Aim: United States and European guidelines recommend total thyroidectomy for well-differentiated thyroid cancer (WDTC) >1 cm. On the other hand, in Japan, lobectomy is the preferred treatment for patients with WDTC without high risk. The selection criteria used for lobectomy and whether lobectomy should be performed on patients without high risk WDTC are still unclear. This study compared the outcome of patients with WDTC treated with either a total thyroidectomy or lobectomy.

Methods: We reviewed records of patients with tumors smaller than 5 cm, cN0 and cM0 WDTC treated at Nagasaki University between 1994 and 2007. Data on clinicopathological features and adverse events were compared between total thyroidectomy and lobectomy-treated patients. Recurrence-free survival (RFS) and disease-specific survival (DSS) were determined using the Kaplan-Meier method.

Results: Of 268 patients with WDTC, 190 had available detailed data and were eligible for this study. The median follow-up period was 9.2 years. Total thyroidectomy was carried out in 58 (31%) and lobectomy in 132 (69%) patients. The proportion of patients over 45 years old, with papillary carcinoma and who had undergone lymph node dissection (total thyroidectomy, 86%; lobectomy, 58%) was significantly higher in the total thyroidectomy group than in the lobectomy group. Gender, tumor size and incidence of pathological lymph node metastases in patients who underwent lymph node dissection did not significantly differ with the extent of surgical resection.

Adverse events differed by total thyroidectomy and lobectomy; permanent or temporary hypocalcemia with use of medicine was 43% and 0%, respectively, and permanent or temporary recurrent laryngeal nerve paralysis was 16% and 4%, respectively. The 10-year RFS and DSS were 96% and 100%, respectively. There was no significant difference in RFS with the extent of surgical resection. RFS varied between patients with multiple and single lesions, 88% and 99%, respectively (p = 0.002).

Conclusions: Equivalent prognoses were observed for patients with tumors smaller than 5cm, cN0 and cM0 WDTC treated with lobectomy or total thyroidectomy. Adverse events were fewer in patients who underwent lobectomy than in those who underwent total thyroidectomy.

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