

Watchman Implant: A Helping hand in Stroke Prevention in Atrial Fibrillation

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Abstract

Watchman implant is the latest treatment option available for the patient with atrial fibrillation. This technique helps to prevent stroke in the patients who cannot take anticoagulants because of bleeding complications. Watchman implant is a fabric covered device which is shaped like a parachute. Watchman implant is permanent type of method which expands to close the opening of the left atrial appendage (LAA). LAA appendage is the most common site where most harmful blood clots take place. Watchman implant prevents the blood clots from formation and leaving the heart, and thereby reduces the chances of stroke.

Keywords: Watchman Implant; Stroke; Atrial Fibrillation; Left Atrial Appendage; Non Valvular.

Introduction

Atrial fibrillation is the most common and major factor of heart related mortality and morbidity. Atrial fibrillation is common type of disturbance in the electrical conducting system of heart. This leads to the disturbances in the rate and rhythm of upper left atrium of the heart. Atrial fibrillation affects more than 5 million people in the United States. The major complications of atrial fibrillation are stroke. Non valvular atrial fibrillation is usually treated with anticoagulants, which is often a permanent treatment for the patient. The use of anticoagulants or blood thinning products needs a major changes the routine lifestyles of the patients to avoid bleeding related risks.

The watchman implant in the atrial appendage closure system is one of the best treatment available for the patient who are seeking a non-pharmacological alternative for the prevention of stroke. This procedure is totally a catheter based and does not require any type of surgery. This type of alternative reduces the risk of strokes in the clients which have non-valvular atrial fibrillation.

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Source: Google

Fig. 1: Watchman atrial appendage closure system

Characteristics and features of watchman device:

- It has a mesh like membrane which is spring-loaded to expand about the size of a quarter when once Doctor places it in the left atrium of the heart
- This mesh like network acts like a filter mechanism which allows blood to pass through while preventing or stopping the blood clots to pass through.
- This is a permanent type of implant. Gradually heart tissues grows over the device.
- The device has no batteries or wires.

- Majority of the patients who gets implanted watchman device can stop taking anticoagulants thereby reducing the risk of bleeding.

Indications for implanting watchman device

- Atrial fibrillation which is not caused by heart valve problems.
- Patients who have to take compulsory the anticoagulants or blood thinning products.
- Patients can take warfarin but needs an alternative for the anticoagulant because of the risk of bleeding or their lifestyle which puts them at the risk of bleeding

Procedure

Watchman device is implanted same like that of how stent is placed. A narrow tube is inserted through a small opening which is made in the upper leg of the patient. Then gradually physician guides watchman device into the patient heart. This is performed under general anaesthesia and usually takes an hour to complete the procedure. Patients commonly stay in the hospital overnight and discharged the very next day.

Mechanism of Action

Non-Valvular atrial fibrillation is an irregular heart rate and rhythm which causes the blood to pool down in the left atrial appendage (LAA) of the heart. In this area the blood can form clots which is then circulated to other parts of the body. Now the clots when it is circulated in the brain can lead to stroke. People with non-valvular A-Fib are five times more likely to have a stroke

than people who have a normal heartbeat. It is believed that the majority of strokes that people with non-valvular A-Fib have are caused by clots that formed in the LAA.

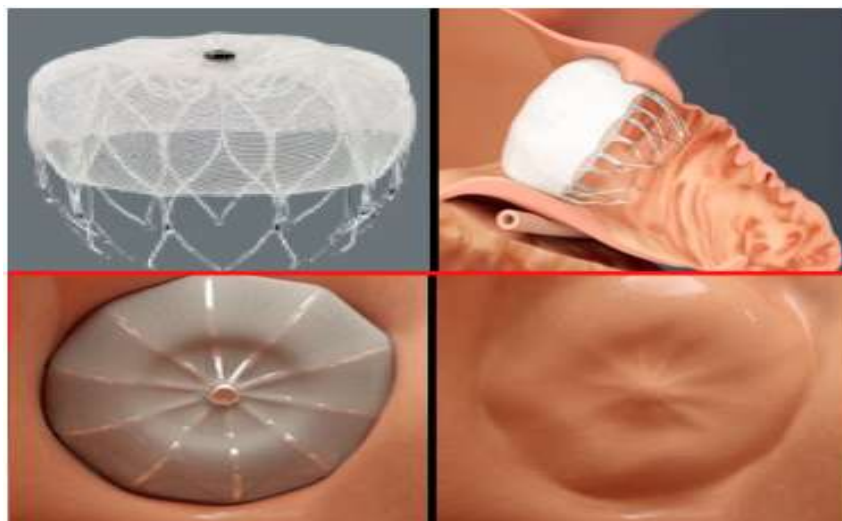
Watchman is an umbrella-shaped filter about the size of a quarter that is placed in the opening of the LAA, so blood can flow in and out, but clots that form in the LAA cannot escape. Eventually, heart tissue grows over Watchman™, permanently closing the LAA and preventing blood from pooling there. You should be able to discontinue the use of blood thinners after 45 days. The Watchman™ is intended to be left in place permanently. Heart tissue eventually grows over the device.

Contraindications

- Patients who cannot take warfarin, aspirin, or Clopidogrel
- Patients who should not or cannot undergo heart catheterization procedures
- Patients who have an allergy or sensitivity to nitinol (nickel and titanium) or any of the other materials in the WATCHMAN Implant
- Patients with a left atrial appendage that is too large or too small to fit the WATCHMAN Device.

Safety

The WATCHMAN Implant has a proven record of safety – with over 20,000 procedures performed worldwide and over 10 years of clinical studies in more than 2,000 patients. It is the only device of its kind approved by the U.S. Food and Drug Administration.



Source: Google

Fig.2: Watchman Device Placement

Conclusion

It is one of the common non pharmacological treatment for atrial fibrillation which is associated with stroke. The risk associated with it has been evaluated and is found to be feasible, effective and safe in patients who have a relative contraindication with long term warfarin, the anticoagulant. The watchman implant is placed over left atrial appendage closure device is a permanent implant which is designed in such a way to close the left atrial appendage in the heart, and thereby reduce the risk of stroke.

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