Prophylactic Central Compartment Neck Dissection for Papillary Thyroid Cancer

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KEYWORDS

- Prophylactic central compartment neck dissection • Papillary thyroid cancer
- Differentiated thyroid cancer

KEY POINTS

- Controversy exists regarding the benefit of prophylactic central compartment neck dissection (pCCND) in papillary thyroid cancer (PTC), as there are no prospective randomized trials or other high-level evidence to guide decision making.
- Performing a large enough randomized controlled trial would be cost prohibitive and will therefore likely not be accomplished.
- This article presents a summary of the available data examining the controversy for and against pCCND, and concludes that the balance between the risks and potential benefits favors total thyroidectomy alone for patients with clinically node-negative PTC. There is no proven benefit for pCCND.

INTRODUCTION

A central compartment neck dissection (CCND) consists of removal of all lymph nodes and fibrofatty tissue between the common carotid arteries laterally from the hyoid bone superiorly to the innominate artery inferiorly (Fig. 1). The lymph nodes that are removed include the prelaryngeal, pretracheal, and paratracheal lymph nodes, otherwise known as level VI lymph nodes, and the anterior superior mediastinal lymph nodes along the innominate artery, referred to as level VII lymph nodes (see Fig. 1). Some investigators describe an ipsilateral CCND, which is defined as removal of the pretracheal, prelaryngeal, and the paratracheal lymph nodes from the side of the cancer only; the contralateral paratracheal lymph nodes are not removed. The

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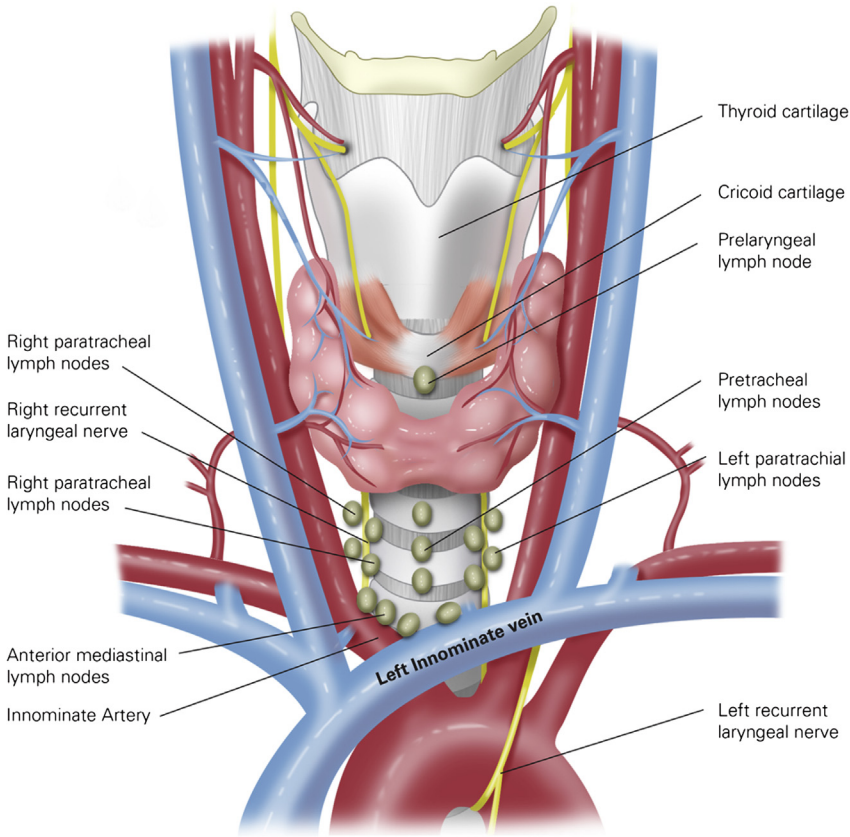

Fig. 1. Central compartment lymph nodes and related anatomy.

mean size and number of metastatic lymph nodes removed during a pCCND is 0.35 cm and 2.6 ± 3 out of a mean 13 ± 5 lymph nodes removed, respectively.[1,2]

All major endocrine societies agree that a therapeutic CCND is recommended in all patients with clinically node-positive papillary thyroid cancer (PTC).[3–7] However, there are differences in the guidelines regarding a prophylactic central compartment node dissection (pCCND). A pCCND is defined as a CCND in a patient with thyroid cancer who has no clinical, sonographic, or intraoperative evidence of abnormal lymph nodes. Whether pCCND should be performed in all patients with clinically node-negative PTC is controversial, and the arguments for and against pCCND are detailed in this article.

The controversy regarding pCCND originated from the management guidelines for patients with thyroid nodules and differentiated thyroid cancer, published in 2006 by the American Thyroid Association (ATA).[7] It was recommended that "routine" CCND be considered for all patients with PTC. The strength of the recommendation was given a rating of B, indicating it was based on fair evidence that CCND may improve health outcomes. At the same time in 2006, a European consensus statement on pCCND was endorsed by the European Thyroid Association and read, "there is no evidence that pCCND improves recurrence or mortality rates, but it does allow an accurate staging of the disease that may guide subsequent treatment and follow-up.[8]" In 2009, the revised ATA guidelines were published with a modification in the