



OUTCOMES OF SIMULTANEOUS CAROTID ENDARTERECTOMY AND CORONARY ARTERY BYPASS GRAFTING WITH “NO TOUCH AORTA“ TECHNIQUE

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Background

The occurrence of severe carotid artery disease in more than 12% of patients requiring coronary artery bypass grafting (CABG) results in a discrepancy concerning best treatment for both diseases. We reviewed the early outcomes of patients with CABG and simultaneous carotid endarterectomy (CEA).

In our hospital all patients underwent minimally invasive multivessel coronary artery bypass grafting (MICS CABG) and CEA. MICS from left-sided mini-thoracotomy using the left and right internal mammary arteries (BITA) and autovenous coronary artery bypass grafts using the “no touch aorta” technique. All patients underwent Y-shaped, composite sequential bypass surgery. All operations were performed without extracorporeal circulation.

Perioperative characteristics in group of patents

Variables	Combined CEA–CABG (n = 27)
Age (y), mean ± SD	65.1 ± 7.8
Female, n (%)	4 (14.8)
BMI, medium (IQR)	25.3 (4.1)
Smoking, n (%)	24 (88.8)
Diabetes mellitus, n (%)	16 (59.2)
Atrial fibrillation, n (%)	3 (11.1)
Previous MI, n (%)	11 (40.7)
Previous PCI, n (%)	2
Symptomatic carotid stenosis, n (%)	17
Carotid occlusion, n (%)	10
Unilateral carotid stenosis, n (%)	17
Three-vessels disease, n (%)	9
Y graft bimammary technic, n (%)	19(70.3)
Y graft with SVG, n (%)	8 (29.7)
Intensive care unit stay (days), medium (IQR)	1
In-hospital stay (days) ± SD	7±2

Results

All patients underwent full myocardial revascularization and CEA of a hemodynamically significant plaque. The average number of grafts was (2,5±0.5). Perioperative mortality was 0%. At the time of follow-up patency of mammary grafts was 100%. 14 patients (51.8%) underwent 256-slice CT-bypass angiography (CT-BA) on the 7th postoperative day. 4 patients underwent direct coronary angiography.

Material and methods

Between January 2023 and December 2024, 27 patients with stable forms of coronary heart disease (CHD) were subjected to MICS + CEA. MICS operations were performed via the left-sided minithoracotomy using the left and right internal mammary arteries (BITA) and autovenous coronary artery bypass grafts with the “no-touch-aorta” technique, without anastomoses with ascending aorta. In the setting of double- or triple-vessel disease patients received Y-shaped, composite sequential bypass configuration of conduits

Im.1

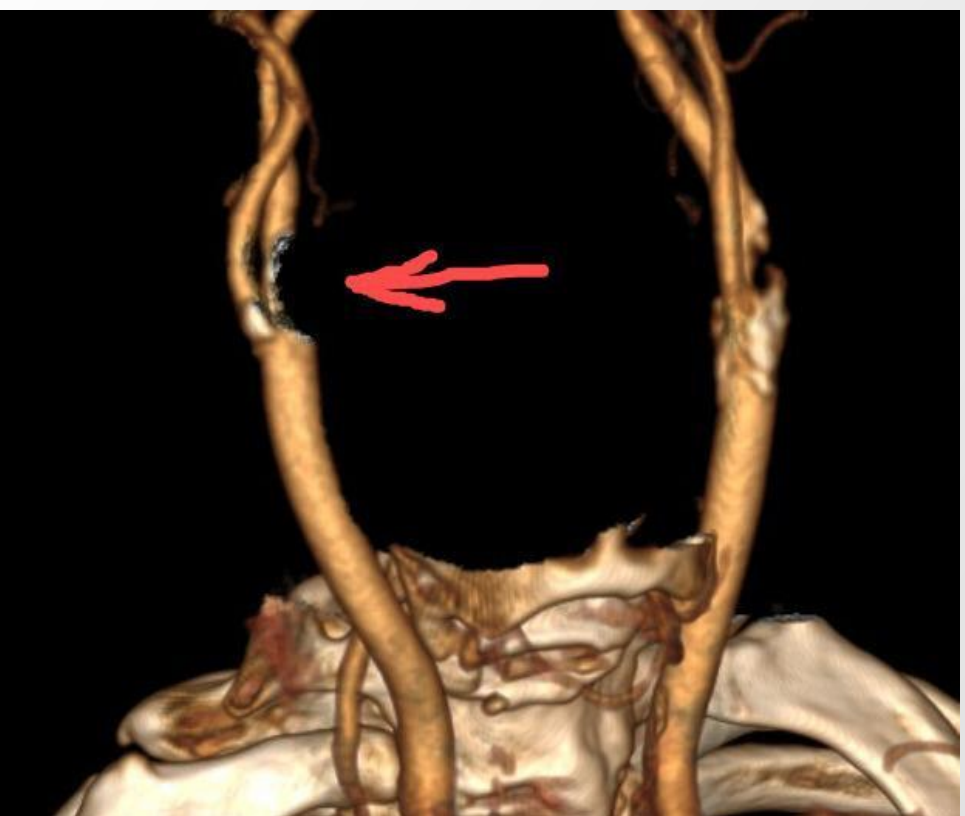


Fig. 1.Patient with bilateral carotid stenosis



Fig. 2. Critical stenosis of the left main coronary artery

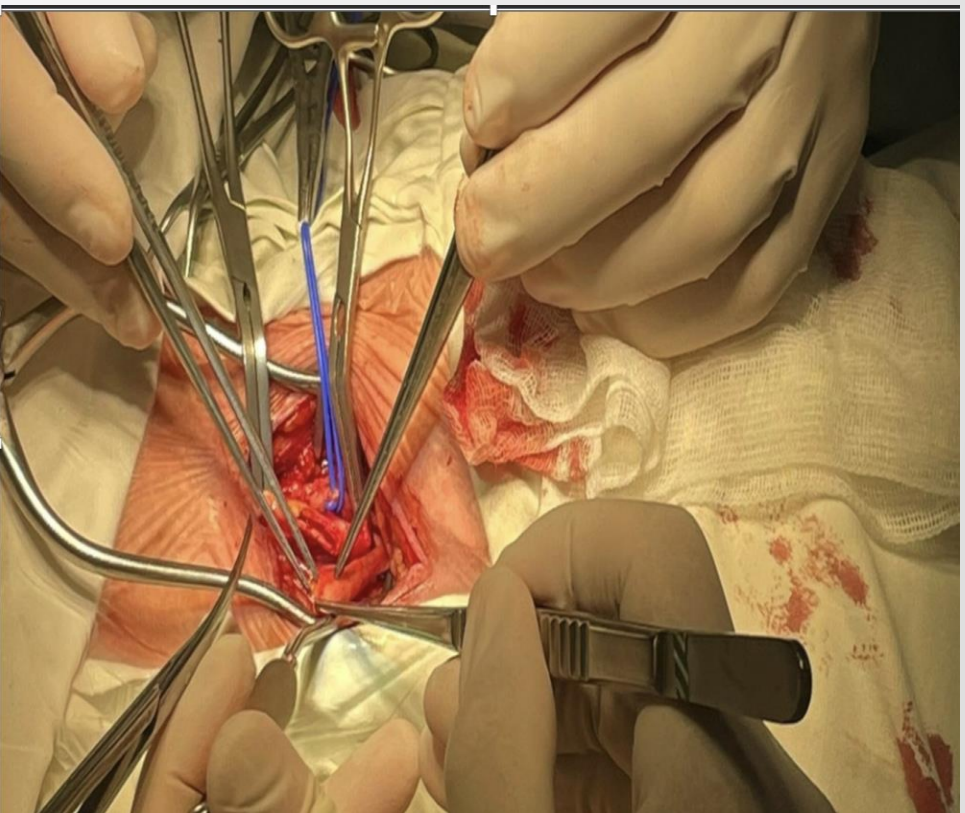


Fig. 3. CEA with eversion technic as a first stage

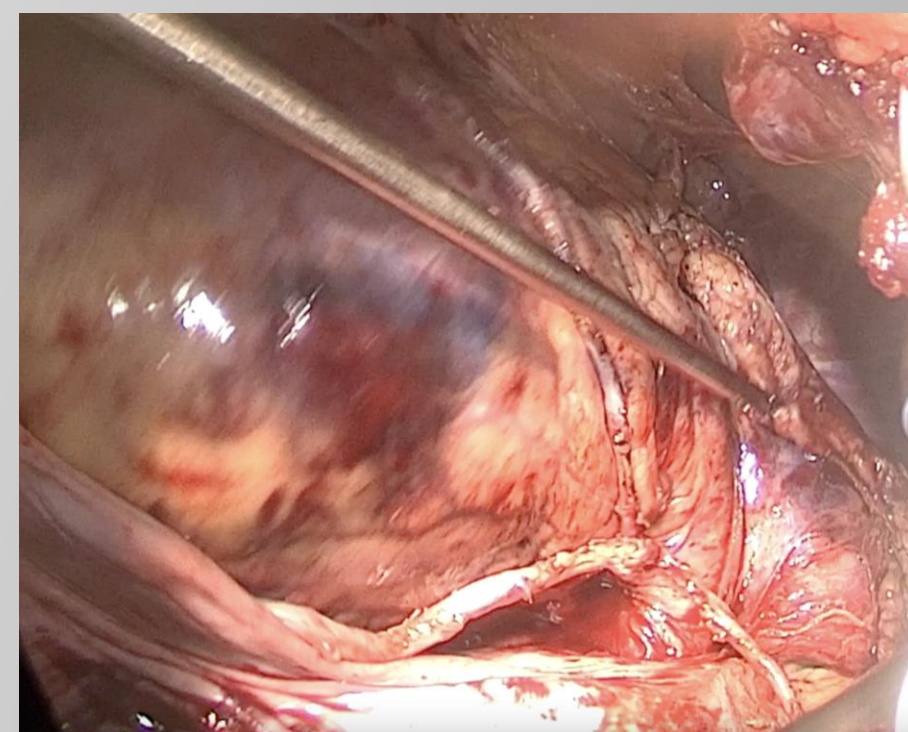
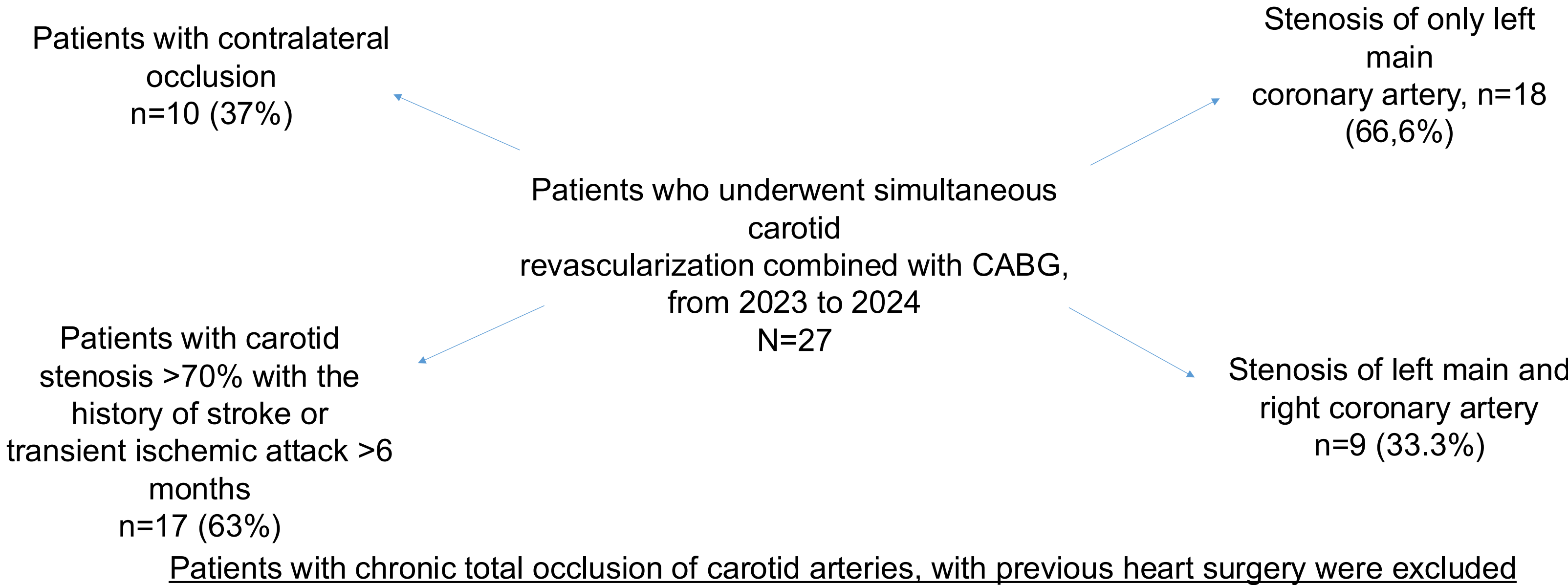
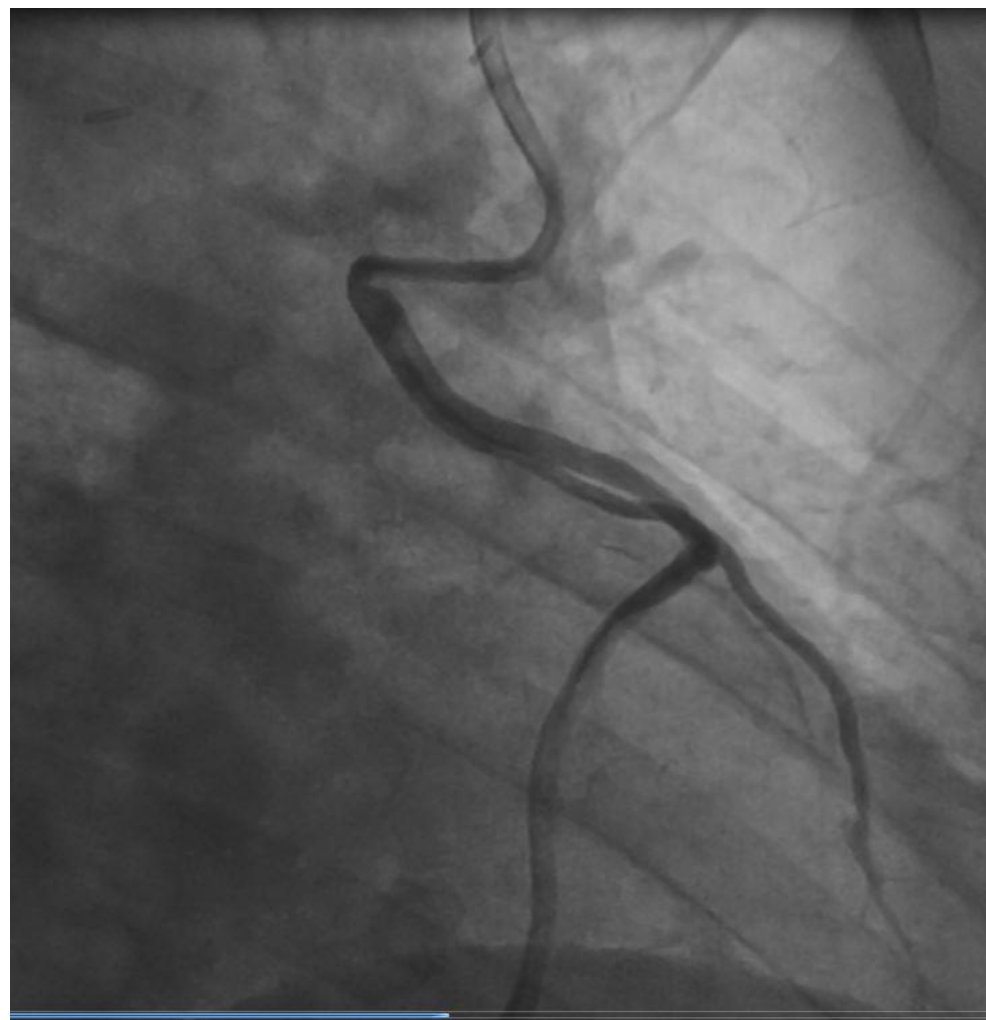


Fig. 4. Final intraoperative endoscopic view

Selection patients for simultaneous operation



Im.2



6. Y-anastomosis on LAD and RCA on MICSCAB on the 6 month



7. 3D model CT-tomography on the 7th day after surgery

Early outcomes of combined CEA–CABG

Early outcomes	Combined CEA–CABG (n = 27)
Death, %	0
Stroke, %	0
MI, %	0
Composite events, %	0

Conclusion

Simultaneous CEA and CABG can be performed with a low risk for neurological complications and acceptable mortality. Occlusion of contralateral carotid artery could be identified as an evident predictor for increased neurological complications. The indications and timing of simultaneous carotid endarterectomy with CABG are still controversial, and additional data collection is needed to decide on the best management plan for this group of patients. Also, reducing the risk of developing a sternal infection requires further discussion of the need to use lateral minithoracotomy in routine practice. The BITA technique or the use of composite grafts should be used to achieve complete coronary revascularization; the “no touch aorta” technique is a promising technique of choice. Large randomized studies are still needed to confirm these results.