Paediatric graves' disease complicated by papillary thyroid carcinoma: A Malaysian experience

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ABSTRACT

Introduction: Graves' disease (GD) is an uncommon condition in the paediatric population, with an incidence of 0.1 to 3 cases per 100,000. The coexistence of GD and papillary thyroid carcinoma (PTC) is even rarer, with a reported incidence of approximately 5% in recent literature. However till date, no local Malaysian data are available. We present a case highlighting the clinical features, management, and outcomes of paediatric GD complicated by PTC, supported by a literature review. Case Presentation A 12-year-old female with a history of GD diagnosed at four years of age was noted to have a left-sided thyroid nodule. Ultrasonography demonstrated features suspicious for malignancy, including ill-defined margins and punctate microcalcifications. Fine needle aspiration cytology was consistent with a diagnosis suspicious for PTC. Computed tomography imaging confirmed no evidence of extrathyroidal extension or local invasion. The patient underwent total thyroidectomy with central compartment lymph node dissection. Histopathological examination revealed a minimally invasive variant of PTC without lymph node metastasis. Postoperatively, the patient is recovering well, undergoing thyroid-stimulating hormone (TSH) suppression therapy, and is scheduled for radioactive iodine (RAI) therapy. **Materials and Methods:** A retrospective literature review was conducted using the Cochrane database to evaluate paediatric cases of GD associated with PTC from 2015 to 2025. **Results:** The incidence of PTC in paediatric GD was identified as 10.4%, decreasing to 5.5% in patients without thyroid nodules. The classical variant of PTC was the most prevalent subtype (60%). Central lymph node metastasis was observed in 52.4% of cases, supporting the recommendation for upfront central compartment dissection. Postoperative RAI was administered in 61% of patients, with a reported complication rate of 10%. **Conclusion:** Although rare, the potential for PTC in paediatric GD necessitates vigilant evaluation. In experienced hands, favourable outcomes and minimal complication rates are archivable.

Keywords: Paediatric graves' disease, papillary thyroid carcinoma, RAI, Malaysia, surgery