



# Current Status of EVAR in Hong Kong

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**O**f the 7 million people that live in Hong Kong, 11% are over the age of 65. Abdominal aortic aneurysms (AAAs), however, remain under-diagnosed and undertreated. Annually, about 180 AAA operations are performed, with approximately 50 elective open repairs for intact aneurysms and 70 open repairs for ruptures. Sixty endovascular aneurysm repairs (EVAR) for AAA were recorded in 2006.

## THE HOSPITAL AUTHORITY

The first EVAR for AAA was attempted as early as 1998, and several programs gradually took shape after the turn of the century with the US FDA approval of the AneuRx device (Medtronic Inc., Santa Rosa, CA). At present, EVAR is largely performed in Hong Kong by vascular surgeons independently or in cooperation with interventional radiologists and predominantly in publicly funded Hospital Authority establishments. These constitute major university or regional hospitals, which provide for more than 85% of inpatient services in the territory at minimal charge. In 2006, 82% of EVAR was done in three hospitals, while the others contributed only sporadic cases.

The Hospital Authority does not strictly regulate devices, but all endografts used must at least possess CE marking or FDA approval and must be chosen by the clinician. In general, EVAR was the preferred option for patients over the age of 70 with significant comorbidity, and open repair would be recommended for the younger and fit patients. The decision of open repair versus EVAR is largely reached by an assessment of the patient's general condition, the aneurysm anatomy, and the patient's preference after a discussion between

the surgeon and the patient. In Queen Mary Hospital, the teaching hospital of the University of Hong Kong where more than half of EVAR procedures in the territory were performed, EVAR has become the first line of treatment for AAAs, with a 72% endovascular repair rate for nonruptured AAA in 2006. In hospitals with less endovascular experience, open repair would be more liberally performed.

## DEVICE CHOICES

Availability and technical support often dictate the choice of device. Over the years, only a few companies have made an effort to market their grafts in Asia due to diverse geographic and regulatory practices, as well as logistics and support difficulties. The first-ever device implanted in Hong Kong was the Boston Scientific Vanguard (Boston Scientific Corporation, Natick, MA), but this was quickly abandoned in favor of the Medtronic AneuRx graft because of the AneuRx's simplicity. The AneuRx became the dominant choice in 2000 and remained so for 2 to 3 years but was gradually phased out by the Talent device (Medtronic) for its greater flexibility and suprarenal fixation design. There was a brief appearance of the early Gore Excluder (Gore & Associates, Flagstaff, AZ) graft in 2003, but it never gained popularity due to the limitation in device sizes. In 2003, Cook Medical (Bloomington, IN) launched the Zenith device in Hong Kong, and, due to its wide range of components and conformity with Asian anatomy, the graft was well received. As of 2006, only two devices remained on the market. The Cook Zenith Flex graft took an estimated 85% of market share, and the remaining 15% went to the Medtronic Talent device.

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## EVAR in Hong Kong

### OBSTACLES

One of the major obstacles to the EVAR program is reimbursement. Although traditional open AAA repair is covered by all hospitals as standard therapy, EVAR is still regarded as an expensive new technology. The Hospital Authority did not directly restrict the use of EVAR, but it did not provide separate financial support. With no new funding, the hospitals have to meet the device cost from a limited and decreasing budget. Those interested in pursuing an EVAR program were forced to improvise and turned to the patients. It is estimated that the patients themselves pay for approximately 80% of stent grafts implanted today, either self-financed or via insurance. For the economically disadvantaged with sound indications, the stent graft may be supported out of charitable donations on a case-by-case basis. For this reason, the great majority of EVAR procedures, even in experienced centers, are performed electively, as logistics and funding difficulties would deter widespread use of EVAR for ruptured AAAs. At present, the system seems to be in a state of balance, and there is no apparent incentive in the health care administration to change the funding arrangement. However, the issue of cost has significantly limited the more widespread practice of EVAR in many surgical units.

### CONCLUSION

Due to the relatively low incidence of aortic aneurysms, there is no national screening program in place. Nevertheless, with a rapid proliferation of the use of imaging studies for other abdominal conditions, we are seeing a consistent rise in the detection of AAAs in the territory. Although Hong Kong lacks a funding policy for EVAR, and medical insurance is far from universal, the surgeons have realized the benefits of EVAR. Several major hospitals have started endovascular programs, and an increasing number of young operators have completed training. The overall EVAR rate for intact aneurysms has already exceeded 50% in the territory and is expected to rise due to increased patient acceptance. There has also been a steady growth in the use of endovascular stent graft technology in treating thoracic aortic diseases, and more than 30 procedures were done yearly. Given time and space for development, EVAR has a definite place in the future of health care in Hong Kong. ■

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