

DIY hole-in-the-heart repair kit

Devices/Technology

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Specialists in the UK have found a way to treat a common heart defect using the body's natural healing power.

Experts say as many as one in four people have a valve-like hole in the heart, known as a patent foramen ovale (PFO); the heart defect has been recently linked in studies with a higher risk for stroke and migraine.

The hole in the heart can be closed surgically using a graft, but this procedure can also cause damage to the surrounding tissue.

However by using a "bioabsorbable" patch a team at London's Royal Brompton Hospital has solved that problem as the patch behaves as a temporary plug until the body replaces it with healthy normal tissue.

With the BioSTAR device the healing is very similar to how the body would heal itself normally and the repair is usually effected within 30 days by this method.

A PFO is an opening in the wall between the two upper chambers of the heart, it usually produces no symptoms, but in some people it can markedly increase the risk of stroke and migraine.

In the womb, the opening is necessary at the fetal stage to allow efficient circulation of blood and oxygen before the lungs start working, but after birth, the hole normally closes to separate the two chambers.

However sometimes this does not occur correctly and when pressure is created inside the chest, for example by coughing, a flap can open, allowing blood to flow in either direction.

This then means blood can bypass the filtering system of the lungs and if debris is present in the blood such as small blood clots, these can travel to the brain and lodge there causing a stroke.

Consultant cardiologist Dr. Michael Mullen has been using the device to treat his patients, and he says traditional grafts are permanent and so can cause an inflammatory reaction, which can lead to problems.

Dr. Mullen says the BioSTAR treatment does the repair job and then disappears in a natural way and the healing is very similar to how the body would heal itself normally.

He has to date treated around 70 patients with the BioSTAR device, all of whom were regarded as having a high risk of stroke because of their PFO.

Dr. Mullen says some of the patients have reported relief from their migraines since having the treatment but he also says more research is needed to confirm this finding.

Currently the device is only licensed for minimising stroke risk.

Migraine groups such as the Migraine Trust and the Migraine Action Association say while PFO is only linked with certain types of migraine such as migraine with aura, where the person experiences symptoms such as visual disturbances, numbness or

dizziness, it is when it comes to stroke it is clear that the benefits outweigh the risks.

Such migraines account for about 10-15% of all migraine cases; some 6 million people in the UK suffer from migraine, while in the U.S., 18% of women and 6% of men report having had at least one migraine episode in the previous year.

Apparently 75% of adult migraine patients are female, but pre-puberty migraine affects equal numbers of boys and girls.

For many migraine is a debilitating disorder which impacts on both their social life and work; experts say the findings offer some hope to migraine sufferers.