Thyroid Cancer In Children: A Multicenter International Study Highlighting Clinical Features And Surgical Outcomes Of Primary And Secondary Tumors

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Abstract

Background: Thyroid gland malignancy is rare in pediatrics (0.7% of tumors); only 1.8% are observed in patients < 20 yrs with a higher prevalence recorded in females and adolescents. Risk factors include genetic syndromes - MEN disorders, autoimmune disease and ionizing radiation exposure. Radiotherapy is also linked with increased risk of secondary thyroid cancers. The present study describes the clinical features and surgical outcomes of primary and secondary thyroid tumors. Methods: Institutional data was collected on pediatric patients with thyroid cancer during 2000 - 2020 from 8 International Surgical Oncology centers. Statistical analysis was performed using GraphPad Prism. Results: Of 255 cases of thyroid cancer, only 13 (5.1%) were secondary tumors. Primary thyroid malignancies were more likely to be multifocal in origin (odds ratio [OR] 1.993, 95% confidence interval [CI] 0.7466-5.132, p 0.2323), had bilateral glandular location (OR 2.847, 95% CI 0.6835-12.68, p 0.2648) and proved metastatic at 1st diagnosis (OR 1.259, 95% CI 0.3267-5.696 p>0.999). Secondary tumors showed a higher incidence of disease relapse (OR 1.556, 95% CI 0.4579-5.57, p 0.4525) and surgical morbidity (OR 2.042, 95% CI 0.7917-5.221, p 0.1614) including hypoparathyroidism and recurrent laryngeal nerve injury. Overall survival (OS) was 99% at 1 year and 97% after 10 years. No EFS differences were evident with primary vs. secondary tumors (Chi square 0.7307, p 0.39026). Conclusions: This multicenter study demonstrates excellent survival for pediatric thyroid malignancy. Secondary tumors exhibit greater disease relapse (15.8% vs 10.5%) and a higher incidence of surgical related complications (36.8% vs 22.2%).

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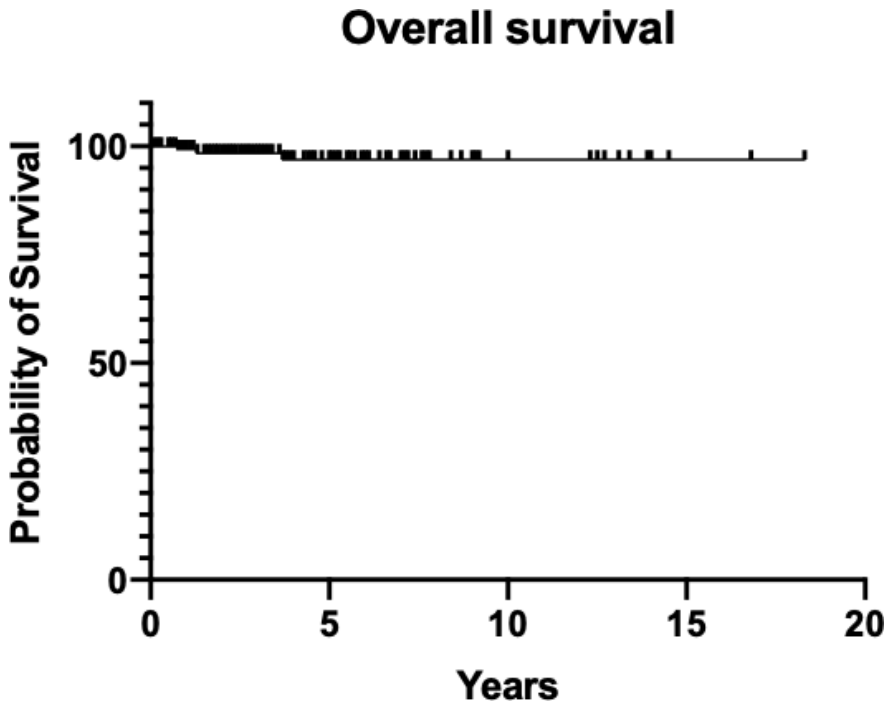

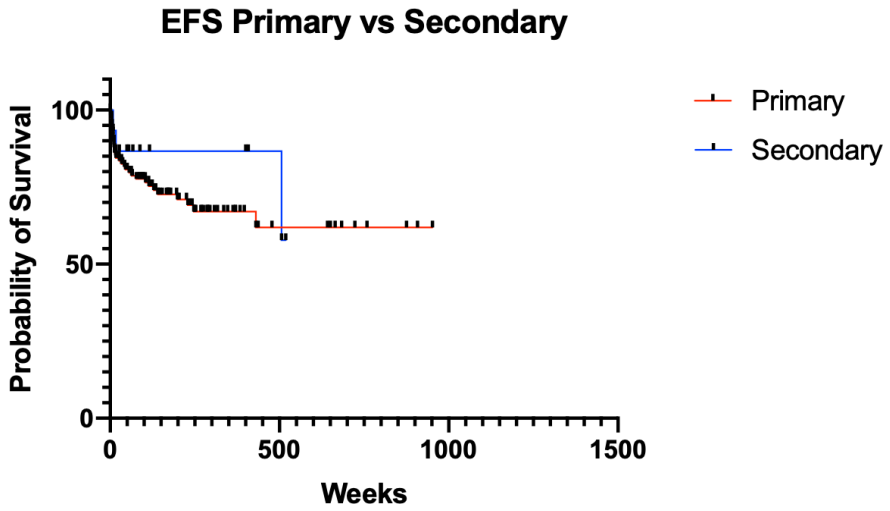

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