
Surgeon-Driven Thyroid Interrogation of Patients Presenting with Primary Hyperparathyroidism

David A Sloan, MD, FACS, Daniel L Davenport, PhD, Roberta J Eldridge, Cortney Y Lee, MD, FACS

BACKGROUND: Primary hyperparathyroidism (pHPT) is an increasingly prevalent disease affecting all age groups. The authors sought to determine the impact of a “thyroid interrogation” practice protocol on the surgical treatment of patients with the diagnosis of pHPT referred to a single surgeon.

STUDY DESIGN: We performed a retrospective review of prospectively gathered data on parathyroidectomy (PTX) patients undergoing both a prospective clinical thyroid evaluation and thyroid ultrasound between January 2008 and October 2012.

RESULTS: Only 5.6% of 468 PTX patients were referred to a single surgeon for both parathyroid and thyroid surgical evaluation; 31% of patients had known pre-existing thyroid disease (hypothyroidism most commonly), and 22% of patients had palpable thyroid abnormalities unrecognized in 67% of cases by the referring physician. Of the 468 patients, 2.6% had a history of classic head and neck radiation exposure, 2.6% a history of radio-iodine treatment, and 3% a family history of thyroid cancer. Thyroid abnormalities were found on ultrasound in 61% of patients, and 26% of patients underwent thyroid biopsies. Parathyroid and thyroid surgery was combined for 18.4% of patients; indications included obstructive symptoms (3.2%), hyperthyroidism (0.9%), intraoperative findings (5.1%), and concern for malignancy (9.2%). Malignancy was diagnosed in 23 patients (4.9%), only 8 of whom had been referred for thyroid evaluation.

CONCLUSIONS: The majority of patients referred for PTX had evidence of thyroid pathology. For an important minority of these patients, benign and malignant disease was identified that merited surgical treatment at the time of PTX. We recommend comprehensive thyroid evaluation of patients referred for PTX. (J Am Coll Surg 2014;218:674–685. © 2014 by the American College of Surgeons)

Primary hyperparathyroidism (pHPT), with an incidence of 1 in 1,000, is an increasingly prevalent disease affecting all age groups.¹ Numerous authors have drawn attention to the association between pHPT and both benign and malignant thyroid disease.^{2–28} The percentage of parathyroidectomy (PTX) patients with pHPT who have associated thyroid abnormalities ranges in the literature from 16% to 84% (Table 1).^{2–28} In 1956, Ogburn and Black at the Mayo Clinic² reported 4 cases of papillary thyroid cancer in a population of 230 patients with pHPT seen

since 1928. A number of authors in the decades since that 1956 paper have reported the incidence of thyroid cancer in PTX patients to be anywhere from 2% to 20% (Table 1). The association between parathyroid and thyroid disease has therefore led to some version of thyroidectomy (from nodulectomy to total thyroidectomy) being performed at the same time as PTX (Table 1), but again there is remarkable variation in the literature when one looks at the percentage of concomitant thyroidectomy in patients undergoing parathyroid surgery. Surgeons have reported the incidence of combined thyroid and parathyroid procedures anywhere from 4% to an astonishing 88% of PTX cases.^{2–28}

With the trend toward some variation of minimally invasive parathyroidectomy (MIP) over the last 2 decades, where exposure of the thyroid gland is limited and often not palpable because of very small incisions, a number of authors have emphasized that preoperative ultrasound of the thyroid should be an essential part of the workup of patients with pHPT.^{8,14,15,19,22,25} Ultrasound, which has

Disclosure Information: Nothing to disclose.

Presented at the Southern Surgical Association 125th Annual Meeting, Hot Springs, VA, December 2013.

Received December 13, 2013; Accepted December 13, 2013.

From the Department of Surgery, University of Kentucky College of Medicine, Lexington, KY.

Correspondence address: David A Sloan, MD, FACS, University of Kentucky College of Medicine, Division of General Surgery, Section of Endocrine Surgery, UK Good Samaritan Hospital, 125 East Maxwell St, Suite 302, Lexington, KY 40508. email: dasloa0@uky.edu

Abbreviations and Acronyms

ATA	= American Thyroid Association
DTC	= differentiated thyroid cancer
FNA	= fine needle aspiration
ioPTH	= intraoperative parathyroid hormone
MIP	= minimally invasive parathyroidectomy
pHPT	= primary hyperparathyroidism
PTC	= papillary thyroid cancer
PTX	= parathyroidectomy
UK	= University of Kentucky

been an important imaging modality for the localization of parathyroid adenomas for many years, provides the physician with a much more precise evaluation of the thyroid than does thyroid palpation alone. A recent prospective study of preoperative ultrasound in patients with pHPT showed that two-thirds of patients had thyroid nodules.²² If we adhere to current American Thyroid Association (ATA) guidelines,²⁹ then many of these nodules will meet criteria for fine needle aspiration (FNA) biopsy before MIP is scheduled. In a recent study at the MD Anderson Center,¹⁹ 23.9% of all patients with pHPT had at least 1 nodule biopsied preoperatively, with thyroid nodules being found in 84% of all patients in that particular study. Because thyroid nodules are so common in the adult population, with 1 study showing a majority of adults to have some kind of thyroid abnormality on screening ultrasound,³⁰ a certain amount of controversy has arisen as to how aggressive one should be in addressing the thyroid before proceeding with parathyroid surgery. Indeed, one might ask, should the thyroid be “interrogated” or should it be ignored? The authors sought to evaluate the results of a practice protocol in place for a comprehensive, standardized preoperative evaluation of patients referred to a single surgeon with the diagnosis of pHPT.

METHODS

An Institutional Review Board (IRB)-approved retrospective review of prospectively gathered data on PTX patients between January 2008 and October 2012 was carried out to determine the impact of a thyroid interrogation practice protocol on the surgical treatment of patients with pHPT. Excluded from the study were patients with secondary and tertiary hyperparathyroidism, patients with known multiple endocrine neoplasia syndromes, patients undergoing reoperative PTX, patients in whom neck ultrasound was not performed preoperatively, and patients referred for thyroid disease alone in whom pHPT was diagnosed either preoperatively or at the time of thyroidectomy by the operating surgeon.

All patients were evaluated in the Endocrine Surgery Clinic by the operating surgeon (DAS). Records of the referring provider were carefully reviewed to determine the reason for referral, whether solely for evaluation for PTX or referral for both thyroid and parathyroid disease. Identical patient data sheets on each patient were completed by the first author. Patient information included age, sex, 31 pertinent history items including the typical symptoms of primary hyperparathyroidism, history of unusual radiation exposure, history of thyroid disease, family history of endocrine disease including thyroid cancer, history of previous cancer treatment, etc. Physical examination included a precisely documented neck and thyroid examination by the operating surgeon as well as results of preoperative laryngoscopy. Referring provider records were reviewed in order to determine if palpable neck abnormalities had been appreciated by the referring provider. Standard serum chemistry results including total and serum ionized calcium levels as well as intact PTH levels were documented in all patients.

As part of the preoperative evaluation protocol, thyroid and parathyroid ultrasound was ordered if it had not been performed before arrival in the Endocrine Surgery Clinic. Ultrasound was performed in one of several settings: outside institution radiology department, referring endocrinologist private office, University of Kentucky (UK) radiology department, UK endocrinology clinic and, in the latter part of the study, in the UK Endocrine Surgery Clinic by the senior author (CYL). Fine needle aspiration biopsies were performed using accepted ATA criteria, and FNAs were done in the Endocrine Surgery Clinic, the UK endocrinology department, or the UK radiology department. On occasion, patients had been biopsied at an outside institution, in which case the cytology slides were requested and reviewed by UK cytopathologists. Indications for outside FNAs were also reviewed, and FNAs were, on occasion, repeated if the cytology was deemed nondiagnostic.

All study patients underwent double isotope parathyroid nuclear imaging with single-photon emission CT (SPECT) in addition to thyroid ultrasound. The default PTX operation was MIP using the focused lateral approach. The gamma probe was not used in any of the operations. Operations were typically performed as outpatient procedures under monitored local anesthesia although general anesthesia was used if parathyroid imaging studies were negative or a concomitant thyroidectomy was planned. All operations were performed by the first author (DAS).

Intraoperative parathyroid hormone (ioPTH) monitoring was used in all patients with typically 3 ioPTH levels drawn: a baseline level in the holding area, a 10-minute postresection level, and a 20-minute postresection

Download English Version:

<https://daneshyari.com/en/article/4292175>

Download Persian Version:

<https://daneshyari.com/article/4292175>

[Daneshyari.com](https://daneshyari.com)