

Primary Hurthle cell thyroid carcinoma treated with surgery: A single institution experience of 92 patients

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Introduction

Oncocytic carcinoma of the thyroid (OCA), previously known as Hurthle cell thyroid carcinoma (HCTC), accounts for 3-5% of all thyroid cancers. Surgery is considered the primary treatment and is often followed by radioactive iodine (RAI). OCA is less likely to absorb RAI compared to other differentiated thyroid cancers. OCA often has a more aggressive course and poorer prognosis compared to other differentiated thyroid cancers. Given the rarity of OCA, there are relatively few series which describe the disease presentation, diagnosis methods, treatment, and follow up. Herein we report 92 patients with OCA treated with primary surgery at MD Anderson Cancer Center in order to characterize patterns of disease recurrence and survival.

Methods

Retrospectively, we reviewed all patients with the diagnosis of Hurthle cell/ oncocytic carcinoma of the thyroid from January 1996- June 2023 using the following criteria:

Included

- Patients with a new diagnosis of HCTC/OCA that underwent primary thyroid surgery at MD Anderson Cancer Center

Excluded

- Patients with previous thyroid surgery treatment at an outside facility
- Patients who presented as a recurrence

A chart review was performed and collected data including demographics, pathology, therapeutic intervention, and recurrence and survival outcomes. Survival was analyzed using the Kaplan Meir method.

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Results

92 patients met criteria for inclusion. The average age of diagnosis was 58 years old. Table 1 includes a summary of demographic information and treatments received. 9 patients (10%) had recurrence. The type of recurrence is detailed in Figure 1. The overall survival at 10 years is approximately 70%.

Table 1: Demographics, diagnosis, treatment, and disease for patients with primary OCA

Variable	#	%
Gender		
Female	58	63
Male	36	39
Age		
20-29	4	4
20-39	5	5
40-49	15	16
50-59	22	24
60-69	24	26
70+	22	24
Race		
White	77	84
Black	6	7
Asian	1	1
Hispanic/Latino	8	9

Variable	#	%
FNA results (Bethesda categories)		
I: Nondiagnostic	1	1
II: Benign	2	2
III: AUS/FLUS	33	36
IV: Follicular Neoplasm	38	41
V: Suspicious for malignancy	3	3
VI: Malignant	11	12
FNA not done	4	4
Surgery		
Total thyroidectomy/Completion	65	71
Lobectomy	27	29
Neck dissection	26	28
Other therapy		
Radioactive iodine (RAI)	38	41
Chemotherapy	3	3
Radiation to neck	8	8
Targeted therapy	4	4
Regional structures invaded		
Larynx	2	2
Trachea	6	6
Esophagus	3	3
Recurrent laryngeal nerve	6	7
Skeletal Muscle	10	11
Lymph node metastasis	11	12
Central neck	1	1
Lateral neck	5	5
Both lateral and central	3	3
Not stated in pathology report	2	2
Patients with primary distant metastasis (DM)	11	12
Site of DM		
Lung	9	8
Liver	1	1
Bone	7	8
Brain	1	1
Other	4	4

Figure 1: Type of Recurrence

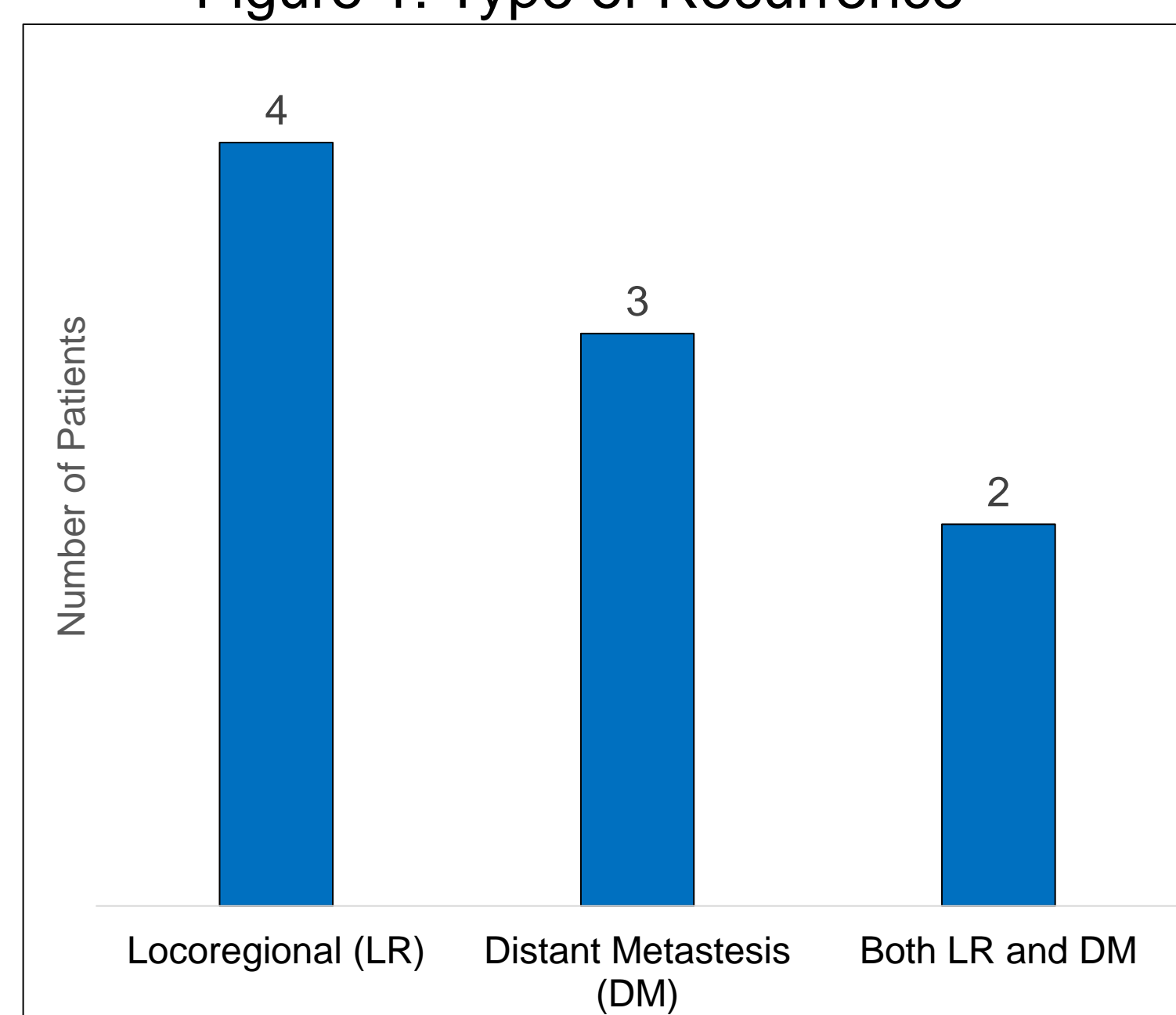


Figure 1: Type of OCA recurrence by location. Locoregional includes metastasis to either central or lateral neck. Distant metastasis includes bones, lung, brain, and other.

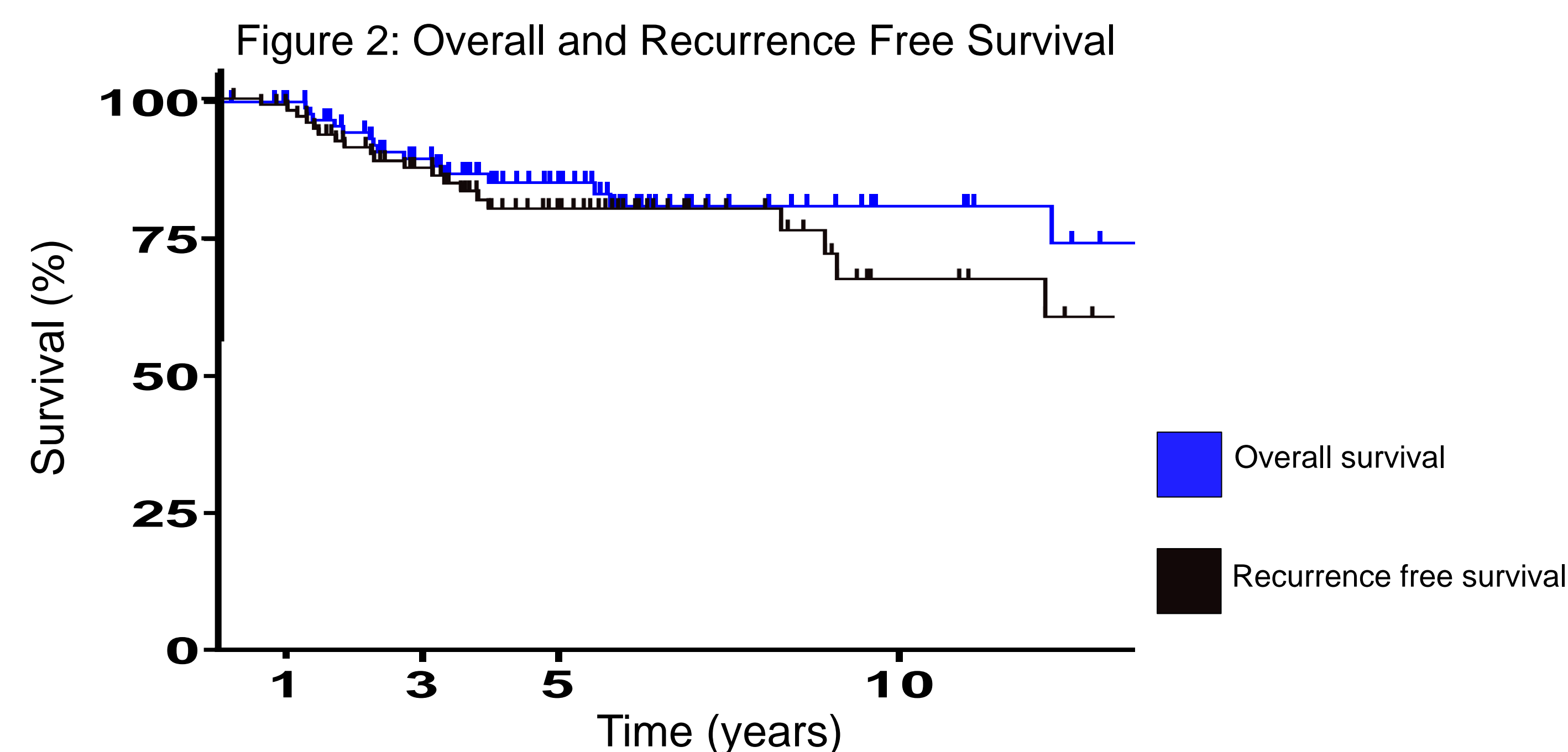


Figure 2: Recurrence free survival curve. Recurrence free survival is defined as the time from diagnosis until first recurrence or death from any causes, whichever occurs first. The median recurrence free survival estimate is 158.7 months (95% CI, 134.3-183.1 months). Figure 2: Overall survival curve. The median overall survival estimate is 181.8 months (95% CI, 158.9-204.8 months)

Discussion

Since OCA is a relatively rare tumor, the research lacks publications that analyze and describe a high volume of cases at a single institution. Petric et al. and Oluic et al. both have large single institution reviews done in 2014 and 2017, respectively.

Most patients undergo total thyroidectomy, while a minority undergo central or lateral neck dissections. A minority of patients present with advanced disease requiring advanced surgery, including laryngectomy, tracheal resection, recurrent laryngeal nerve resection, and/or esophagectomy. Most patients do not undergo RAI, given the relative lack of sensitivity of OCA to RAI therapy. Targeted therapy and/or RAI (if RAI sensitive disease) is recommended for patients with progressive distant metastases.

Often OCA is not confirmed by FNA prior to surgery, as in this study, wherein only 15% of patients had suspicion for malignancy/malignant diagnoses prior to surgery. The survival and recurrence prevention benefits of RAI should also continue to be evaluated.

Limitations to the study include the retrospective design, including patients lost to follow up and unknown causes of death.

Conclusion

In one of the largest single institution experiences describing surgical treatment and outcomes of primary Hurthle cell / oncocytic thyroid carcinoma patients, locoregional recurrences are rare (<7%), while a significant number of patients either present with distant metastases, ultimately develop them, or have recurrence with distant metastases (17%). Nevertheless, 10-year overall survival for newly diagnosed OCA patients undergoing surgery is approximately 70%.

References

- 1) Oluic et al. BCM Cancer 2017;17:371
- 2) Petric et al. BCM Cancer 2014;14:777