

## Histopathologic Study of the So Called 'Palpation Thyroiditis'

Tae Sook Hwang, M.D. and Seong Hoe Park, M.D.

*Department of Pathology, College of Medicine, Seoul National University*

*We have reviewed 1066 thyroid lesions and compared the relative incidence of the so called 'palpation thyroiditis' between autoimmune thyroiditis and normal thyroid parenchyme surrounding the nodular thyroid lesion and also discussed the pathogenesis of palpation thyroiditis.*

*The typical histopathologic features of 'palpation thyroiditis' were seen in 275 cases among 467 adenomatous goiters and in none of the autoimmune thyroiditis.*

*We here in this paper suggest that the so called 'palpation thyroiditis' is not merely a secondary phenomenon to mechanical follicular damage by vigorous palpation, but this lesion more likely develops in conditions where certain types of physiologic alteration has occurred in follicular basement membrane, just like a pathogenesis of subacute granulomatous thyroiditis.*

**Key Words:** *Palpation thyroiditis, subacute granulomatous thyroiditis, autoimmune thyroiditis, colloid giant cells*

### INTRODUCTION

The so called 'palpation thyroiditis' is a non-specific multifocal granulomatous folliculitis frequently seen in the normal thyroid tissue surrounding the pathologic thyroid nodules which were surgically removed for various types of neoplastic thyroid nodules and adenomatous goiter. This lesion can also be seen in autoimmune thyroiditis such as Grave's disease and Hashimoto's thyroiditis, but the incidence is much less frequent.

The term 'palpation thyroiditis' was first introduced by Carney et al. (1975), and thereafter this lesion was believed to result from traumatic injury or rup-

ture of isolated thyroid follicles caused by palpation of the thyroid gland.

We here in this paper are going to present and compare the relative incidence of 'palpation thyroiditis' between autoimmune thyroiditis and normal thyroid parenchyme surrounding the nodular thyroid lesions, and also discuss the rationale of this newly coined term by Carney.

### MATERIALS AND METHODS

Seven groups of thyroid disease were scrutinized. These included 239 papillary carcinomas, 53 follicular carcinomas, 211 follicular adenomas, 467 adenomatous goiters, 54 Grave's diseases, and 35 Hashimoto's thyroiditis.

All specimens were fixed in 10% buffered formalin solution and serially dissected and multiple blocks were taken for routine process. Sections for light microscopic examination were stained with hematoxylin and eosin. Cases which did not have more than four sections were excluded.

**Address for Correspondence:** *Seong Hoe Park, M.D., Department of Pathology, College of Medicine, Seoul National University, 28 Yunkun-Dong, Chongno-Gu, Seoul, 110-744 (Tel 02) 7601-2552*

*Supported by the 1984 Clinical Research Grant of the Seoul National University Hospital*

For the diagnosis of 'palpation thyroiditis', we applied Carney's broad criteria and our own criteria which require the presence of typical multinucleated colloid giant cells distributed along the follicular basement membrane. This lesion should also be differentiated from subacute granulomatous thyroiditis. The differential points are focal presence of multinucleated histiocytic giant cells, microabscess, neutrophilic exudate in fibrous interstitial stroma (Green, 1971; Stein et al., 1961).

## RESULTS

The typical features of 'palpation thyroiditis' were seen in 113 cases of 467 adenomatous goiter, 9 cases of 53 follicular carcinomas, 37 cases of 259 papillary carcinomas, and 29 cases of 291 follicular adenomas. None of the autoimmune thyroiditis revealed the typical features of 'palpation thyroiditis'; typical multinucleated histiocytic giant cells distributed along the follicular basement membrane (Table 1).

When we applied Carney's broad criteria, 275 cases of 467 adenomatous goiters revealed areas compatible with 'palpation thyroiditis'. Even we applied Carney's broad criteria, only 6 cases of 54 Grave's diseases and 2 cases of 35 Hashimoto's

thyroiditis revealed the features of 'palpation thyroiditis' (Table 2).

## DISCUSSION

The so called 'palpation thyroiditis' itself does not bear any clinical significance. However, the presence of multinucleated giant cells may lead to erroneous diagnosis on the thyroid needle biopsy or aspiration biopsy specimen.

Carney et al. reported that 'palpation thyroiditis' was present in 83-100% of the thyroid diseases (papillary carcinoma, familial medullary carcinoma, adenoma, and Grave's disease). He has also reported that 'palpation thyroiditis' was present in all thyroid tissue removed in case of laryngeal carcinomas, 39% of thyroid tissue obtained at autopsy of hospitalized patients, and none of thyroid tissue obtained at autopsy on patients who died at home. He has also reported that multifocal granulomatous folliculitis was developed in the experimental animal just by palpating the thyroid gland. With these experimental results, Carney et al. proposed the palpation theory as a pathogenesis of this lesion.

However, in our study, the incidence and distribution of 'palpation thyroiditis' in varieties of thyroid diseases differed significantly from those of Carney

**Table 1.** Distribution of palpation thyroiditis by Hwang's criteria.

| Types of disease        | No. | Disease associated with Palpation thyroiditis |      |
|-------------------------|-----|---|------|
|                         |     | No.   | %    |
| Papillary carcinoma     | 259 | 37  | 14.3 |
| Follicular carcinoma    | 53  | 9   | 17.0 |
| Follicular adenoma      | 211 | 29  | 13.7 |
| Adenomatous goiter      | 467 | 113   | 24.2 |
| Grave's disease         | 54  | 0   | 0.0  |
| Hashimoto's thyroiditis | 35  | 0   | 0.0  |

**Table 2.** Distribution of palpation thyroiditis by Carney's criteria

| Types of disease        | No. | Disease associated with palpation thyroiditis |      |
|-------------------------|-----|---|------|
|                         |     | No.   | %    |
| Adenomatous goiter      | 467 | 275   | 58.9 |
| Grave's disease         | 54  | 6   | 11.1 |
| Hashimoto's thyroiditis | 35  | 2   | 5.7  |

et al.'s study. In Grave's disease and Hashimoto's thyroiditis, the collections of numerous mononuclear cells into the lumen of the follicles are relatively frequent. Woolner et al. (1959) also described the presence of intrafollicular macrophages in Hashimoto's thyroiditis. However, most were desquamated follicular lining cells rather than true histiocytes with immunohistochemical study using antithyroglobulin and antilysozyme antibody (unpublished result). True histiocytic granulomatous folliculitis is much less frequent in autoimmune thyroiditis. When our own criteria were applied to those cases, none of the autoimmune thyroiditis revealed typical features of 'palpation thyroiditis' as compared to adenomatous goiter (24.2% of adenomatous goiter revealed typical features of 'palpation thyroiditis'). This difference was statistically significant by proportion z. test ( $z=13.3$  p 0.001).

If palpation of the thyroid is going to be the main cause of multifocal granulomatous folliculitis or 'palpation thyroiditis' then it has to be true that all kinds of thyroid enlargement must have equal chances of having palpation thyroiditis. However, it became evident that this was not true, since these features

of palpation thyroiditis were not developed in cases of autoimmune thyroiditis which actually had similar chances of palpation with other types of thyroid enlargement. Therefore, we concluded that the so called 'palpation thyroiditis' was not merely a secondary phenomenon due to a mechanical follicular damage by vigorous palpation, but this lesion seemed to develop in conditions where certain types of physiologic alteration had occurred in the follicular basement membrane just like a pathogenesis of subacute thyroiditis.

## REFERENCES

- Carney JA, Moore SB, Woolner LB, and Stillwell GK: *Palpation thyroiditis (multifocal granulomatous folliculitis)*, *Am J Clin Pathol* 64: 639-647, 1975
- Greene JN: *Subacute thyroiditis*, *Am J Med* 51: 97-108, 1971
- Stein AA, Hernandez I, and McClintock JC: *Subacute granulomatous thyroiditis*, *Ann Surg* 153: 149-156, 1961
- Woolner LB, McConahey WM, and Behars DH: *Struma lymphomatosa (Hashimoto's thyroiditis) and related thyroid disorders*, *J Clin Endocr* 19: 53-83, 1959