

Carotid artery and internal jugular vein as recipient vessels in secondary free flap reconstruction for recurrent head and neck cancer

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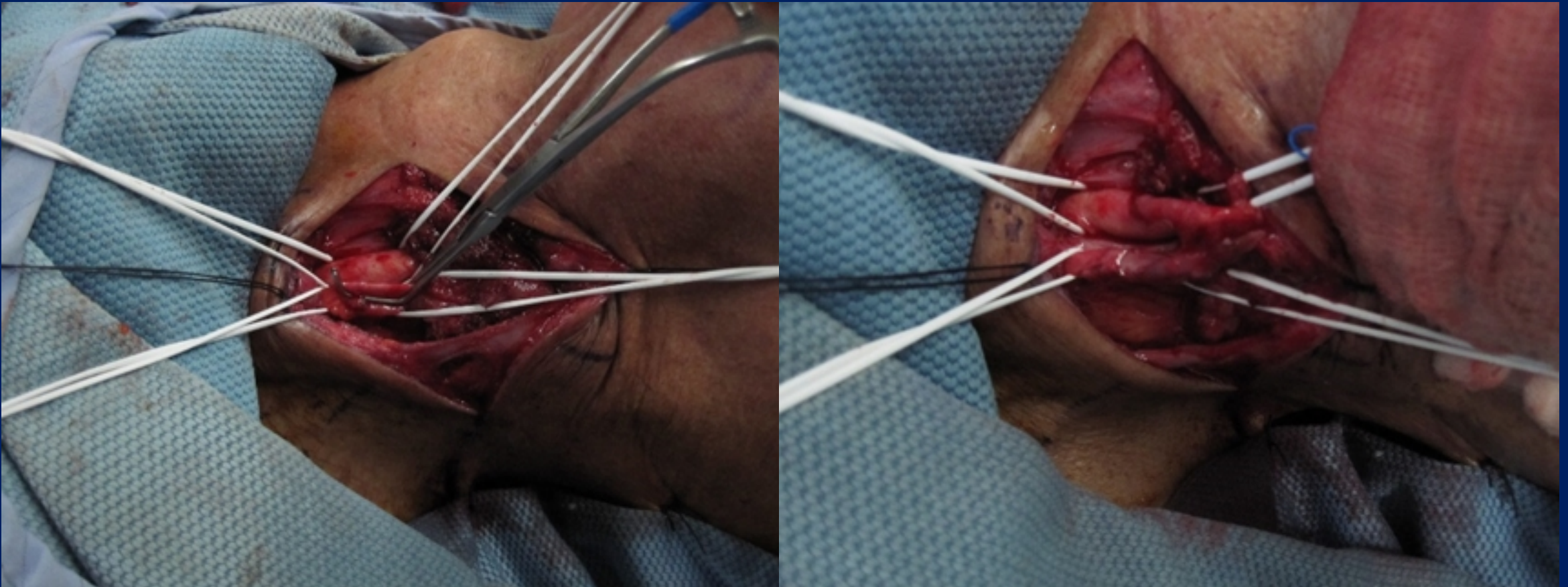
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Nothing to disclosure.

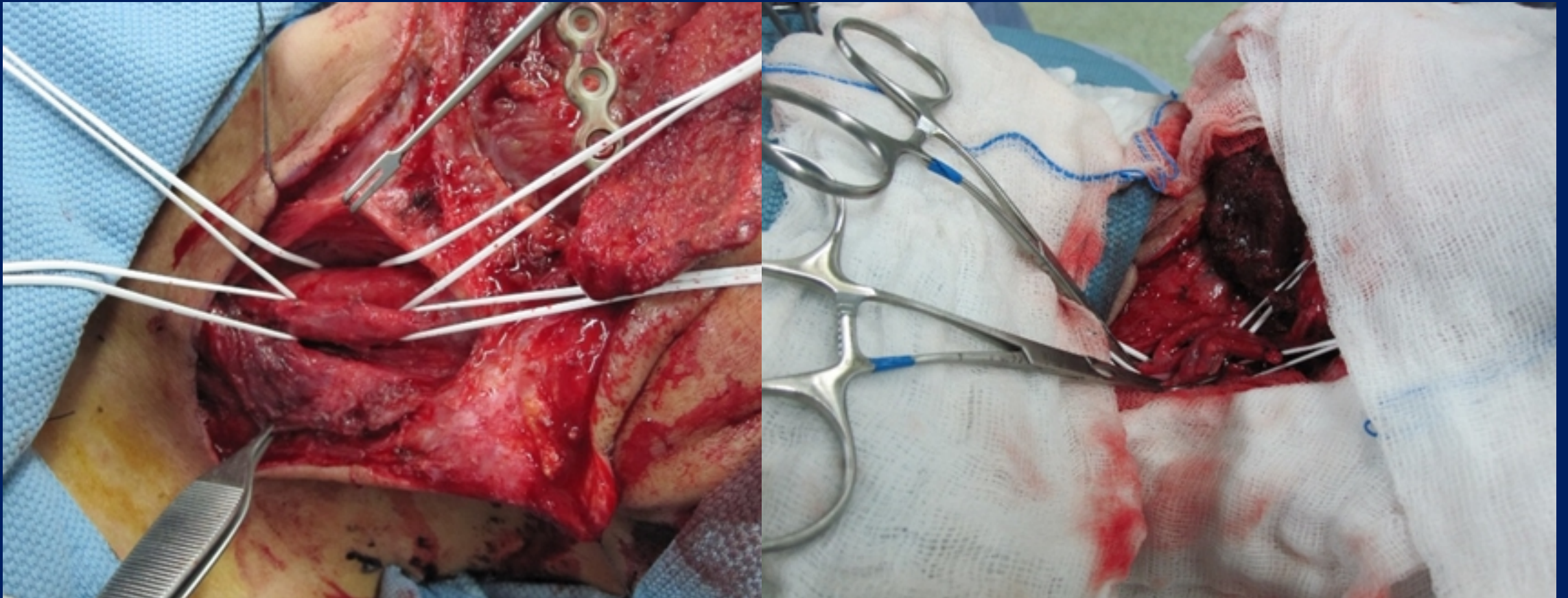
Introduction

- In second free flap transfer, reliable recipient vessels is crucial for success
- Carotid artery (internal or external) and internal jugular vein are last resorts in primary reconstructions; however, they can be lifeboats in recurrent cancer cases.

A 51 y/o patient presents with recurrent squamous cell carcinoma in the oral cavity and lower lip. After tumor ablation, a second ALT flap was performed, using the left common carotid artery and internal jugular vein as recipient vessels with end-to-side anastomosis.



A 47 y/o patient with recurrent oral SCC presents with left buccal mucosa loss and a mandibular defect. He received a second ALT flap after tumor ablation, using the left common carotid artery and internal jugular vein as recipient vessels with an end-to-side anastomosis.



Materials and Methods

- All 234 patients were diagnosed with recurrent squamous cell carcinoma of the buccal region with previous free flap reconstruction.
- Wide excision of the tumor was performed, resulting in a significant soft tissue defect. A second free anterolateral thigh flap was transferred for reconstruction.

Materials and Methods

- 41 free flaps were transferred with an end-to-side anastomosis using the carotid artery and internal jugular vein as recipient vessels.
- Perioperative and postoperative complications were analyzed retrospectively in those patients where the carotid artery and internal jugular vein were used as recipient vessels

		Recipient sites				
		Control group(n=193): minor branch of neck vessels		Study group(N=41): Carotid artery(common or external) Internal jugular vein		
Age (years)		52		50		
Sex (M : F)		189: 4		39 : 2		
Cancer stage (TNM stage I, II, III, IV)	I	19	9.8%	7	17.1%	P<0.05
	II	43	22.3%	10	24.4%	
	III	29	15.0%	3	7.3%	P<0.05
	IV	101	51.8%	21	51.2%	
Previous Radiotherapy		37	19.2%	19	46.3%	
Hospital stay (day)		22		22		
Overall Complications		29	15.0%	8	19.5%	
Total flap failure		8	4.1%	1	2.4%	
Partial flap necrosis		2	1%	2	4.9%	
Infection		6	3.1%	0	-	
Hematoma		4	2.1%	0	-	
Orocutaneous fistulae		5	2.6%	1	2.4%	

Results

- In 234 recurrent cases, a second free flap transfer was required; forty one (41/234; 17.5%) patients did not have any ipsilateral recipient vessels except the carotid artery and internal jugular vein due to previous radical neck dissection.
- Flap survival was 96.2% (225/234).

Results

- Overall complication rate (241 patients) was 15.8%, including flap-related: 12.4%, infection: 2.6%, partial flap necrosis: 1.7% and orocutaneous fistulae: 2.6%.
- The complication rate in the study group was 9.8% (4/41). There was no significant difference in free flap failure rates between the two groups.

Discussion

- Stroke can be a devastating complication of carotid artery occlusion.
- With partial clamps, the blood supply continues during microvascular anastomosis. In our study, there was no case of cerebral vascular attack perioperatively.

Conclusion

- Microsurgical free tissue transfer, using the anterolateral thigh flap, has been a workhorse for head and neck reconstruction after tumor resection.
- When tumor recurrence is present, a second ALT flap transfer is still the first choice.
- However, the selection of recipient sites is most challenging in such cases.

Conclusion

- Using the carotid artery and internal jugular vein as recipient vessels for second free flap transfer has not only hemodynamic effectiveness but high success rates as well.
- Although not statistically significant, the complication rate is lower in this study group.

Conclusion

- There were no cerebral vessel accidents in our series.
- Carotid artery/internal jugular vein are reliable recipient vessels for free flap transfer in head and neck reconstruction, especially in cases of second free flap transfer.

Acknowledgements :

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