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Dr Ivor Gerber

Assessment and management of murmurs in primary care When is a murmur significant? When do I refer for an echocardiogram?

By Dr Ivor Gerber

Cardiac murmurs are frequently heard in primary care, either when specifically listened for or as an incidental finding. A murmur does not imply an abnormality and may be an innocent flow murmur especially in the young. However a murmur may be the only clue to a serious cardiac condition. Although echocardiography is the gold standard for the assessment of a murmur, it should not be seen as a tool to replace careful auscultation and clinical evaluation.

The art of evaluating a murmur clinically is to determine the likely cause and clinical significance of the murmur.

This takes some knowledge and a lot of practice. Below highlights some useful pointers for the evaluation of murmurs in primary care.

- Cardiac murmurs are generally either heard in systole or diastole (generally more difficult to hear), or both in systole and diastole.
- A systolic murmur is common and may not be pathological. A diastolic murmur is much less common, but is always pathological.
- Mitral regurgitation and aortic stenosis are the most common pathological causes of a systolic murmur
- Aortic regurgitation and mitral stenosis are the most common causes of a diastolic murmur.

Typical features of an innocent murmur in adults:

- Usually younger adults
- Due to flow across the outflow tracts of the heart (pulmonary and /or aortic valves).
- Only heard in systole (diastolic murmurs are always pathological).
- Usually short and soft (graded 1 or 2 out of 6).
- Usually best heard at the base but can also be heard at the apex.
- The first and second heart sounds are normal.
- Often louder when the patient is unwell or pyrexial.

Caveats:

- Some significant pathologies can result in an innocent sounding murmur, for example an atrial septal defect (ASD) and hypertrophic cardiomyopathy. The ECG will usually be abnormal.
- Mild mitral regurgitation, such as due to mitral valve

prolapse and mild aortic stenosis, that will require follow-up, may cause a murmur that is difficult to distinguish from an innocent murmur.

- A bicuspid aortic valve that occurs in up to 2% of the population may cause an innocent sounding murmur but may be associated with a dilated aorta that would always warrant follow up due to the risk of aortic dissection.
- Occasionally, severe mitral regurgitation and severe aortic stenosis may be associated with a soft murmur. Often, but not always, there will be a clue that the murmur may be significant, such as slow rising pulse, symptoms of heart failure, abnormal ECG and/or CXR, raised BNP.

When to refer a patient with a murmur for an echocardiogram:

- All murmurs that are of moderate intensity or more.
- Associated symptoms such as chest pain, shortness of breath, dizziness/syncope, and palpitations.
- Abnormal ECG and/or CXR
- Raised BNP
- Select cases of a soft, innocent sounding murmur, for example for patient (and/or doctor) reassurance, immigration assessment, life insurance assessment, and patients with certain professions (pilot) or certain sports/recreation hobbies such as diving.

Antibiotic prophylaxis for dental procedures (NH/CSANZ Guidelines 2008)

Current guidelines recommend antibiotic prophylaxis for a limited number of conditions only, listed below.

- Prosthetic valves
- Rheumatic valve disease
- Previous episode of infective endocarditis
- Surgical or catheter repair of congenital heart disease (at least 6 months)
- Unrepaired cyanotic congenital heart disease

Other valve abnormalities such as mitral regurgitation due to mitral valve prolapse and aortic stenosis or regurgitation due to a bicuspid aortic valve are no longer considered indications for antibiotic prophylaxis

Excellent dental/oral hygiene should be encouraged

Always have an index of suspicion for the diagnosis of infective endocarditis if a patient has a fever without an obvious cause and obtain blood cultures before considering antibiotics.