

Autologous Mandible Reconstruction in a Hypercoagulable Patient Following Multiple Failed Free Flaps

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Introduction

- Intrinsic patient factors remain a significant obstacle in craniofacial reconstruction although free flap failures have decreased with surgical advancements¹
- Coagulopathies affect 3% of patients receiving complex free flap reconstruction²
- Currently, thrombophilic patients experience a perioperative thrombosis rate of up to 20.7% and total flap failure rate of up to 15.5%²

Objective: Provide a long lasting, functional result in a thrombophilic patient in the setting of multiple failed reconstructions

- With multispecialty collaboration, higher success rates can be achieved in thrombophilic patients with a formal evaluation from a hematologist, complete hypercoagulable workup, and a patient-specific anticoagulation strategy²
- We present a case of multiple head and neck free flap failure in a patient with a previously unidentified coagulopathy

Case Images

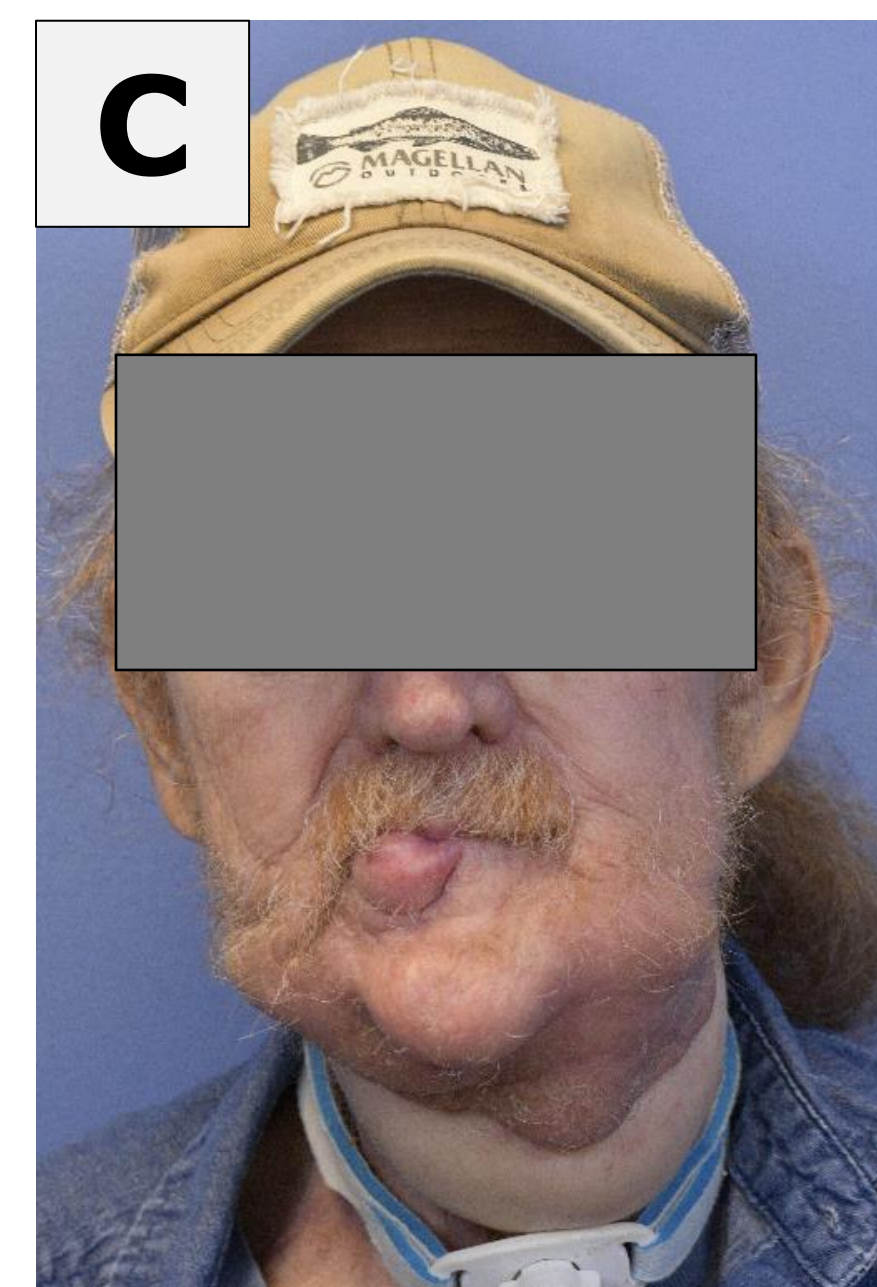
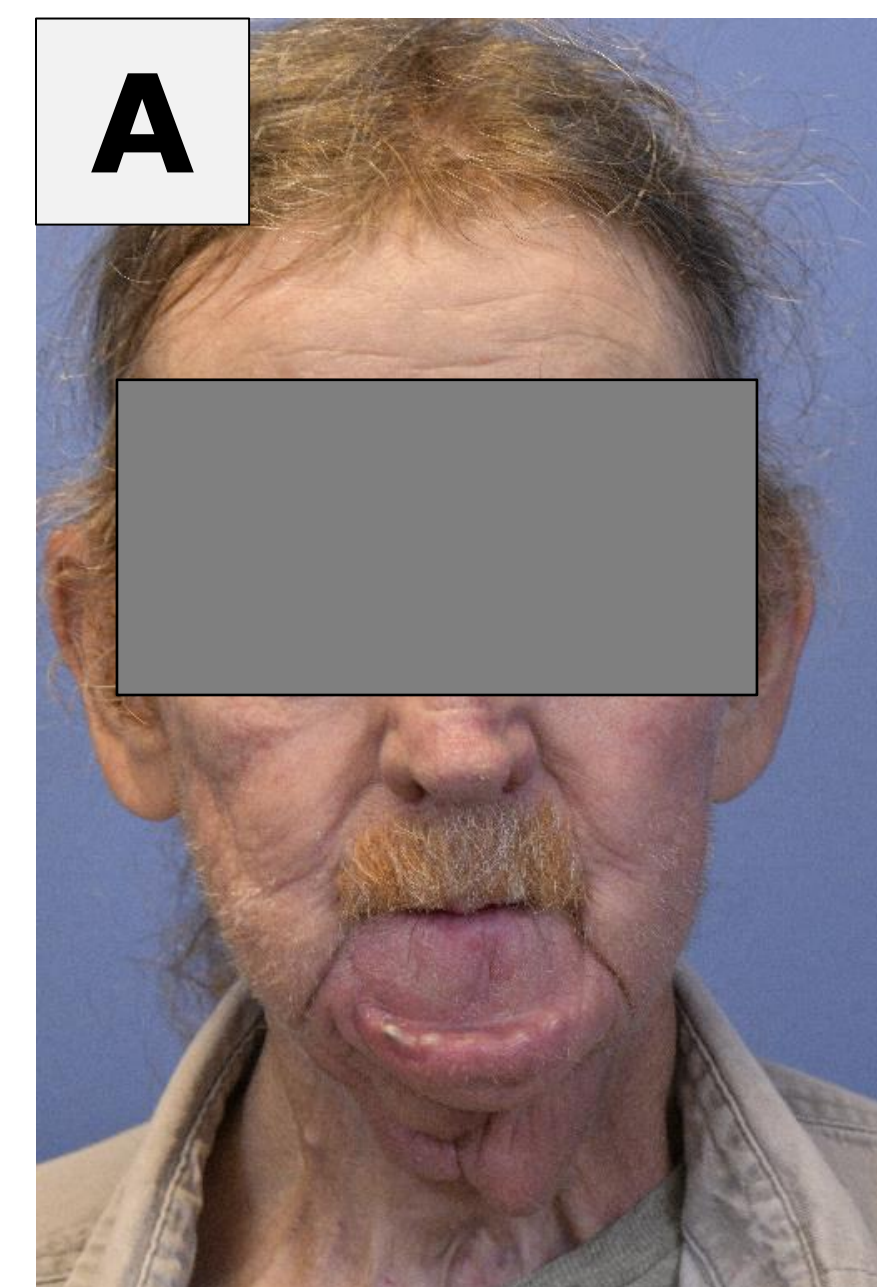


Figure 1. Autologous mandibular reconstruction in a hypercoagulable patient.

A) Preoperative photograph demonstrating impending hardware extrusion

B) Preoperative computed tomography demonstrating a >6cm anterior mandibular segmental defect

C) Postoperative photograph showing successful reconstruction before debulking and revision of external anterolateral thigh flap, and release of lower lip tethering

D) Postoperative computed tomography showing three segment iliac crest bone flap for mandibular reconstruction

Case Description

Outcomes

- A 53-year-old man with a history of squamous cell carcinoma of the floor of the mouth, and two remote free flap failures, presented for autologous mandibular reconstruction
- A hematology consult and hypercoagulability workup revealed antiphospholipid syndrome (a thrombophilic state)
- Consequently, a focused anticoagulation strategy included:
 1. Intraoperative heparin drip
 2. Stringent postoperative maintenance of Factor Xa levels (0.3 - 0.5 IU/mL)
 3. Transition to an outpatient enoxaparin regimen of 1 mg/kg twice daily for 1.5 months
- Mandibular reconstruction involved flow-through configuration of:
 1. Deep inferior epigastric arterial/venous graft
 2. Anterolateral thigh (ALT) free flap
 3. Deep circumflex iliac artery (DCIA) free flap
- Two returns to the operating room involved:
 1. Right neck hematoma & arterial anastomosis revision (post-op day 4)
 2. Left thigh hematoma & right orocutaneous fistula revision (post-op day 23)

Discussion

- Prophylactic anticoagulation regimens primarily incorporate intra- and postoperative use of sequential compression devices, heparin (bolus, infusion, and subcutaneous), enoxaparin, and warfarin
- Free tissue transfer following multiple failed attempts due to hypercoagulability remains a viable reconstructive option with close interdisciplinary collaboration, clinical monitoring, and patient-specific antithrombotic protocols

Conclusion

- We demonstrate that interdisciplinary care leads to improved results by obtaining a complete hypercoagulability workup and hematology consultation for our patient with multiple flap failures due to thrombosis

References

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2. Wang TY, Serletti JM, Cuker A, et al. Free tissue transfer in the hypercoagulable patient: a review of 58 flaps. *Plast Reconstr Surg*. 2012;129:443–453.

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