

**CARDIOLOGY UPDATE 2006**

## Asymptomatic Valvular Heart Disease: Indications and Timing for Surgery

Dimitris Nikas, MD

*Professor & Director of Cardiovascular  
Surgery, Medical Center of Athens,  
Athens, Greece*

**KEY WORDS:** *valvular heart disease;  
mitral stenosis; mitral regurgitation;  
aortic stenosis; aortic regurgitation*

---

### ASYMPTOMATIC SEVERE AORTIC STENOSIS

---

Patients who have severe aortic stenosis and remain asymptomatic is an issue of great interest and controversy. The reason of the argument is that on one side many physicians believe that irreversible myocardial damage and fibrosis may develop during a prolonged asymptomatic stage and therefore delayed aortic valve replacement will not have ideal results [1]. On the other side early surgery is associated with perioperative mortality and morbidity and significant long-term morbidity (2%/year) and mortality (1%/year), which combined together, exceed the possibility of sudden death (1%/year) from the aortic stenosis itself [2,3].

Therefore we should try to identify patients who may be at high risk of sudden death or patients who are “pseudo-asymptomatic” by limiting their gradual daily physical activity. Exercise stress test within a hospital environment is a useful tool to reveal these groups of patients.

In brief, asymptomatic patients with severe aortic stenosis who have abnormal stress test or left ventricular systolic dysfunction or excessive left ventricular hypertrophy or very tight aortic stenosis, should be offered the benefit of aortic valve replacement.

---

### ASYMPTOMATIC SEVERE AORTIC REGURGITATION

---

This is also a controversial issue but it is generally agreed that aortic valve replacement should be offered to patients with left ventricular dysfunction. Also surgery should be performed in asymptomatic patients with preserved left ventricular function and significant left ventricular dilatation (left ventricular end-diastolic diameter-LVED >75 mm, left ventricular end-systolic diameter-LVES >45 mm), as they appear to represent a high risk group for sudden death [4].

The group of patients with severe aortic regurgitation and severe left ventricular dysfunction should be offered surgery accepting a high perioperative mortality (10%) because the long-term results of aortic valve replacement are much better than the results of patients without an operation [5].

---

### ASYMPTOMATIC MITRAL REGURGITATION

---

The guidelines for surgical correction of mitral regurgitation are based on knowledge of the natural history of mitral regurgitation and predictors of short-term and long-term outcomes after correction. There is usually no argument that asymptomatic patients with echocardiographic indicators of left ventricular dysfunction, should be

*Address for correspondence:*  
Dimitris Nikas, MD  
Director of Cardiac Surgery  
Medical Center of Athens  
Marousi, Athens, Greece  
E-mail: [dnikas@ath.forthnet.gr](mailto:dnikas@ath.forthnet.gr)

operated upon. The echocardiographic evidence of left ventricular dysfunction is defined as left ventricular ejection fraction-EF lower than 60% and left ventricular end systolic diameter >40-45 mm. Surgery at this time will prevent further deterioration of left ventricular function and improve longevity independently if we perform repair or replacement [6].

In contrast, the group of asymptomatic patients with normal left ventricular function is much more controversial. This group should be divided into chronic mitral regurgitation and acute mitral regurgitation patients. The asymptomatic chronic mitral regurgitation patients with recent onset of atrial fibrillation or increased pulmonary artery pressure should be operated on preferably by performing repair. Surgery should also be recommended for patients with acute severe mitral regurgitation due to ruptured chordae. For all other asymptomatic patients without the above mentioned indications (left ventricular dysfunction, increased pulmonary artery pressure, recent onset atrial fibrillation), surgery is recommended only if the likelihood of repair is extremely high.

There is a group of asymptomatic patients with severe mitral regurgitation of significant interest. That is the elderly population. Although it is generally agreed that advanced age is not a contraindication to surgery in patients with aortic stenosis, the same does not apply for mitral regurgitation. The recommendation for mitral valve surgery particularly replacement, in this group of elderly patients should be advised with more caution because several studies have indicated that the risks of surgery are increased and the benefits are less obvious.

Another group of patients with mitral regurgitation of significant importance is the group with severe left ventricular dysfunction. The current suggestion is that these patients should not be denied the benefit of corrective surgery in spite of a higher perioperative mortality (10%), as long as we

protect the heart muscle during surgery and we preserve the subvalvular apparatus [5,7].

---

#### ASYMPTOMATIC SEVERE MITRAL STENOSIS

---

It is generally agreed that surgery should be recommended in this group of patients even with severe pulmonary hypertension in order to prevent right ventricular failure.

#### REFERENCES

1. Lund O. Preoperative risk evaluation and stratification of long-term survival after valve replacement for aortic stenosis: reasons for earlier operative intervention. *Circulation* 1990; 82:124-139.
2. Vongpatanasin W, Hiullis L.D, Lange RA. Prosthetic heart valves. *N Engl J Med* 1996; 335: 407-416.
3. Lund O, Larsen KE. Cardiac pathology after isolated valve replacement for aortic stenosis in relation to preoperative patient status: early and late autopsy findings. *Scand J Thorac Cardiovasc Surg* 1989; 23:263-270.
4. Bonow RO, Lakatos E, Maron BJ, Epstein SE. Serial long-term assessment of the natural history of asymptomatic patients with chronic aortic regurgitation and normal left ventricular systolic function. *Circulation* 1991; 84:1625-1635.
5. Bonow RO, Nikas D, Elefteriades JA. Valve replacement for regurgitant lesions of the aortic or mitral valve in advanced left ventricular dysfunction. *Cardiol Clin* 1995; 13:73-83.
6. ACC/AHA Task Force Report: Bonow et al. *J Am Coll Cardiol* 1998; 32:1466-588.
7. Nikas D. Mitral valve regurgitation and severe left ventricular dysfunction. *Cardiology clinic Feb* 1995 (Supp).