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MANAGING CONGENITAL HEART DEFECTS IN ADULTS

Congenital heart defects become adult problems when they escape recognition in childhood or when the absence of symptoms influences those involved not to opt for early treatment.

ATRIAL SEPTAL DEFECTS: AUSCULTATE CAREFULLY

Atrial septal defect (ASD) is a quiet disease, unlikely to be suspected from symptoms until the patient is well into adulthood. Even a 20-year-old with a significant left-to-right shunt can appear and feel normal. On the other hand, some patients may present at age 20 or 30 with irreversible pulmonary vascular disease.

The diagnosis requires careful auscultation. The key is to listen for a persistent "split" in the second heart sound, which is caused by right ventricular dilatation. Because it takes longer for electrical activation to course through the dilated right ventricle, the pulmonary valve remains open longer. In children, the sound is often dismissed as a functional or innocent murmur and the diagnosis is not made until late in adulthood when symptoms develop.

In some cases, a diastolic rumble from increased flow across the tricuspid valve makes the diagnosis easier, but this is not present in most cases. Usually, the murmur is of low intensity and is difficult to appreciate. Exercise may bring out the diastolic rumble.

A lateral chest radiograph will demonstrate volume overload on the right side of the heart and certainly will prompt additional tests. The diagnosis can be made with either transthoracic or transesophageal echocardiography. Catheterization is not indicated unless surgery is being considered. If the patient is elderly, it makes sense to rule out coronary artery disease before considering surgery for a possible ASD.

The right atrial dilation that occurs with ASD eventually creates a tendency for premature atrial contractions (PACs). With enough dilatation, the atrial ectopy can lead to atrial fibrillation. This finding is especially common after age 40. On the other hand, although some patients may remain in sinus rhythm as late as age 70, the right ventricle can eventually fail because of chronic volume overload. These patients respond well to operative treatment.

The defect can be closed with a suture technique or a patch of either prosthetic or pericardial tissue. Operative mortality is low; the risk of perioperative cerebrovascular accidents secondary to clot formation can be minimized with coumadin or other anticoagulant therapy that continues for at least 6 months. The wave of the future for ASD correction is nonsurgical closure using a cathether-delivered device. This technique is already being used in some centers; complications are few, but the procedure is lengthy.

With late ASD closure, the patient remains at risk of atrial fibrillation because the right atrium will not return to normal size. Atrial fibrillation is not a problem when closure is achieved during childhood.

PATENT DUCTUS ARTERIOSUS: CORRECT EARLY

Patent ductus arteriosus (PDA), although relatively easy to diagnosis, tends to elude treatment during childhood because the patient is usually asymptomatic. However, significant symptoms can develop when these individuals reach their 50s or 60s.

The diagnosis is made by recognizing a continuous infraclavicular murmur at the second interspace on the left. Chronic heart failure symptoms develop from volume overload. A chest radiograph will demonstrate a large pulmonary artery and left heart dilation caused by the left to right shunt. With age, calcium deposits occur in the PDA.

A symptomatic patient is a candidate for operative correction unless he has high pulmonary artery pressure. Patients with PDA are at risk of subacute bacterial endocarditis, particularly in the second and third decades—another reason for closure of the defect, regardless of its size.

Although catheter-delivered devices are being used to close PDAs, the standard operative procedure is division and ligature, and most patients require cardiopulmonary bypass because of calcium in the PDA. Patients who have irreversible pulmonary vascular disease do not respond well to surgical treatment.

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