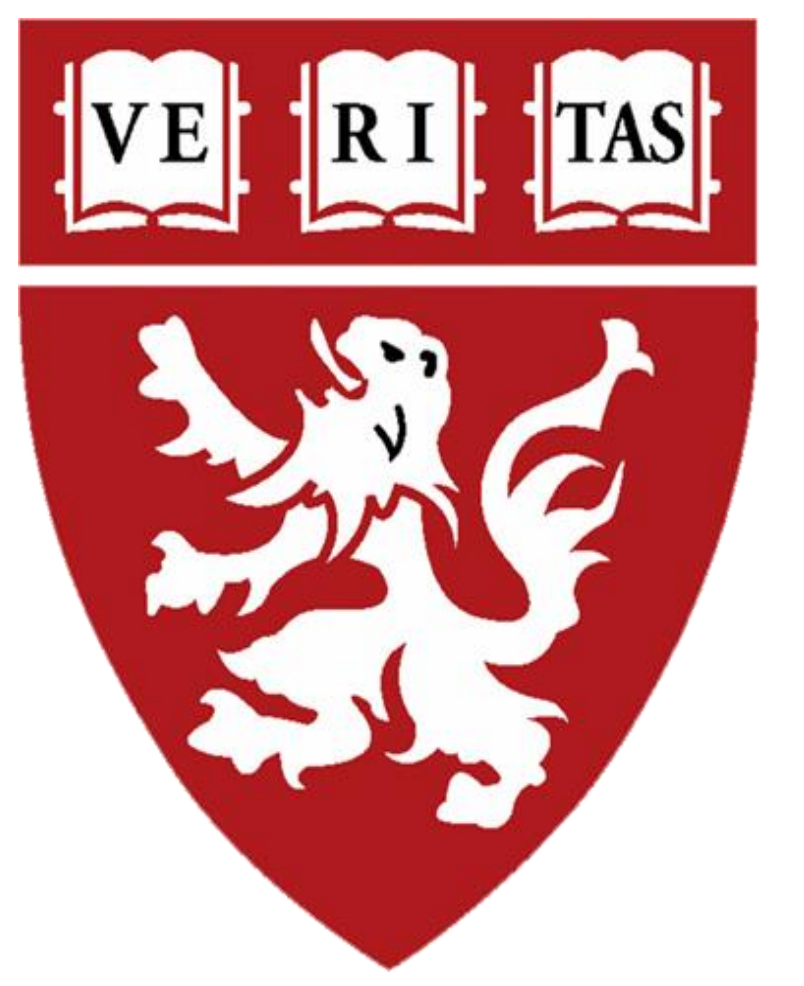


Outcomes in Malignancies of the Parotid Gland: A 10-Year Single Center Experience



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ABSTRACT

Educational Objective: At the conclusion of this presentation, the participants should be able to demonstrate an understanding of treatment outcomes and prognostic factors in malignancies of the parotid gland.

Objectives: To describe a 10-year single center experience with malignancies of the parotid gland and to determine clinical and pathological factors affecting survival.

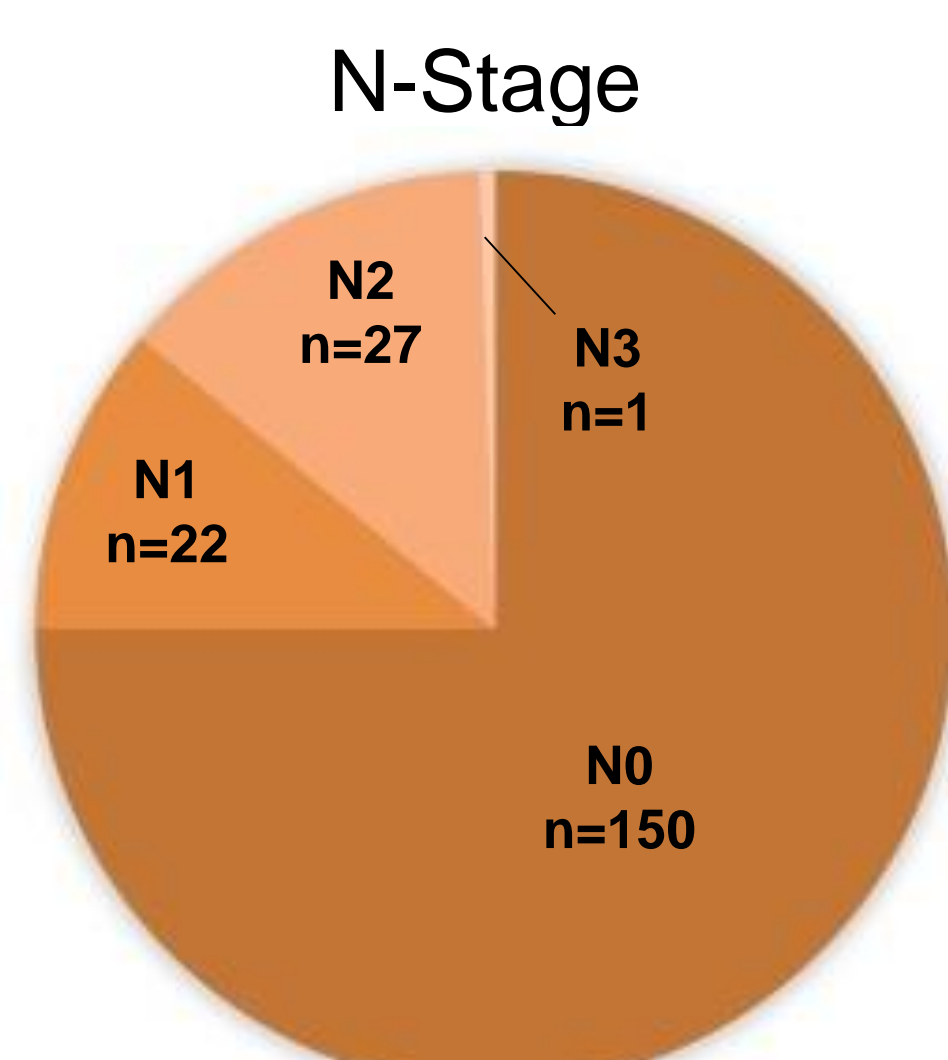
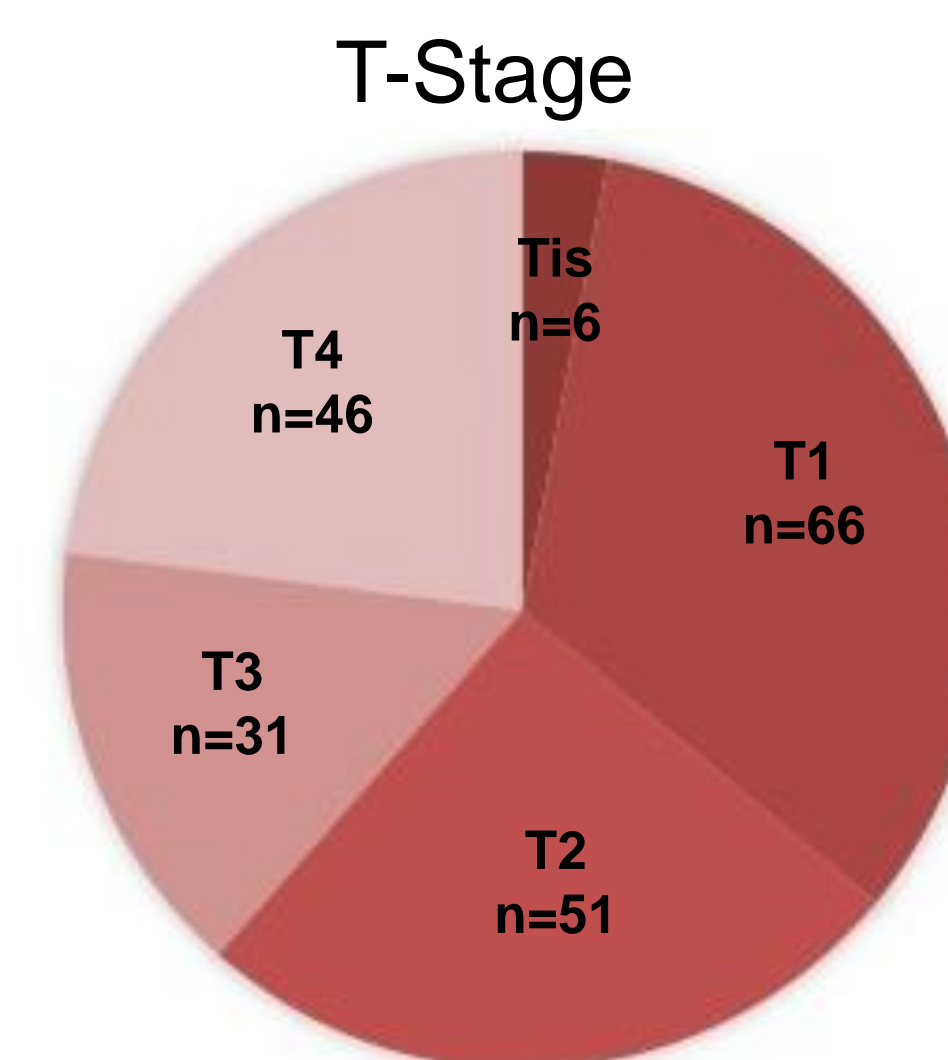
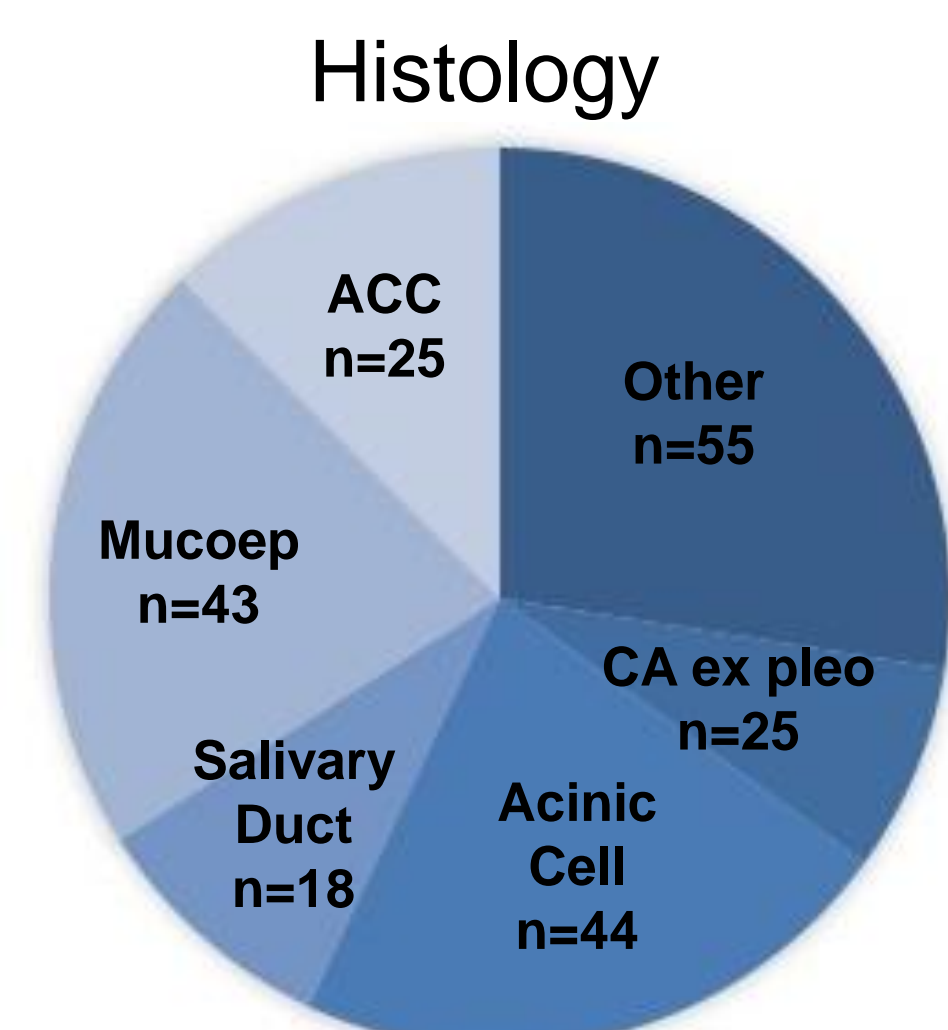
Methods: The institutional cancer registry was used to identify patients treated surgically for malignancies of the parotid gland between January 2005 and December 2014. Clinical and pathologic data were collected retrospectively from patient charts and analyzed for their association with overall (OS) and disease free survival (DFS).

Results: 200 patients were identified. Mean age at surgery was 57.8 years, and mean follow up time was 52 months. 102 patients underwent total parotidectomy, while 77 underwent superficial parotidectomy, and 21 underwent deep lobe resection. 70 patients (35%) required facial nerve sacrifice. Acinic cell carcinoma was the most common histologic type (22%), followed by mucoepidermoid carcinoma (21.5%) and adenoid cystic carcinoma (12.5%). 29 patients (14.5%) experienced recurrences, with mean time to recurrence of 23.6 months (range 0.1-6.8 years). 5- and 10-year OS were 81% and 73%, respectively. 5- and 10-year DFS were 80% and 73%, respectively. In the univariate analysis, age > 60, histologic type, parotidectomy type, T-stage, N-stage, histologic grade, margin status, perineural invasion, and facial nerve (FN) involvement were all associated with OS and DFS. In the multivariate analysis, age > 60, margin status, histology, and FN involvement were independent predictors of OS and DFS, while N-stage was significantly associated with only OS.

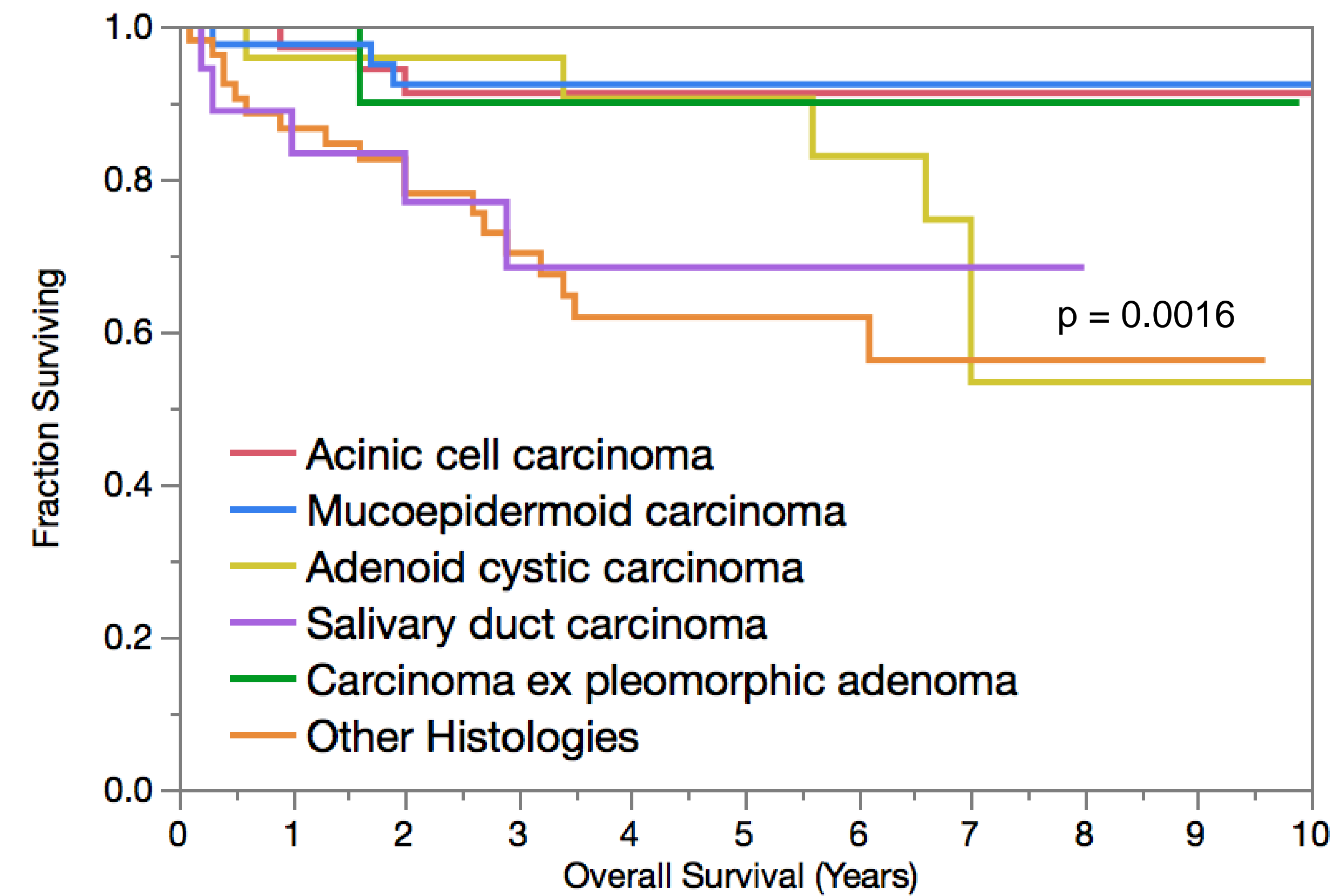
Conclusions: Our single-center experience of 200 patients suggests that age > 60, histology, and FN involvement are independently associated with outcomes in parotid malignancies.

RESULTS

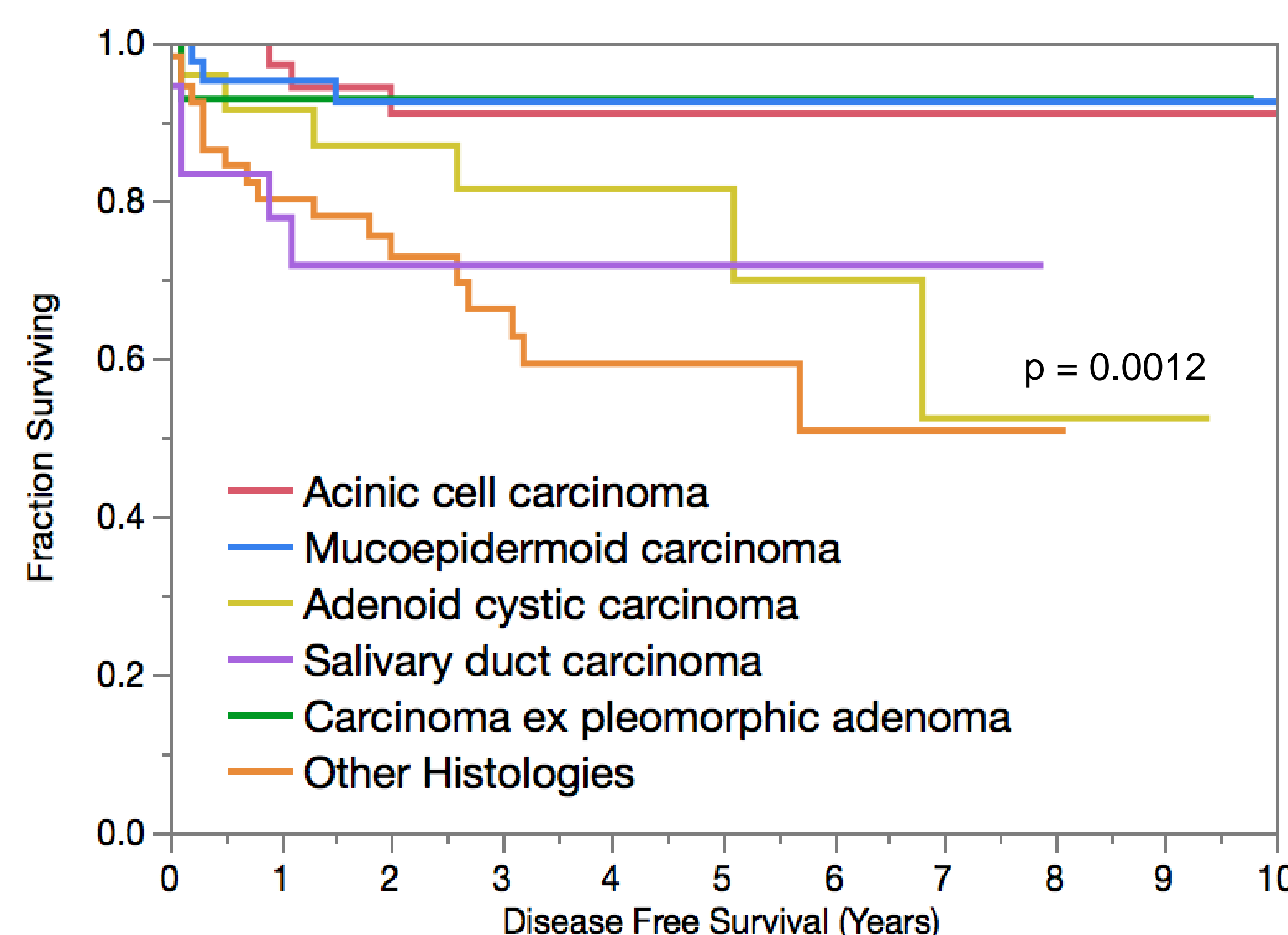
- 200 patients (104 M, 96 F)
- Mean age 57.8y (range 10-96)
- Mean follow-up 4y (range 0-11.3)
- 18% deceased (n=36)



OVERALL SURVIVAL BY HISTOLOGY



DISEASE FREE SURVIVAL BY HISTOLOGY



UNIVARIATE MODEL

Predictor	RR (OS)	RR (DFS)	P-value
Age > 60	4.1	4.3	< 0.0001
Histology "other"	3.2	3.2	< 0.001
Total parotidectomy	3.8	3.5	< 0.001
Margin status	2.8	3.0	< 0.005
Grade (Mucoep)	> 100	> 100	0.01
Grade (All Others)	> 100	> 100	0.01
T Stage (1/2 vs. 3/4)	4.5	4.7	< 0.0001
N Stage (N0 vs N+)	3.8	3.7	< 0.0005
PNI	3.8	3.9	< 0.0001
FN Involvement	4.7	4.9	< 0.0001
LVI	1.5	1.3	NS

MULTIVARIATE MODEL

Predictor	RR (OS)	RR (DFS)	P-value
Age > 60	2.6	2.8	0.02
Histology "other"	3.9	4.0	< 0.001
Total parotidectomy	2.2	1.7	NS
Margin status	2.6	3.0	0.01
T Stage (1/2 vs. 3/4)	1.4	1.6	NS
N Stage (N0 vs N+)	2.2	1.9	0.03
PNI	< 0.01	< 0.01	NS
FN Involvement	> 100	> 100	0.002

- Predictors with significant associations in univariate model tested in multivariate model
- Grade and not tested due to incomplete data

DISCUSSION

- OS at 5 and 10 years was 81% and 73%, while DFS at 5 and 10 years was 80% and 73%, consistent with survival rates reported in the literature.
- Of the five most common histologies, salivary duct carcinoma had the poorest 5-year OS and DFS, while adenoid cystic carcinoma (ACC) had a comparably low 10-year OS and DFS.
- There were 29 patients (14.5%) who recurred, with a mean time to recurrence of 2.0 years. Time to recurrence was significantly higher for ACC (3.92y vs. 1.29y, p=0.002), consistent with the late decline in OS and DFS relative to other histologic types. This finding highlights the need for continued surveillance beyond 5 years in patients with ACC.
- Distant recurrence (18/29 cases) was more common than locoregional recurrence (12/29 cases), with the most common site being the lung (14/18 cases).
- In the univariate model, there were a number of measures associated with OS and DFS, but in the multivariate model only age > 60, margin status, facial nerve involvement, and histology "other" (less common histologies) were associated with OS and DFS. N-stage was associated with OS but not DFS. These findings are consistent with prior literature.
- Grade was incompletely reported. All cases of salivary duct carcinoma were high grade. In mucoepidermoid carcinoma and "other" histologies, grade was associated with OS and DFS. This finding underscores the need for consistent reporting of pathologic grade in parotid gland malignancies.

CONCLUSIONS

- We report on 200 consecutive patients who underwent surgical management of parotid gland malignancies at MEEI from 2005-2014.
- The most common histologies were acinic cell, mucoepidermoid, adenoid cystic, salivary duct, and carcinoma ex pleomorphic adenoma.
- We demonstrate that age > 60, histology, margin status, and facial nerve involvement are independent predictors of both OS and DFS, and N-stage may be a predictor of OS.

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INTRODUCTION & METHODS

- Malignancies of the parotid gland are rare, accounting for less than 2% of all head and neck malignancies
- Studies have reported on a number of clinical and pathologic predictors of survival outcomes, but cohorts are heterogeneous, often grouping different histologies and different subsites
- Institutional Cancer Registry used to identify all patients treated surgically for parotid gland malignancies at MEEI from 2005-2014
- Age, parotidectomy type, T-stage, N-stage, overall stage, grade, and margin status simplified to binary values for survival analysis
- Overall survival (OS) measured by last documented communication with patient
- Disease free survival (DFS) measured by last documented note from oncologic provider (surgeon, medical or radiation oncologist)
- Kaplan-Meier survival curves generated for histologic types, and Cox proportional hazards model used to measure risk ratio of predictors of OS and DFS
- For survival analyses, all patients assumed to be censored unless documented as deceased
- Statistical analyses conducted using Microsoft Excel and JMP-Pro