Mini-invasive robotic vascular surgery

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Objectives: The da Vinci system has been used by a variety of disciplines for laparoscopic procedures but the use of robots in vascular surgery is still relatively unknown. The feasibility of laparoscopic aortic surgery with robotic assistance has been sufficiently demonstrated. Our clinical experience with robot-assisted vascular surgery performed using the da Vinci system is herein described.

Methods: Between November 2005 and September 2015, we performed 342 robot-assisted vascular procedures. 245 patients were prospectively evaluated for occlusive diseases, 70 patients for abdominal aortic aneurysm, four for a common iliac artery aneurysm, five for a splenic artery aneurysm, one for an internal mammary artery aneurysm five for hybrid procedures, three for median arcuate ligament release and nine for endoleak II treatment post EVAR.

Results: 327 cases (95.6%) were successfully completed robotically; one patient’s surgery (0.3%) was discontinued during laparoscopy due to heavy aortic calcification. In fourteen patients (4%) conversion was necessary. The thirty-day mortality rate was 0.3% and early non-lethal postoperative complications were observed in six patients (1.75%).

Conclusions: Our experience with robot-assisted laparoscopic surgery has demonstrated the feasibility of this technique for occlusive diseases, aneurysms, endoleak II treatment post EVAR, for median arcuate ligament release and hybrid procedures.

Biography

Petr Stadler is the Head of the Department of Vascular Surgery, Na Homolce Hospital in Prague, Czech Republic. He was certified as a console surgeon for the da Vinci surgical system in August, 2005 at the University of California, Irvine. He is a member of the Czech Association of Cardiovascular Surgery, the ESVS, the ISMICS, the SRS and a founding member of the International Endovascular and Laparoscopic Society. He has also received a few prestigious honors from the Czech Association of Cardiovascular Surgery for the best publications in 2004 and 2006, the Letter of Appreciation from Korean Society of Endoscopic and Laparoscopic Surgeons in May 2008, the price of the Czech Society of Angiology for the publication in the year 2007 and the best audiovisual presentation in 2009 in USA (ISMICS) and in 2013 in USA (SCVS). He performed also the robot-assisted vascular operations in South Korea, Russia, Poland and India.

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