Dyspnea in adult patient with corrected Tetralogy of Fallot

F. Mut, M. Beretta

Nuclear Medicine Service, Asociacion Española

Montevideo, Uruguay
Clinical history

- Male 51 y.o.
- Tetralogy of Fallot (TF) - acyanotic form.
- Operated 16 years before
- Dyspnea.
- EKG: LV, RV hypertrophy, repolarization changes.
- Echo: LVH, RVH with preserved systolic function of both ventricles, mild pulmonary valve stenosis.
- MPS was indicated to rule out associated CAD.
Clinical history

- Exercise/rest MPS with 99mTc-MIBI was performed.
- 90% of maximum predicted heart rate was achieved.
- No ECG changes, no chest pain.
- Dyspnea.
Myocardial perfusion study
Myocardial perfusion (enlarged stress images)
The MPI results indicate:

a) Normal study.
b) LV & RV hypertrophy, anterior ischemia.
c) LV & RV hypertrophy, transient dilation.
d) LV & RV hypertrophy, inferior ischemia.
The MPI results indicate:

a) Normal study.
b) LV & RV hypertrophy, anterior ischemia.
c) LV & RV hypertrophy, transient dilation.
d) LV & RV hypertrophy, inferior ischemia.

- There is very marked LV & RV hypertrophy.
- No perfusion defects are observed.
- The LV cavity seems to be larger in the post-stress study as compared to rest, indicating transient ischemic dilation (TID).
The 4 features typical of Tetralogy of Fallot include:

a) Right ventricular outflow tract obstruction, ventricular septal defect, dextroposition of the aorta, and right ventricular hypertrophy.

b) Right ventricular outflow tract obstruction, atrial septal defect, dextrocardia, and left ventricular hypertrophy.

c) Mitral valve prolapse, ventricular septal defect, dextroposition of the aorta, and left ventricular hypertrophy.

d) Right ventricular outflow tract obstruction, atrial septal defect, dextrocardia, and right hypertrophy.
The 4 features typical of Tetralogy of Fallot include:

a) **Right ventricular outflow tract obstruction, ventricular septal defect, dextroposition of the aorta, and right ventricular hypertrophy.**

b) Right ventricular outflow tract obstruction, atrial septal defect, dextrocardia, and left ventricular hypertrophy.

c) Mitral valve prolapse, ventricular septal defect, dextroposition of the aorta, and left ventricular hypertrophy.

d) Right ventricular outflow tract obstruction, atrial septal defect, dextrocardia, and right hypertrophy.
Teaching points

- TF is the most common cyanotic heart defect seen in children beyond infancy, the most common cyanotic congenital lesion likely to result in survival to adulthood, and currently the most common complex lesion to be encountered in adults after repair.

- TID can be the consequence of segmental or diffuse ischemia. Lack of proportionate microvascular growth in myocardial hypertrophy leaves the myocardium vulnerable to ischemia even in the absence of atherosclerotic plaques (diffuse vs. segmental ischemia).

- In addition to RV hypertrophy, LVH can develop due to LV overload in TF.
Teaching points

• Patients with acyanotic TF (or pink TF) may be asymptomatic or may show signs of heart failure from a large left-to-right shunt.

• Occasionally, an individual reaches adulthood without any surgical repair, although this is not common.

• Echocardiography is the modality of choice for the postoperative follow-up evaluation of patients with palliated or repaired TF.

• Residual abnormalities range from nearly normal heart to substantial RV dysfunction and residual RV outflow tract obstruction.

• MPS can be indicated in adult cases in which symptoms may resemble those from coronary artery disease.
Bibliography


