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in the Central Compartment

Prophylactic Central-Lymph-Node

Dissection in Patients With Papillary Thyroid

Cancer Reduces the Need for Reoperation

Background

There is continuing controversy about whether prophylactic central-lymph-node dissection (CLND) is beneficial for patients who are undergoing an initial thyroidectomy for papillary thyroid cancer without clinically apparent lymph-node involvement. This article reports a three-center retrospective study that addresses this issue.

Methods

The study included 606 patients undergoing total thyroidectomy for papillary thyroid cancer (PTC) between 1995 and 2009. There were 396 patients from Australia, 182 from the United States, and 28 from the United Kingdom. In Australia, routine ipsilateral CLND was adapted after 2003. Patients qualifications included age of at least 16 years, PTC >10 mm on final histology, no evidence of lymphadenopathy on clinical examination or preoperative ultrasound, no lateral neck dissection at surgery, and no distant metastases. Patients were divided into two groups: 347 had complete thyroidectomy with CLND (group B).

Results

The characteristics of age, sex, tumor size, multifocal tumors, and TNM stages were similar in the two groups, but there were more patients with vascular invasion who had CLND and the mean follow-up was shorter in this group (32 months vs. 50 months for group A, P = 0.002). The mean number of lymph nodes removed was 7, and 49% of those with CLND had nodal disease on histology. On the basis of lymphnode involvement in the CLND cohort, 25 patients (10%) were upgraded from stage I or II to stage III. Temporary hypocalcemia occurred in 9.7% of group B and 4.1% of group A (P = 0.026). There were no other differences in the rates of complications in the two groups.

Clinical

THYROIDOLOGY

Ninety-eight percent of the patients had ¹³¹I ablation. Stimulated thyroglobulin (Tg) and the mean cumulative doses were similar in the two groups. The mean final stimulated Tg at 12 months of follow-up was similar in the two groups; in subgroup analysis, patients with T2 tumors in group A had a higher mean stimulated Tg than that in group B. In group A, 8.1% required reoperation for recurrence while only 5% of group B required reoperation. Having prophylactic CLND dissection significantly decreased the risk of reoperation in the central compartment, with a hazard ratio of 0.11 (95% CI, 0.1 to 0.8). It was calculated that 20 routine CLND procedures were required to prevent 1 case of central compartment reoperation for recurrence.

Conclusions

Routine CLND in patients without clinically apparent central node disease reduces the need for reoperation in the central compartment.

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Prophylactic Central-Lymph-Node Dissection in Patients With Papillary Thyroid Cancer Reduces the Need for Reoperation in the Central Compartment

ANALYSIS AND COMMENTARY • • • • • •

The debate about the benefit of prophylactic CLND in patients with stage 1 or 2 disease rages on. It should be noted that the current ATA guidelines do not recommend for or against prophylactic CLND in low-risk patients (1). Although the authors of this study recommend prophylactic CLND, the study is not definitive. The main reason for this is that it is a retrospective study in which there was no randomization. The patients who had CLND were from a more recent time, generally after 2002. The fact that group B had more vascular invasion could represent selection bias based on frozen section; there was no statement about this.

The main reason for not recommending prophylactic CLND is fear of unnecessary complications from the procedure. Although there was more temporary hypocalcemia in group B, there was no difference in permanent hypocalcemia; this was attributed to routine parathyroid gland autotransplantation. There was no significant difference in rates of recurrent nerve injury between the two groups, possibly attributable to the fact that the operations were performed in tertiary-care centers by high-volume surgeons. The argument in favor of the prophylactic CLND is twofold. First, it is difficult to detect nodes in the central compartment by ultrasound (2). Second, there may be a benefit resulting from reduction of recurrence, as shown in this study. However, to settle this contentious matter, a prospective, randomized trial will be necessary.

— Jerome M. Hershman, MD

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