

PREOPERATIVE DIAGNOSIS:, Aortic stenosis.,POSTOPERATIVE DIAGNOSIS: ,Aortic stenosis.,PROCEDURES PERFORMED,1. Insertion of a \*\*-mm Toronto stentless porcine valve.,2. Cardiopulmonary bypass.,3. Cold cardioplegia arrest of the heart.,ANESTHESIA: , General endotracheal anesthesia.,ESTIMATED BLOOD LOSS: , 300 cc.,INTRAVENTROUS FLUIDS: , 1200 cc of crystalloid.,URINE OUTPUT: , 250 cc.,AORTIC CROSS-CLAMP TIME: , \*\*,CARDIOPULMONARY BYPASS TIME TOTAL: , \*\*,PROCEDURE IN DETAIL:, After obtaining informed consent from the patient, including a thorough explanation of the risks and benefits of the aforementioned procedure, patient was taken to the operating room and general endotracheal anesthesia was administered. Next the neck, chest and legs were prepped and draped in the standard surgical fashion. We used a #10-blade scalpel to make a midline median sternotomy incision. Dissection was carried down to the left of the sternum using Bovie electrocautery. The sternum was opened with a sternal saw. The chest retractor was positioned. Next, full-dose heparin was given. The pericardium was opened. Pericardial stay sutures were positioned. After obtaining adequate ACT, we prepared to place the patient on cardiopulmonary bypass. A 2-0 double pursestring of Ethibond suture was placed in the ascending aorta. Through this was passed an aortic cannula connected to the arterial side of the cardiopulmonary bypass machine. Next a 3-0 Prolene pursestring was placed in the right atrial

appendage. Through this was passed our venous cannula connected to the venous portion of the cardiopulmonary bypass machine. A 4-0 U-stitch was placed in the right atrium. A retrograde cardioplegia catheter was positioned at this site. Next, scissors were used to dissect out the right upper pulmonary vein. A 4-0 Prolene pursestring was placed in the right upper pulmonary vein. Next, a right-angle sump was placed at this position. We then connected our retrograde cardioplegia catheter to the cardioplegia solution circuit. Bovie electrocautery was used to dissect the interface between the aorta and pulmonary artery. The aorta was completely encircled. Next, an antegrade cardioplegia needle and associated sump were placed in the ascending aorta. We then prepared to cross-clamp the aorta. We went down on our flows and cross-clamped the aorta. We backed up our flows. We then gave antegrade and retrograde cold blood cardioplegia solution circuit so as to arrest the heart. The patient had some aortic insufficiency so we elected, after initially arresting the heart, to open the aorta and transect it and then give direct ostial infusion of cardioplegia solution circuit. Next, after obtaining complete diastolic arrest of the heart, we turned our attention to exposing the aortic valve, and 4-0 Tycron sutures were placed in the commissures. In addition, a 2-0 Prolene suture was placed in the aortic wall so as to bring the aortic wall and root up into view. Next, scissors were used to excise the diseased aortic valve leaflets. Care was taken to remove all the calcium from the aortic annulus. We then sized up the aortic annulus which came out to be a

\*\*mm stentless porcine Toronto valve. We prepared the valve. Next, we placed our proximal suture line of interrupted 4-0 Tycron sutures for the annulus. We started with our individual commissural stitches. They were connected to our valve sewing ring. Next, we placed 5 interrupted 4-0 Tycron sutures in a subannular fashion at each commissural position. After doing so, we passed 1 end of the suture through the sewing portion of the Toronto stentless porcine valve. The valve was lowered into place and all of the sutures were tied. Next, we gave another round of cold blood antegrade and retrograde cardioplegia. Next, we sewed our distal suture line. We began with the left coronary cusp of the valve. We ran a 5-0 RB needle up both sides of the valve. Care was taken to avoid the left coronary ostia. This procedure was repeated on the right cusp of the stentless porcine valve. Again, care was taken to avoid any injury to the coronary ostia. Lastly, we sewed our non-coronary cusp. This was done without difficulty. At this point we inspected our aortic valve. There was good coaptation of the leaflets, and it was noted that both the left and the right coronary ostia were open. We gave another round of cold blood antegrade and retrograde cardioplegia. The antegrade portion was given in a direct ostial fashion once again. We now turned our attention to closing the aorta. A 4-0 Prolene double row of suture was used to close the aorta in a running fashion. Just prior to closing, we de-aired the heart and gave a warm shot of antegrade and retrograde cardioplegia. At this point, we removed our aortic cross-clamp. The heart gradually regained

its electromechanical activity. We placed 2 atrial and 2 ventricular pacing wires. We removed our aortic vent and oversewed that site with another 4-0 Prolene on an SH needle. We removed our retrograde cardioplegia catheter. We oversewed that site with a 5-0 Prolene. By now, the heart was de-aired and resumed normal electromechanical activity. We began to wean the patient from cardiopulmonary bypass. We then removed our venous cannula and suture ligated that site with a #2 silk. We then gave full-dose protamine. After knowing that there was no evidence of a protamine reaction, we removed the aortic cannula. We buttressed that site with a 4-0 Prolene on an SH needle. We placed a mediastinal chest tube and brought it out through the skin. We also placed 2 Blake drains, 1 in the left chest and 1 in the right chest, as the patient had some bilateral pleural effusions. They were brought out through the skin. The sternum was closed with #7 wires in an interrupted figure-of-eight fashion. The fascia was closed with #1 Vicryl. We closed the subcu tissue with 2-0 Vicryl and the skin with 4-0 PDS.