Increased Risk For Adverse Events Following Re-Intervention In Patients With Restenosis After Prior CEA

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Objectives: Outcomes of patients undergoing reintervention for restenosis after prior ipsilateral carotid endarterectomy (CEA) in the era of carotid stenting (CAS) are unclear. We assessed perioperative results and durability of CAS and CEA in symptomatic (SX) and asymptomatic (ASX) patients undergoing reintervention.

Methods: Patients undergoing CAS and CEA were identified in the Vascular Study Group of New England (VSGNE) between January 2003 and November 2011. Demographics, preoperative risk factors, 30-day outcome (stroke/death), cranial nerve injury, and restenosis ≥50% at follow-up were compared across primary procedures and reinterventions (CAS vs CEA). Fisher exact test or χ^2 test were used to analyze significance differences ($P < .05$) between the different groups.

Results: Of a total of 9357 CEA procedures (33% SX), 212 patients (2.3%) underwent redo CEA (36% SX). Of 663 CAS procedures (34% SX), 220 patients (33%) underwent CAS after prior ipsilateral CEA (31% SX). Demographics of patients undergoing CAS after prior CEA were comparable to patients undergoing redo CEA. Forty percent of CAS patients had at least one medical high-risk factor for CEA. Asymptomatic patients undergoing redo CEA had a significantly higher stroke/death risk (3.0%) than primary CEA (0.9%), but equivalent to CAS after prior CEA (2.0%; Table). No difference in perioperative cranial nerve injury was identified between redo CEA and primary CEA (5.2% vs 4.7%). Follow-up was available for 56.7% of CAS (median, 254 days) and 68% of CEA patients (median, 370 days). Redo CEA had higher rates of ≥50% restenosis than primary CEA (14.8% vs 9.8%, $P = .06$); there was no significant difference between CAS after prior CEA (17.2%) compared with redo CEA (14.8%, $P = .62$) and primary CAS (18.6%, $P = .73$).

Conclusions: In the VSGNE, CEA and CAS showed equivalent outcome (30-day stroke/death risk and restenosis) in ASX and SX patients treated for restenosis after prior ipsilateral CEA. However, regardless of procedure, the risk of reintervention was increased compared with patients undergoing primary CEA.

Table. 30-day stroke/death risk for patients undergoing CEA or CAS following prior ipsilateral CEA

	ASX			*SX*		
	Primary	*Prior CEA*	P-*value*	*Primary*	*Prior CEA*	P *value*
CAS	0.7%	2.0%	0.35	7.6%	4.4%	.56
CEA	0.9%	3.0%	**0.04**	1.8%	4.0%	.16
P-value	1.0	0.71		**<.01**	1.0	

ASX, Asymptomatic, *SX,* symptomatic.
Bold values indicate, *P* value <.05.

Office-Based Endovascular Suite Is Safe for Most Procedures

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Objective: This study assessed the safety of endovascular procedures in office setting over a long-term period.

Methods: Between May 22, 2005, and November 22, 2011, 2309 patients underwent 5029 percutaneous procedures in an office-based procedural suite. Demographics of the patients, complications, and hospital transfers were documented in a prospective manner. Follow-up calls were made, and a satisfaction survey was administered. Most procedures were done under local anesthesia or conscious sedation. All patients, except those having catheter removal, received acetaminophen and hydrocodone (5/500), diazepam (5 to 10 mg), and one dose of an oral antibiotic preprocedure and three doses postprocedure. Patients requiring conscious sedation received fentanyl and midazolam. Conscious sedation was used in patients having peripheral arterial interventions. Blood urea nitrogen, creatinine, international normalized ratio, and partial thromboplastin time were performed prior to peripheral arteriograms. Patients on dialysis (end-stage renal disease) had no laboratory work done preoperatively. Patients considered high risk, those who could not tolerate the procedure with mild to moderate conscious sedation, or those who were morbidly obese were not candidates for office-based procedures.

Results: There were no procedure-related deaths. Procedures and complications are listed in the Table. There were 45 total complications (0.9%), of which 20 (0.4%) were site related, 14 (0.3%) were deep venous thrombosis after a venous procedure, and 11 (0.2%) were other medical problems. Seventeen procedures required subsequent hospital transfer. Of those patients surveyed, 99% indicated that they would come back to the office for needed procedures.

Conclusions: When appropriately screened, almost all peripheral interventions can be done in the office with minimal complications. For dialysis patients, outpatient intervention has a very low complication rate and is the mainstay of treatment to keep the dialysis access patent. Venous insufficiency when managed in the office setting also has a low complication rate. Office-based procedural settings should be the preferred site for percutaneous interventions for arterial, venous, and dialysis-related procedures.

Table. Office based procedural complications May 22, 2005–November 22, 2011

Procedure	*Procedures (No.)*	*Complications, No.*			*DVT (No.)*	*Hospital transfers (No.)*
		Total	*Site-related*	*Medical*		
Arteriogram with runoff	422	6	5	1		2
Arteriogram with intervention[a]	325	7	6	1		5
Fistulogram	162	1		1		1
Fistulogram intervention[b]	1375	2	1	1		1
Fistulogram with thrombectomy of dialysis access	498	7	3	4		6
EVLT	313	8		2	6	
EVLT & micro	427	9	2		7	
Microphlebectomy	110	2	1		1	
Catheter insertion	329	2	2			1
Catheter exchange	229					
Catheter gram	4					
Catheter removal	628					
Powerport	111					
Powerport removal	15					
Venogram	43					
Venoplasty	5					
IVC filter insertion	4	1		1		1
IVC filter removal	29					

[a]Arteriogram interventions include angioplasty, coiling, stenting, atherectomy.
[b]Fistulogram interventions include angioplasty, coiling, stenting.

Robot-Assisted Vascular Surgery, 250 Cases

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Objectives: The feasibility of laparoscopic aortic surgery has been adequately demonstrated. Our clinical experience with robot-assisted aortoiliac reconstruction for occlusive diseases, aneurysms, endoleak II treatment and hybrid procedures performed using the da Vinci system is described.

Methods: Between November 2005 and April 2012, we performed 250 robot-assisted vascular procedures. A total of 189 patients were prospectively evaluated for occlusive diseases, 48 patients for abdominal aortic aneurysm, two for common iliac artery aneurysm, two for splenic artery aneurysm, one for internal mammary artery aneurysm, four for hybrid procedures, and four for endoleak II treatment after endovascular aneurysm repair. The robotic system was applied to construct vascular anastomosis, for thromboendarterectomy, for aortoiliac reconstruction with closure patch, for dissection of the splenic artery, and for posterior peritoneal suture. A combination of conventional laparoscopic surgeries and robotic surgeries were routinely included. A modified, fully robotic approach without laparoscopic surgery was used in the last 80 cases in our series.

Results: A total of 241 cases (96,4%) were successfully completed robotically, one patient's surgery was discontinued during laparoscopy due to heavy aortic calcification. Conversion was necessary in eight patients (3.2%). The 30-day mortality rate was 0.4%, and nonlethal postoperative complications were observed in 13 patients (5.2%).

Conclusions: Our experience with robot-assisted laparoscopic surgery has demonstrated the feasibility of this technique for occlusive diseases, aneurysms, endoleak II treatment after endovascular aneurysm repair, and hybrid procedures. The da Vinci robotic system facilitated the creation of the aortic anastomosis and shortened the aortic clamping time compared with purely laparoscopic techniques.

Identifying TAAA IV Patients at High Risk for Open Repair

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