The thoracoscopic technique uses readily available instruments and allows for the safest approach, placement, and application of the cyroprobe under direct vision. It avoids repeat intercostal nerve blocks and epidurals and avoids the potential for pneumothorax that is inherent from “blind” percutaneous approaches. We have used separate punctures and direct placement of the cyroprobe into the intercostal spaces affected rather than placing the probe through the port so as to preserve pleura, “focus” the iceball’s effect, and maintain accuracy of localization. It would not be unreasonable to adapt the technique and attempt a transpleural application of the probe through a single port, thereby avoiding separate stab incisions over the intercostal spaces affected, although for the reasons mentioned the cryoanalgiesic effect may be reduced. The position of the anterolateral 10-mm port in the seventh intercostal space allows simple retraction of the lung medially and excellent views of the paravertebral area. The need for decortication in postthoracotomy patients with intercostal neuralgia may add some difficulty to an otherwise simple procedure, but additional port placements and careful adhesiolysis does not preclude this approach.

In summary, this single-port minimally invasive technique allows multiple safe, precise, and direct applications of the cyroprobe to the areas affected and eliminates the need for further repetitive intercostal nerve blocks, epidurals, and the need for long-term medication.

References

The Sorin Freedom SOLO stentless aortic valve: Technique of implantation and operative results in 109 patients

Thierry Aymard, MD, Friedrich Eckstein, MD, Lars Englberger, MD, Mario Stalder, MD, Alexander Kadner, MD, and Thierry Carrel, MD, Berne, Switzerland

Aortic valve replacement with a biological prosthesis is nowadays increasingly performed inasmuch as tissue valves have improved regarding hemodynamic performance and durability, although they leave younger patients (<60–65 years) at risk for reintervention.1 The first generation of stentless valves usually required two suture lines at the annulus level and above. The second generation includes adaptation of the outside profile of the framework to simplify technique of implantation. Whether this change in design will crucially improve the long-term performance is currently unknown.

We summarize the technique of implantation and the early performance of a consecutive series of 109 patients who received a Sorin Freedom SOLO stentless tissue valve (Sorin Biomedica Spa, Saluggio, Italy).
PATIENTS AND METHODS

A consecutive series of 109 patients who underwent elective aortic valve replacement with a Sorin Freedom SOLO stentless valve (Sorin Biomedica, Saluggia, Italy) between January 2005 and June 2007 was evaluated prospectively. The demographic characteristics are summarized in Table 1. Outcome analysis was approved by the local ethics committee and informed consent was obtained from each patient. Follow-up data were collected during the early postoperative course (ie, 30 days). Thereafter, patients were followed up at regular intervals within a specialized outpatient clinic.

DEVICE DESCRIPTION AND IMPLANTATION TECHNIQUE

The Freedom Sorin SOLO stentless tissue valve is constructed from two bovine pericardial sheets without fabric reinforcement (Figure 1). The detoxification process is directed by homocysteic acid and the valve is stored in a sterile neutral aldehyde-free solution. Rinsing is not necessary before implantation. This valve differs from the previous generation because the outside pericardial support has been eliminated and the design follows the natural shape of the ring and commissures. This allows a simplified technique of implantation in a strictly supra-annular position with a single suture line.

A transverse aortotomy is performed approximately 1 cm above the presumed level of the commissures of the native aortic valve. Supra-annular calcifications of the aortic root are considered as contraindications for the implantation of the SOLO valve. The size of the sinotubular junction should not exceed the annulus diameter by more than 2 to 3 mm; otherwise, insufficient leaflet coaptation may occur. The implantation starts with three 4–0 polypropylene sutures placed in a supra-annular position at the midpoint of each sinus and then passed through the external pericardial flange of the SOLO valve. The valve is then parachuted into the aortic root and tied. Thereafter, these sutures run continuously 2 mm above the annulus. At the level of the commissures, each suture is passed out of the aorta and tied with the suture coming from the adjacent sinus. An intraoperative view is shown in Figure 2.

Postoperative anticoagulation includes 100 mg salicylic acid from postoperative day 1 and subcutaneous low-weight heparin until discharge.

RESULTS

Median size of implanted valves was 25 mm, ranging from 19 to 27 mm. The exact distribution was 19 mm in 2 cases, 21 mm in 18 cases, 23 mm in 28 cases, 25 mm in 32 cases, and 27 mm in 29 cases.

Two (1.8%) patients died during the first 30 days: one patient from a major neurologic event and another from sudden death. Re-exploration for bleeding was necessary in 5 (4.5%)
Intraoperative recognition of an intracavitary left anterior descending coronary artery

Lucas H. A. Sanders, MD, FCS(SA), FRACS,a,b Mohamed A. Soliman Hamad, MD,a Mark A. J. Newman, FRACS, MD,b and Bart H. van Straten, MD,a Eindhoven, The Netherlands, and Perth, Australia

An intracavitary left anterior descending (LAD) coronary artery, the extreme form of an intramyocardial coronary artery, is difficult to recognize, even on retrospective review of the coronary angiogram. The right ventricle usually is entered during explorative dissection. An intracavitary LAD typically enters the right ventricle early in its descending course (possibly with an acute angle) and emerges to the surface subtly in a long curve. With an acute change of depth course, one may suspect an intracavitary or intramyocardial location. Preoperatively, an intramyocardial coronary

References

FIGURE 2. Intraoperative view with some excessive leaflet tissue assuming excellent coaptation.