

Heart valve surgery without knives

The surgeon's knife has been replaced with minimally invasive tools which have revolutionised heart surgery.

Technological developments in the field of cardiology have taken place at a lightning pace in recent years which means much of what we dreamed of just a few years ago is today a reality. This is especially so with heart valve surgery.

For decades, the definitive management of aortic valve disease – a malfunction in one of the heart valves that controls the flow of blood out of the heart - required open-heart surgery. This involved artificially stopping the heart and putting the patient on a cardio-pulmonary bypass machine to keep them alive while the operation was performed, after which the heart was restarted.

Given the risks involved and the physical stress this creates for the body, many elderly patients have been denied this form of treatment.

However, medical research over the past decade has resulted in the development of a technology which allows the aortic valve to be replaced without opening the chest and without stopping the heart itself.

Transcatheter Aortic Valve Implantation (TAVI) was first performed in 2002 in France and is now clinically practiced in many different areas of the world, with the Europeans being particularly mature in this field. It is now available in Hong Kong.

TAVI uses a similar concept to traditional angioplasty with the diseased aortic valve being approached via a peripheral artery, most commonly from a large artery in the groin, the femoral artery.

A small cut is made in the artery, through which a man made bioprosthetic heart valve is delivered into the correct position inside the heart.

This new heart valve is crimped down so it can fit inside and travel up the artery to the heart. Once correctly positioned, it is re-expanded into its normal shape, pushing the diseased aortic valve aside and immediately taking over the normal function of the heart valve to regulate the blood flow out of the heart.

The entire procedure is done with a beating heart and in many European centres it can be performed under local anaesthesia alone.

In experienced hands, the whole procedure takes as little as 60 to 90 minutes and patients are usually discharged home within 5 days of the operation.

Large clinical trials have shown TAVI to have a similar one-year survival rate as traditional surgical aortic valve replacement in patients who are deemed high risk for open-heart surgery.

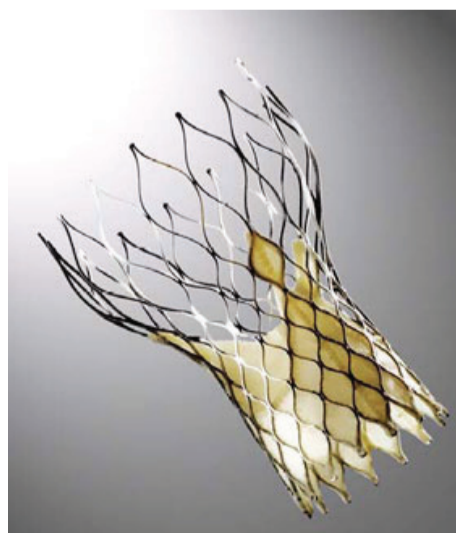
TAVI has therefore revolutionized the management of heart valve disease and provided a viable option for patients that would have previously been denied surgery.

However, not all patients with aortic valve disease are suitable for TAVI. Therefore it is important that patients are meticulously assessed prior to the procedure.

For further details, contact Hong Kong Adventist Hospital on 3651 8888.



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Percutaneous Porcine Pericardial Tissue Valve