香港浸信會醫院
Hong Kong Baptist Hospital

Percutaneous Balloon Aortic Valvuloplasty

Procedure Information Sheet

Introduction

Aortic stenosis is the narrowing of the aortic valve opening. In severe cases, it will cause acute pulmonary edema, malignant arrhythmias or even sudden death. Percutaneous balloon aortic valvuloplasty (BAV) is used to expand narrowed aortic valve by special balloons. It is performed under the guidance of X-ray, through percutaneous method. BAV is an alternative treatment method to the conventional aortic valve replacement (AVR) by open heart surgery. It is not a definitive treatment method but it offers good short-term result.

Indication

Patients not suitable for AVR, such as unstable patients waiting for AVR, patients who need emergency non-cardiac surgery, and patients with other severe medical illness.

The Operation / Procedure

1. This invasive procedure is performed under local anesthesia in a cardiac catheterization centre. Patient is alert during the procedure, but sedation may be given for calm down purpose.
2. Electrodes are adhered on the chest to monitor the heart rate and rhythm. Blood oxygen monitor through finger tip will be set up. Measurement of blood pressure from the arm will be taken during the examination.
3. A small wound is made over the groin for access to the arteries and/or veins. Both groins may be used. Sheaths will be placed inside the arteries and/or veins.
4. Catheters are advanced to the heart. Pressures within the heart are measured. Contrast is injected and films are taken.
5. A catheter mounted with a balloon will be delivered across the aortic valve and it will be inflated to open up the narrowed aortic valve. Repeated balloon inflations may be required.
6. Pressures within the heart are measured and echocardiogram is performed to ensure success of the procedure.
7. Puncture of the septum separating the left and right atrium may be necessary. This will require the use of special needles.

Before the Operation / Procedure

1. An echocardiogram (ultrasound imaging of heart) will be performed to assess and confirm the anatomy and functional significance of the aortic stenosis. Special attention will be taken on the feasibility of the percutaneous approach.
2. Some preliminary tests including electrocardiogram, chest X-ray, blood tests and echocardiograph will be done in ward or a clinic. Allergy history will also be checked. These can be performed days before the procedure or on the day of admission.
3. Doctor will explain the details of the procedure together with the possible risks and complications. This information sheet will be provided. Patient will have to sign a consent form.
4. Blood thinning drugs or Metformin (for diabetes) may have to be stopped several days before the procedure. Drugs such as steroid may be prescribed. Antibiotic may be given as prophylaxis for the procedure.
5. Fasting of 4-6 hours is required prior to the procedure. An intravenous drip may be set up. Shaving may be required over the puncture site.
6. If patient is a female, please provide the last menstrual period (LMP) and avoid pregnancy before the procedure as this procedure involves exposure to radiation.

Patient's Label
Patient Name: _____
Hospital No:_____
Episode No:_____

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After the Operation / Procedure

1. After the procedure, catheters will be removed. The wound site will be compressed to stop bleeding.
2. Nursing staff will check blood pressure, pulse and wound regularly.
3. Bed rest may be necessary for 4 hours. In particular, do not move or bend the affected limb. Whenever cough or sneeze, apply pressure on the wound with hand.
4. Should inform nurse if patient feels any discomfort in particularly chest discomfort or blood oozing is found from the wound site.
5. Once diet is resumed, take more fluid to help eliminate contrast by passing urine.
6. Follow instruction for the use of medications.
7. Usually can be discharged 2-3 days after the procedure.
8. The wound will be inspected and covered with light dressing. Keep the wound site clean and change dressing if wet. In general, showers are allowed after 2 days.
9. Avoid vigorous activities (household or exercise) in the first 3 days after the procedure. Bruising around the wound site is common and usually subsides 2-3 weeks later. If any signs of infection, increase in swelling or pain over the wound, come back to the hospital immediately.
10. Usually doctor has explained the results of the procedure before discharge. Any further questions, discuss with doctor during subsequent follow-up.

Risk and Complications

1. The procedure carries certain risks.
2. Major complications include intraprocedural death (1.5-5%), stroke (2-3%), systemic embolus (2%), myocardial infarction (1-2%), vascular complication (7%), tamponade (0.3%), permanent pacemaker (1%), moderate-severe aortic regurgitation (1%) and emergency cardiac surgery (1%).
3. Minor complications include contrast reaction, nausea and wound complications (<5%). Bruising around the wound site is common.
4. There is a high chance of residual or recurrent aortic stenosis.

Alternative Treatment / Investigation

Patients who refuse this method can select either AVR or medical therapies or transcatheter aortic valve implantation (TAVI).

Disclaimer

This leaflet only provides general information pertaining to this operation / procedure. While common risks and complications are described, the list is not exhaustive, and the degree of risk could also vary between patients. Please contact your doctor for detailed information and specific enquiry.

Reference

Smart Patient Website by Hospital Authority: Percutaneous Balloon Aortic Valvuloplasty (4/2019)

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Patient's Signature:_____ Date:_____