Prevalence of Dual Thyroid Ectopy

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Abstract

**Educational Objective:** At the conclusion of this presentation, the participants should be able to appreciate the prevalence of dual thyroid ectopy and the importance of assessment for multiple foci of ectopic thyroid tissue.

**Objective:** To report dual thyroid ectopy as a frequent occurrence in patients presenting with an ectopic thyroid.

**Study Design:** Retrospective case series

**Methods:** Surgical records from 1994-2012 at three tertiary academic referral centers were searched to identify patients undergoing or scheduled for ectopic thyroid excision. Medical records and radiographic studies were reviewed by two independent reviewers.

**Results:** During the study period 10 patients were identified for surgical excision of ectopic thyroids. Dual foci of ectopic thyroid tissue occurred in 40% of patients. Demographic analysis revealed all patients with dual ectopy were female and with an average age of 37 years (range 28-52). Ectopic tissue was located at the base of the tongue and anterior to the hyoid in all cases. No patients had an orthopthic gland. Dual thyroid ectopy was found in 2 patients at the time of diagnosis and 2 had a history of thyroglossal duct excision representing a second focus of thyroid dysgenesis.

**Conclusions:** A higher prevalence of dual thyroid ectopy was identified in our patient population than previously described in the literature. This highlights the importance of a thorough investigation for additional foci when evaluating a patient with an ectopic thyroid.

Introduction

Ectopic thyroids are rare developmental abnormalities due to abnormal descent of the thyroid from its origins at the base of the tongue. The estimated prevalence of thyroid ectopy is 1:100,000 - 300,000.1 This likely underestimates the true incidence as post-mortem studies have identified abnormally located thyroid tissue in 7 - 10% of adults.2,3 For the majority of patients (70%) this ectopic tissue is the only thyroid tissue present.4

Ectopic tissue is most commonly located along the path of normal thyroid developmental descent including lingual (90%) and midline cervical locations (9-10%).5 On rare occurrences dual foci of ectopic thyroid tissue have been reported. We present an 18 year experience with ectopic thyroids and the prevalence of dual ectopy.

Methods

A retrospective chart review of patients undergoing surgical treatment for thyroid ectopy was conducted at three tertiary academic referral centers for the years 1994 – 2012. Electronic surgical records were searched for terms including: lingual thyroid, thyroid lingual, ectopic thyroid, thyroid ectopic, thyroid base of tongue, base of tongue thyroid, thyroid and transoral, thyroid and laryngoscopy. Medical records and radiographic studies were reviewed by two independent reviewers. This study was IRB approved.

Results

- 10 patients treated surgically for ectopic thyroid
- Dual thyroid ectopy identified in 4 patients (40%) (Figures 1-3)
- Average age 37 yrs (range 11 - 59 with bimodal distribution)
- 9:1 female to male ratio.
- In all dual foci thyroid tissue identified at the base of the tongue and anterior to the hyoid bone.
- Dual thyroid ectopy was found in 2 patients at the time of diagnosis and 2 had a previously undergone excision of midline cervical thyroid tissue.
- No patients had orthopthic thyroid tissue.
- Hypothyroidism present in 7 patients (70%)

Discussion

The study population demographics are consistent with prior literature reports including a bimodal age distribution and female predominance. Although the patient sample size is small, it is in line with prior reports of expected ectopic thyroid incidence at the Mayo Clinic.1

The majority of reports in the literature suggest that dual thyroid ectopy is a rare event estimated to occur in ~9% patients with ectopic thyroid tissue.6 In comparison, we found dual foci of ectopic thyroid tissue in 40% of patients. Jain et al7 similarly published their findings of multifocal thyroid ectopy occurring in 5 out of 8 patients (62.5%) with ectopic glands.

One possible contribution to the detected high prevalence of dual thyroid ectopy is the increased use of comprehensive imaging. Historically, patients with ectopic thyroid tissue have not undergone extensive radiographic workup and small occult ectopic foci may have been overlooked. This is especially true in the pediatric population where concerns of radiation exposure exist. In our case series, a CT or MRI was obtained preoperatively on all patients allowing for identification of asymptomatic ectopic foci. Likewise, all patients in Jain et al’s study underwent Tc-99m Pertechnetate thyroid scans. Based upon these results, comprehensive imaging has improved detection of dual thyroid ectopy and suggests that dual foci of ectopic thyroid tissue may occur at a higher prevalence than previously reported.

Conclusions

- Dual ectopic thyroid tissue may occur in as many as 40 – 60% of patients with thyroid ectopy.
- The improved detection of dual thyroid ectopy in recent reports may be secondary to increased use of comprehensive imaging.
- Thorough evaluation of patients with ectopic thyroid tissue may identify additional occult foci.

References


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