Hole in the Heart
A common cause of stroke and migraine?

Hole in the Heart: PFOs
A small defect between the two upper chambers of the heart recently has been linked to stroke and appears to be linked to migraine headaches. The defect, known as a patent foramen ovale (PFO), now can be detected and treated without surgery.

The foramen ovale is an opening between the right and left atrium (atrial septum). This opening allows blood to flow between the atria in babies before birth. Most of the time, this hole closes at or just after birth. If it does not close, this hole is called a patent foramen ovale, or PFO. Because the PFO exists, it may allow blood or other debris to cross from the right to the left atrium.

How do PFOs cause strokes?
When pressure arises inside the chest, such as during a cough or sneeze, the flap can open and blood can flow directly between the right and left atrium, bypassing the lungs’ filtering system. Debris, like small blood clots, does not get filtered out. If the debris enters the bloodstream it can pass through the heart and enter the brain, causing a stroke.

Many people do not learn they have a PFO until after having a stroke. Strokes occur in less than one percent of people with PFOs.

When people have had a stroke, their doctor will try to find the source of the clot. The doctor usually can find the source through diagnostic tests. If the doctor cannot find the source of the clot, he or she may test for a PFO using some of the available tests below.

Ways to diagnose PFOs:
- Electrocardiogram
- Chest X-ray
- Echocardiogram
- Doppler ultrasound
- Transesophageal echocardiography
- Cardiac magnetic resonance imaging (MRI)
- Cardiac catheterization
- Angiography

How do you treat PFOs?
PFOs can be treated by closing the hole, a procedure done with a catheter-based operation or open-heart surgery. If a patient already has suffered from a stroke, he or she also may need medication.

How are PFOs related to migraines?
Some patients who had a stroke and corrected PFOs called their doctors with an important realization. Those patients who suffered from migraines before noticed the migraine attacks were greatly reduced or no longer a concern. This discovery led doctors to investigate the link between treating the PFOs and reducing migraines. Several studies are being conducted to explore this possibility.
TO FIND OUT MORE

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