Conclusion: 27% of papillary thyroid carcinomas treated at Seattle Children's over the last 10 years fit the definition of diffuse sclerosing, a much higher percent than reported in previous series. Diagnosis is based upon diffuse thyroid involvement with extensive microcalcifications. The disease is more aggressive than routine papillary cancer.

Introduction: Diffuse sclerosing (DS) papillary cancer is increasingly recognized in the pediatric population.

Goals: To review all papillary carcinoma cases over a 10 year period and describe clinical differences with diffuse sclerosing variant.

Results: 17 of 63 (27%) total papillary carcinoma cases from 2008 to 2018 met the criteria for DS. All DS cases had positive regional nodes vs 50% for non DS with average number postive nodes 17.6 (4-41). Pulmonary metastasis was present in 61% of DS and laryngeal framework invasion in 66% with recurrent nerve invasion in 53%. Lymphocytic thyroiditis was seen histologically in 80% of DS cases. All patients received adjuvant I 131 therapy but the incidence of radio-resistance was high. Three DS patients are receiving tyrosine kinase blocker therapy for progressive pulmonary metastasis.

Discussion: Diffuse sclerosing papillary carcinoma usually arises in the background of lymphocytic thyroiditis and the incidence appears to be increasing as with other Th2 mediated disease. DS cases are more aggressive with higher rates of regional and distant metastasis, local invasion and I 131 radio-resistance. Long term prognosis may not be as favorable as with non DS papillary carcinoma.

We hope to look at molecular profiling to better predict I 131 radioresistance, long term prognosis, and potential need for pathway blocker adjuvant therapy in pediatric patients with DS variant papillary carcinoma.