Results

- The patients' in-hospital mortality was 2.27%, with one case of multiple organ dysfunction syndrome and one of arrhythmia.
- The mean aortic cross-clamp time and cardiopulmonary bypass time were 120.9 ± 27.1 mins and 159.2 ± 37.9 mins, respectively.
- The follow-up rate was 94.2% (81/86) for 55 ± 23 months (range, 6–120). Follow-up mortality occurred in three cases (3.7%), including one death due to a traffic accident, one death due to cerebral hemorrhage, and one sudden death of unknown reasons. No patients required aortic root re-operation during follow-up.
- The survival rate was 98.8%, 95.9%, and 95.9% after 48, 96, and 120 months, respectively.

Conclusions

- **Our modified Bentall technique can be performed easily and safely, with excellent middle- and long-term outcomes. Our technique can be an effective alternative method in aortic root aneurysm treatment.**