

Total lip reconstruction with free neurotized musculocutaneous serratus flap: a case report

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Background

- Total lip reconstruction = major challenge (volume, contour, function, sensibility)
- Traditional static flaps (e.g., radial forearm) → structure, no mobility
- Functional muscle flaps (e.g., gracilis) → function, poor skin coverage
- New approach: neurotized serratus anterior musculocutaneous free-flap

Case report

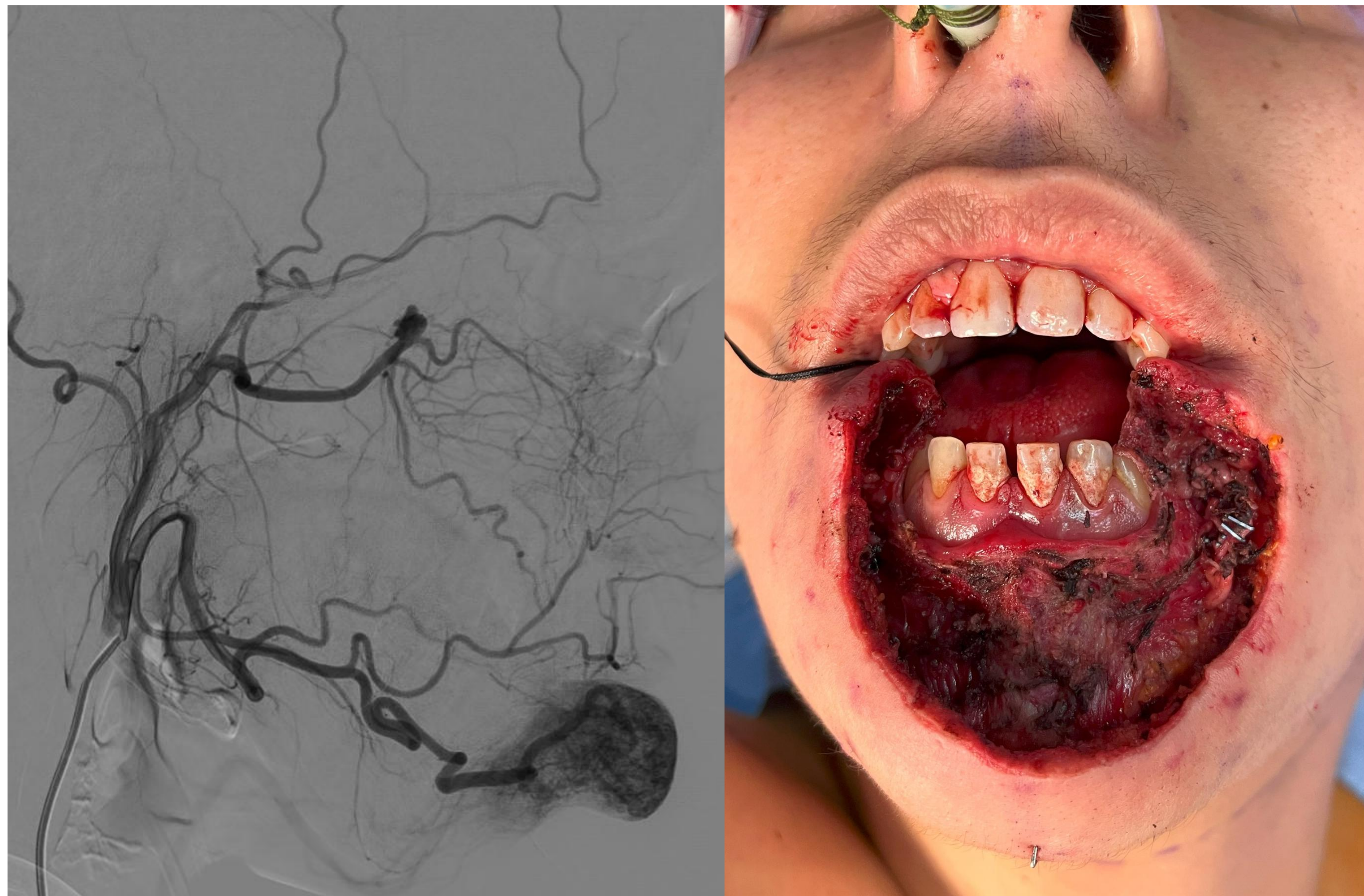
- 30-year-old female with complex lower lip AVM
- Preoperative embolization + complete AVM excision
- Serratus musculo-cutaneous flap harvest
- Coaptation with mental nerve and marginal mandibular nerve
- Inset as functional sling, anchored bilaterally to modiolus
- Initial complication: partial necrosis of mucosal lining → contracted lip, limited oral aperture
- Four staged revision procedures over 18 months
- Final follow-up May 2025: good contour, projection, function:
 - Sensory recovery: 0.02 g (skin paddle), 0.6 g (commissures), 1 g (median red lip)
 - ENMG: reinnervation + visible contraction of serratus muscle
- Outcome: dynamic oral competence + objective sensory recovery

Conclusion

- Musculocutaneous serratus free flap = promising alternative for total lip defects needing mobility + volume

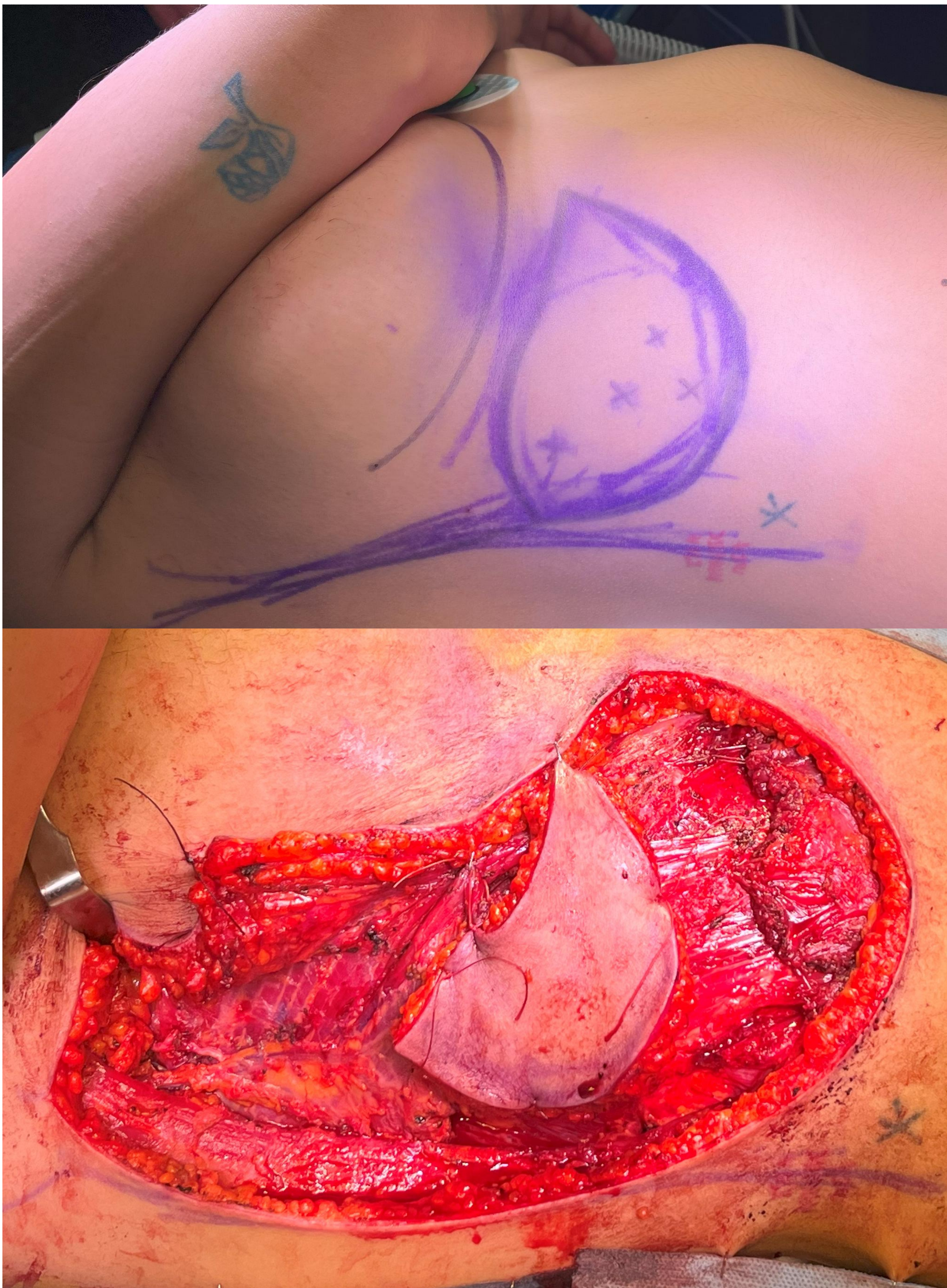


Pre-operative



Pre-operative arteriography

AVM resection



Serratus musculo-cutaneous flap harvest



Final result after revision surgeries