

Automatic Repair Device for Hole in the Heart

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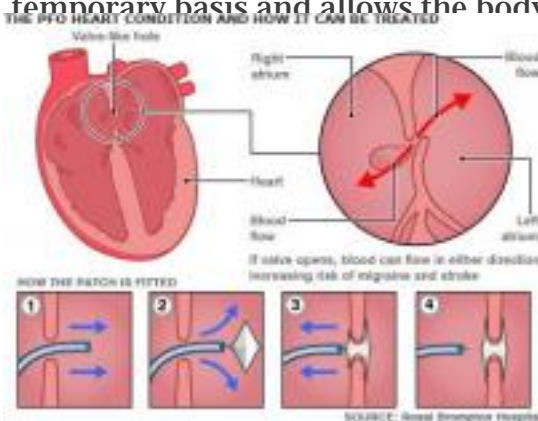
Medical researchers at London's Royal Brompton Hospital have developed a method of treating a common heart defect through the body's natural healing power. The heart defect is responsible for stroke and migraine and affects one in four people.

Every fourth person suffers from a valve-like hole in the heart, a condition known as patent foramen ovale (PFO). PFO is actually an opening in the wall between the two upper chambers of the heart. It is usually present in the foetus inside the womb, where it is required for efficient blood and oxygen circulation before the lungs of the baby start working.

Once the baby is born, the hole closes automatically to separate the two chambers. However, in some people the hole does not close properly. Patients born with PFO continue to live with it without any symptoms. Certain people however face significantly increased risk of stroke and migraine due to this condition.

When pressure is created inside the chest due to any reason, for e.g.: due to coughing, the flap covering the hole can open and allow blood to flow in either direction. This would mean blood can bypass the filtering system of the lungs. While it might not cause any major issues, if any debris present in the blood, such as small blood clots, travel to and lodge in the brain, they can lead to a stroke.

It is possible to surgically close the hole with a graft; however this can cause permanent damage to surrounding tissue. To overcome this problem, the team of researchers from Royal Brompton Hospital used a "bio-absorbable" patch. The patch plugs the hole on a temporary basis and allows the body sufficient time to replace it with healthy normal tissue in 30 days.



A bio-absorbable patch placed over the hole allows the body to naturally heal a hole in the heart and thereby reduce migraine and stroke risk

Dr. Michael Mullen, the consultant cardiologist who has been using the device to treat

his patients said, “Traditional grafts are permanent and so can cause an inflammatory reaction, which can lead to problems. Instead, this treatment does the repair job and then disappears in a natural way. The healing is very similar to how the body would heal itself normally.”

Dr. Mullen has so far used the device manufactured by BioSTAR on nearly 70 patients who were all deemed to be at high risk of stroke on account of their PFO. He has had success with some of his patients reporting disappearance of their migraines after the treatment.

Despite the success, Dr. Mullen feels the need for larger studies to confirm his findings. Presently the device is only licensed for minimising stroke risk. Susan Hayden of the Migraine Trust said, “At the moment this treatment is not indicated purely for alleviating migraine, whereas for stroke it is clear that the benefits outweigh the risks.”

“Also, PFO is only linked with certain types of migraine – migraine with aura, where the person experiences symptoms such as visual disturbances, numbness or dizziness. These are not the most common type, and only account for about 10-15% of all migraine cases,” she added.

Nearly 6 million people in the UK suffer from migraines. Paul Jansen of the Migraine Action Association feels the findings bring good tidings for migraine sufferers. “Hole-in-the-heart is reported to be implicated in stroke and there is more and more research that identifies that this could also be linked to the incidence of migraine, particularly migraine with aura. As such we actively encourage the development of on-going research in this field,” he said.