



Reconstructing the Reconstructed: A 30-Year Analysis of Repeat Mandibular Osteoradionecrosis Management

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Purpose

The reconstructive approach and outcomes for patients with Osteoradionecrosis (ORN) of the mandible who have already undergone prior mandibular reconstruction remain undescribed in the literature.

Methods

This is a 30-year retrospective analysis of mandibular ORNs on top of a prior same-side mandibular reconstruction, from 1994 to 2023.

Results

We identified 65 patients with mandibular ORN needing repeat reconstruction. Compared to first-time reconstructions, these patients had more complex defects, more revision surgeries, and worse speech outcomes (Table 1). Initial reconstruction type(s) did not affect final reconstruction outcomes (Table 2). In patients undergoing second bone flap reconstructions, outcomes were similar to first-time reconstructions, except for worse speech (Table 3).

	No prior recon, N (%) = 292 (82)	Prior recon, N (%) = 65 (8)	p
Concomitant skin defect	68 (58)	53 (82)	<0.00
Intact Condyle	25 (74)	46 (7)	0.64
Surgical site occurrences	54 (8)	2 (8)	>0.99
Microsurgical complications	9 (6.5)	3 (4.6)	0.78
Partial flap loss	(3.8)	(.5)	0.78
Total flap loss	7 (2.4)	(.5)	0.7
Number of revisions = 0	50 (5)	23 (35)	0.036
Tube-dependent feeds	8 (28)	25 (39)	0.078
≤50% Intelligible speech	8 (6.5)	9 (5)	0.038

Table 1. First-time versus repeat mandibular reconstruction.

	Soft tissue, N (%) = 3 (48)	Bone, N (%) = 28 (43)	Plate, N (%) = 6 (9.2)	p
New flap = soft tissue	3 (9.7)	9 (32)	(7)	0.083
Donor site complications	(3.2)	(3.6)	0 (0)	>0.99
Recipient site complications	5 (6)	7 (25)	0 (0)	0.4
Microsurgical complications	(3.2)	2 (7.)	0 (0)	0.7
Partial flap loss	0 (0)	(3.6)	0 (0)	0.7
Total flap loss	(3.2)	0 (0)	0 (0)	0.52
Number of revisions = 0	4 (45)	7 (25)	2 (33)	0.8
Tube-dependent feeds	4 (45)	(4)	0 (0)	0.2
≤50% Intelligible speech	2 (7.4)	7 (26)	0 (0)	0.3

Table 2. Outcomes of repeat reconstructions grouped by type of first-time reconstruction

	First-time bone flap, N (%) = 2 (86)	Second-time bone flap, N (%) = 34 (4)	p
Donor site complications	7 (3.3)	(2.9)	>0.99
Recipient site complications	36 (7)	9 (26)	0.9
Microsurgical complications	5 (7.)	2 (5.9)	>0.99
Partial flap loss	0 (4.7)	(2.9)	>0.99
Total flap loss	5 (2.4)	0 (0)	>0.99
Tube-dependent feeds	57 (27)	2 (35)	0.34
≤50% Intelligible speech	(5.4)	0 (29)	<0.00

Table 3. Outcomes of free bone flaps in 2nd time reconstructions.

Conclusions

Second-time mandibular defects due to ORN are more complex but can still be reconstructed using the same approach as the first reconstruction. However, patients should be informed beforehand that speech outcomes are likely inferior to first-time reconstruction .



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