Brief Communication

Aortic Valve Replacement through Right Thoracotomy

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There has never, to our knowledge, been a report of aortic valve replacement via a right thoracotomy. However, we recently used this approach in 2 young women with severe aortic stenosis. Exposure of the aortic valve was excellent, and we encountered neither technical difficulties nor sequelae related to the right thoracotomy. We believe that right thoracotomy provides adequate access for safe aortic valve replacement and yields cosmetically more appealing results than does median sternotomy. ***(Texas Heart Institute Journal 1993;20:307-8)***

Although median sternotomy has for many years been the incision of choice for all intracardiac surgery, we recently reported on our revival of the old technique of thoracotomy, as an approach to the mitral valve.[1] To date, we have used right thoracotomy as an approach for mitral, tricuspid, and atrial septal surgery in 69 patients. In the course of these procedures, we observed that the ascending aorta and aortic valve would be easily accessible. This prompted us to attempt aortic valve replacement through this incision. We now report 2 cases of aortic valve replacement via right thoracotomy. To the best of our knowledge, there has been no previous report of aortic valve replacement via this approach.

Patients. Two women, 20 and 25 years of age, presented with severe aortic stenosis, and both underwent surgery in May of 1993. For cosmetic reasons, we decided to perform aortic valve replacement via a right anterior thoracotomy.

Surgical Technique. Our technique of right thoracotomy has been described previously.[1] In both patients who underwent aortic valve replacement, we used ascending aortic cannulation for arterial return and cardioplegia.

The aorta was opened by means of an oblique incision between stay sutures. Cardioplegia was delivered by direct cannulation of the coronary arteries. The aortic valve was excised and replaced with a Carbomedics bileaflet valve (Carbomedics; Austin, Texas, USA), using interrupted sutures. The heart was de-aired via an aortic vent.

Results. Exposure of the aortic valve was excellent (Fig. 1). There were no technical difficulties encountered in the 2 operations, nor were there sequelae related to the right thoracotomy. Both patients were discharged on the 7th postoperative day.

Key words: *Aortic valve/surgery; thoracotomy, right*

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Comment

Median sternotomy scars tend to grow larger and unsightly, causing anxiety in some patients—particularly in young women. Several different approaches have been used to improve the cosmetic results after cardiac operation.[2-3-4] A bilateral submammary horizontal skin incision, followed by median sternotomy, has been described.[2] However, this technique requires the creation of large subcutaneous flaps, which may impair healing of the wound and predispose to hematoma or seroma or to maldevelopment of the breasts.[2] A modified median sternotomy with a low-lying skin incision and partial transection of the sternum has also been applied to children.[3] Lancaster and colleagues[4] used the right thoracotomy approach for closure of secundum atrial septal defects, and we have used the right thoracotomy for mitral,[1] tricuspid, and atrial septal surgery in 69 patients. Right thoracotomy has also been recommended as an effective alternative for repeat

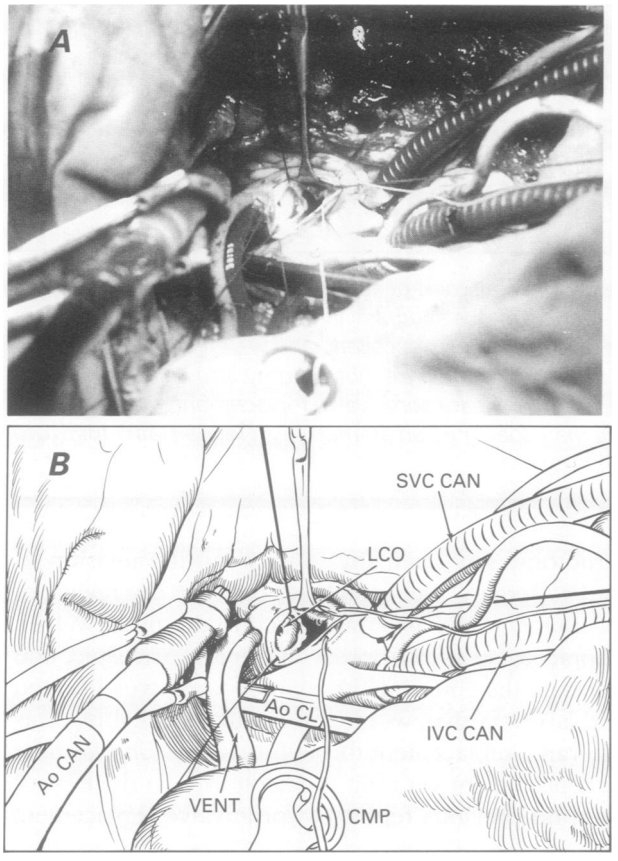

Fig. 1 ***A****) Intraoperative photograph and* ***B****) line-drawing of the same surgical view, showing exposure of the aortic valve.*

Ao CAN = aortic cannula; Ao CL = aortic clamp; CMP = Carbomedics prosthesis; IVC CAN = inferior vena cava cannula; LCO = left coronary ostium; SVC CAN = superior vena cava cannula; VENT = aortic vent

mitral valve surgery[5] and for the correction of some congenital heart defects.[6]

Although we have not encountered any earlier reports of aortic valve replacement via this approach, we found exposure of the valve (as can be seen in Fig. 1) to be excellent. No difficulty was encountered in locating and cannulating the coronary ostia for delivery of cardioplegia. We believe that right thoracotomy provides adequate access for safe aortic valve replacement and yields cosmetically more appealing results than does median sternotomy.

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