

Fat Graft for Parotidectomy Defect Reconstruction in the Setting of Malignant Disease

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Abstract

Objectives

Currently, limited data examines the safety of utilizing fat transfers in the setting of malignant parotid disease. Here we evaluate the safety of fat graft reconstruction of parotidectomy defects in the setting of malignant disease.

Study Design

Retrospective cohort study

Methods

Electronic chart review of patients who underwent parotidectomy from 2012-2020 were reviewed.

Results

Three hundred and sixty-one patients were identified at a single institution who underwent parotidectomy, and 113 (31.3%) were for malignancy. One hundred and thirty-two patients underwent fat graft reconstruction (49.2%, n=65 for umbilical, 50.8%, n=67 for dermal). One-third of patients had malignant pathology (34.8%, n=46). The most common malignant tumors were squamous cell carcinoma (n=15), acinic cell carcinoma (n=9), and mucoepidermoid carcinoma (n=6). Twenty patients (45.5%) received postoperative radiation therapy. Complications included: surgical site necrosis (13%), hematoma (4.3%), and infection (2.2%). Overall incidence of malignant recurrence was 4.4% with a mean time of follow-up of 10.3 (range 0 - 77.3) months. Incidence of malignant recurrence in the fat graft reconstruction subset was 0% with a mean follow-up of 9.8 (range 0.2 - 49.3) months. There was no association with use of fat graft and recurrence ($p>0.05$).

Conclusion

Parotidectomy defects for malignant neoplasms can be reconstructed with fat graft transfers with no impact on surveillance for disease recurrence.

Introduction

- Parotidectomy can result in a visible postoperative deformity, causing patient dissatisfaction and cosmetic morbidity¹
- Several options exist for reconstruction, such as a superficial musculocutaneous system (SMAS) flap, free tissue transfer, and dermal matrix materials²
- Fat is comparable to parotid tissue in consistency, causing it to be a suitable replacement graft
- Objective of this study is to examine the safety of fat graft for parotidectomy defect reconstruction in the malignant setting

Methods

- Retrospective cohort study of patients receiving parotidectomy between August 2012 and June 2020 at a single academic institution
- Charts were reviewed for demographic, surgical, pathologic, and post-operative course
- Patients were tracked for follow-up with special attention for recurrence
- Categorical variables were compared utilizing a Fisher Exact Test

Results

- Of 361 patients who underwent parotidectomy, 113 (31.3%) had malignant pathology
- Average follow-up for malignant disease: 10.3 months (range: 0 - 77.3 months)
 - Average follow-up within fat graft subset: 9.76 months (range: 0.2 - 49.3 months)
- Overall recurrence rate: 4.4% (n=5)
 - Recurrence rate within fat graft subset: 0%
- No association between use of fat graft and rate of recurrent disease ($p>0.05$)

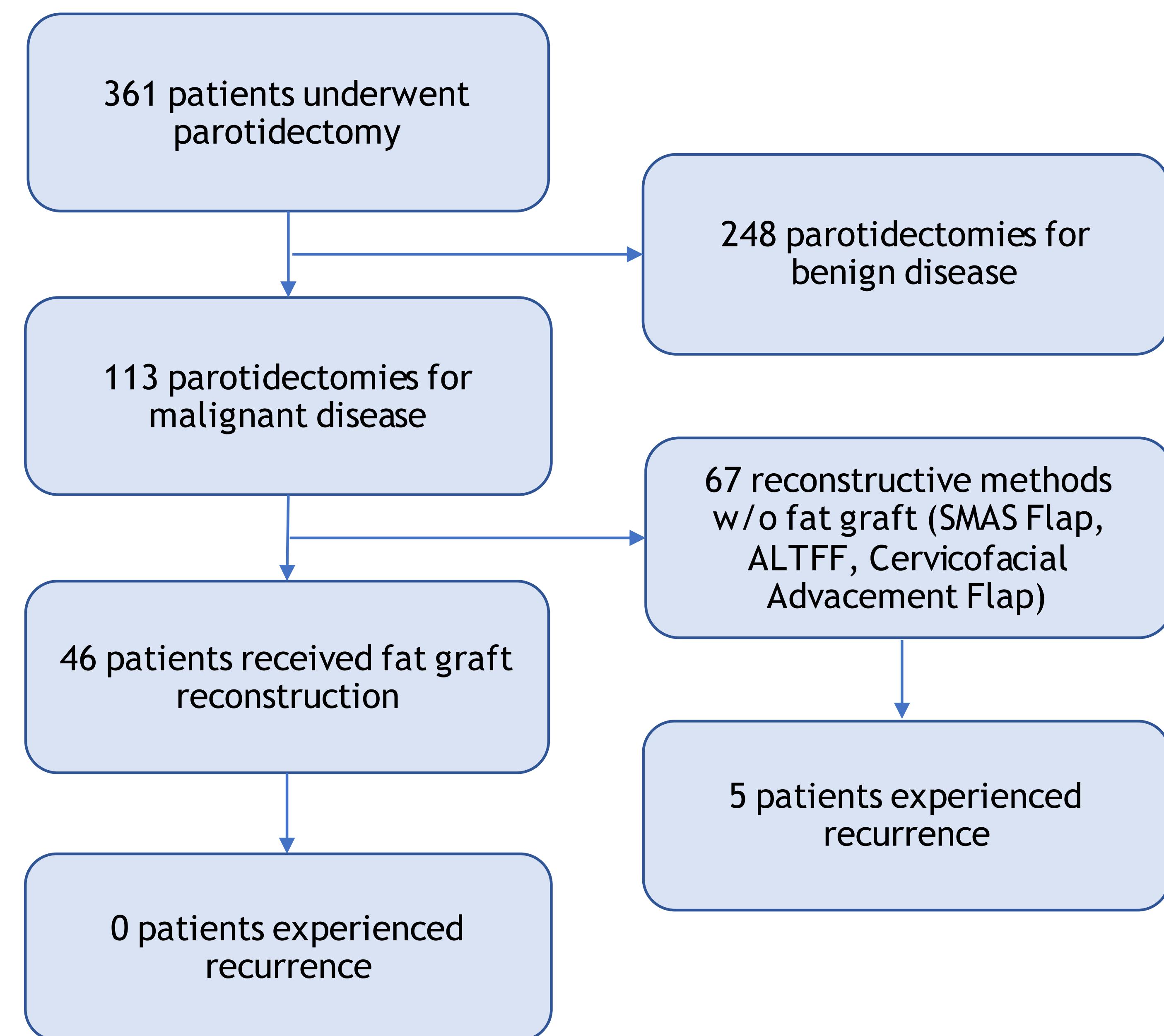


Figure 1: Flow Chart of Patient Population

Characteristic	# of Patients (%)
Female Gender	25 (54.3)
Mean Age (years)	60.9 (range: 15.4-82.4)
Tumor Type	
Squamous Cell Carcinoma	15 (32.6)
Acinic Cell Carcinoma	9 (19.6)
Mucoepidermoid Carcinoma	6 (13.0)
Other (Melanoma, Lymphoma, etc)	16 (34.8)
Concurrent Neck Dissection	24 (52.2)
Facial Nerve Sacrifice and Reconstruction	9 (19.6)
Facial Nerve Weakness	13 (28.3)
Surgical Site Necrosis	6 (13.0)
Hematoma	2 (4.3)
Post-operative Infection	1 (2.2)
First Bite Syndrome	1 (2.2)
Post-operative Radiation	20 (45.5)
Post-operative Chemotherapy	5 (11.4)

Table 1: Characteristics of Malignant Parotidectomy Procedures Reconstructed with Fat Graft

Discussion

- Previous studies have reported that fat reconstruction of parotidectomy defects accomplishes a consistent long-standing aesthetic outcome³
- Our results suggest that use of fat graft in the setting of malignant parotid disease does not impact the surveillance for recurrence
- The most common complication in our patient cohort was surgical site necrosis
- Short-term results are encouraging but long-term surveillance may be necessary

Conclusion

- Parotidectomy defects for malignant disease can be safely and effectively reconstructed with fat transfers, with no negative impact on surveillance for disease recurrence

References

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