

# PAPILLARY THYROID CARCINOMA IN MASHHAD

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## ABSTRACT

Thyroid cancer is the most common endocrine malignancy. This study surveys the pathologic characteristics of thyroid cancer in Mashhad and study of papillary carcinoma in more detail. In this retrospective study, 108 out of 197 cases of thyroid cancer were papillary in type (55%), with female to male ratio of 1.91 which is lower than current reports. The age at the time of diagnosis ranged from five to 78. Mean age for females was 36 and for males was 38.45 years. We hope that this study will stimulate physicians to reevaluate their thoughts about thyroid cancer and try to recognize such patients at an earlier stage in the course of their disease.

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## INTRODUCTION

Thyroid cancer is the most common endocrine malignancy. The annual incidence in the United States is 10,000 or 40 per million people, and the annual death rate is about 1000 or 4 per million.<sup>1</sup>

This study surveys the pathologic characteristics of thyroid cancer in Mashhad and focuses on papillary carcinoma in more detail. Our previous experience indicates that the pathologic prevalence of thyroid cancer in Mashhad is: papillary and mixed, follicular, medullary, and anaplastic, in decreasing order of frequency.<sup>2</sup> In this retrospective study, 108 out of 197 cases of thyroid cancer were papillary in type (55%) with female to male ratio of 1.91, which is lower than current reports.

## MATERIAL AND METHODS

During the period from 1959 to 1990, there were 197 cases of thyroid carcinoma in the pathology records of Ghaem Hospital. These patients had had surgical treatment for thyroid neoplasm. Different pathologic types were evaluated and differences in age groups were calculated and discussed. In this group there were 108 cases of papillary thyroid carcinoma. We have analysed different statistical points, age and sex charac-

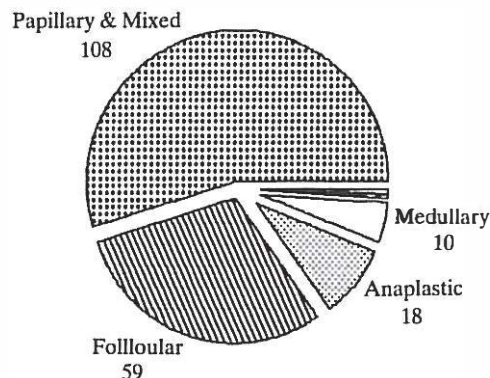


Fig. 1. Pathologic types of thyroid cancer in Ghaem Hospital, Mashhad.

teristics and compared them with available literature. In this study, mixed papillary and follicular carcinoma (papillary carcinoma with follicular elements) is considered as papillary.

## RESULTS

The results of this study of 197 cases of thyroid cancer show that the most common type is papillary or mixed (papillary and follicular carcinoma) (54.5%), followed by follicular (9.95%), anaplastic (9.1%) and

## Papillary Thyroid Carcinoma in Mashhad

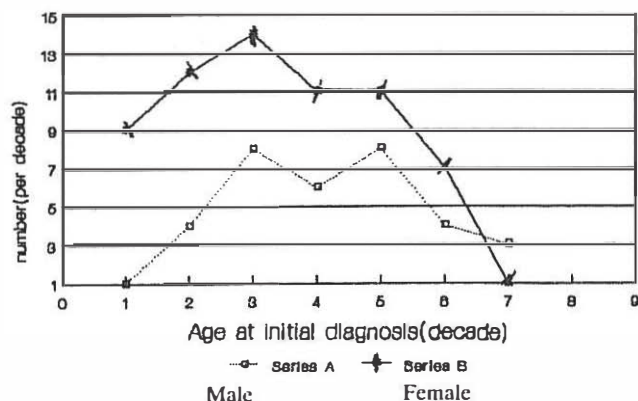


Fig. 2. Age distribution of 108 papillary carcinomas in Ghaem Hospital, Mashhad.

medullary (5%) (Fig. 1). We had one case of lymphoma (0.5%) and one case of metastatic squamous cell carcinoma of the thyroid.

Papillary carcinoma was more common in females (71 female and 37 male) and female to male ratio was 1.91.

The age at the time of diagnosis ranged from 5 to 78. Mean age for females was 38 and for males, 38.45 years. Age distribution for females and males is shown in Fig. 2.

Site of involvement has been recorded in 54 patients. 20 had right lobe involvement (37%), eight had the left lobe involved (14.8%) and 26 patients had bilateral involvement (48%).

### DISCUSSION

Papillary carcinoma of the thyroid is the most frequent malignant thyroid neoplasm.<sup>4</sup> According to retrospective analysis of 12,855 treated cases of differentiated thyroid carcinoma, 74% were of papillary type.<sup>3</sup> In our study at Ghaem Hospital in Mashhad, 108 out of 197 cases of thyroid carcinoma were papillary (54%).

#### Age and sex of patients

The age distribution of 1005 female and 495 male patients in a study of 1500 consecutive patients with papillary thyroid carcinoma who had their primary treatment at the Mayo Clinic during the period from Jan 1, 1945 to March 15, 1985 shown in Fig. 3. The age at diagnosis ranged from five to 93 years and the mean age was 45.7 for males and 43.7 for female patients. The female to male ratio was 2.03:1.<sup>3</sup>

#### Prior or coexisting thyroid disease

40% of 1500 consecutive patients with papillary thyroid carcinoma at the Mayo Clinic had one or more

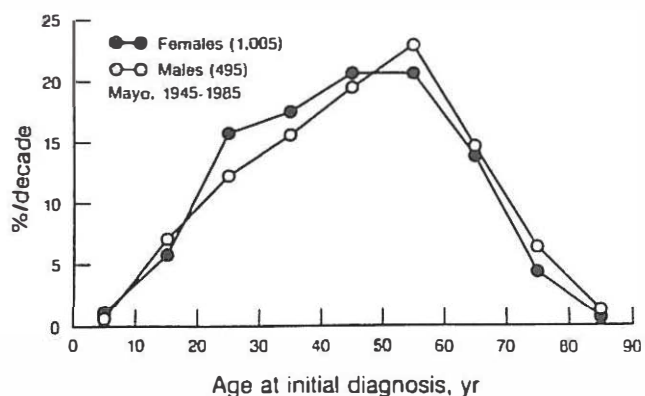


Fig. 3. Age distribution of 1500 consecutive patients with papillary thyroid carcinoma who had their primary treatment at the Mayo Clinic during the period January 1, 1945 to March 15, 1985.

benign thyroid pathology either diagnosed before or coexisting with the diagnosis of thyroid cancer.<sup>3</sup> These benign conditions were Hashimoto's thyroiditis, Graves' disease, and benign nodular thyroid disease.

#### Extent of tumour at diagnosis

In 71 % of cases in the Mayo Clinic report, the primary tumor involved only one lobe of the thyroid and multiple foci were found in 26% of cases. In other series,<sup>5</sup> multiple foci were found in 20% to 22% of the cases.

Bilateral involvement is reported in 14%. In 210 cases (14%) the tumor had involved adjacent structures, mainly muscles (8%), recurrent laryngeal nerve (6%) and trachea (5%). At diagnosis, 38% had cervical lymph node metastasis and 2% had distant metastasis.

In 54 cases of papillary carcinoma in Ghaem Hospital in which the site of involvement had been mentioned, 20 had right lobe involvement, eight had left lobe involvement, and 26 patients (48%) had bilateral involvement. High incidence of bilateral involvement in our study may be due to late diagnosis or treatment.

#### Treatment of papillary carcinoma

In 1977, Krishnamurthy and Blahd wrote: "there is as yet no unified single opinion in the medical community as to the best form of therapy for thyroid cancer. Personal philosophy, emotional factors, and the basic medical training of the physician play a significant role in the selection of therapy."<sup>6</sup>

Mazzaferri has suggested that the two most controversial topics in therapy are the optimal extent of thyroid surgery and the indications for postoperative radioiodine therapy.<sup>9</sup>

#### Extent of primary surgical resection

During a 40 year study at Mayo Clinic (887 cases), the most frequent surgical procedure was near total thyroidectomy (59%), which consisted of ipsilateral

total lobectomy, isthmusectomy and contralateral subtotal lobectomy. Total thyroidectomy was performed in 19% and bilateral subtotal lobar resection was performed in 8% of cases.<sup>3</sup>

Survival was not influenced by the extent of resection in the low risk group and unilateral resection may be useful for the large majority of patients. It has been mentioned that near total thyroidectomy is the best surgical option. When recurrent laryngeal nerves and parathyroid glands are assuredly preserved, total thyroidectomy may be a reasonable, but not necessarily superior, alternative procedure in the treatment of high risk papillary cancer.<sup>10</sup>

Three types of tumor recurrence with differing prognostic implications have been recognised:<sup>1</sup>

- 1- postoperative metastatic nodes
- 2- local recurrence
- 3- postoperative distant metastasis

In follow up of 1408 patients after 25 years, postoperative nodes had been discovered in 9%, whereas local recurrences and distant metastasis had occurred in 6% and 5% respectively. There are reports of slightly more frequent detection of metastatic nodes in the current series, that reflects the increased use of radionuclide neck scans and the introduction of neck imaging with high resolution ultrasonography.<sup>8</sup>

#### Postoperative radioiodine remnant ablation

50 years ago, Hamilton and his associates reported positive evidence for radioiodine uptake in a thyroid carcinoma.<sup>11</sup> In 1942, Keston and his colleagues considered the beneficial role of radioiodine in the treatment of thyroid cancer.<sup>12</sup> In 1981, Mazzaferri and his colleagues<sup>31</sup> concluded that:

...total or near total thyroidectomy followed by radioiodine ablation ...and life long thyroid hormone suppression ...are indicated for those with primary tumors larger than 1.5 cm in diameter or in those in whom the primary tumor is invading the thyroid capsule, or is multiple or metastatic. These recommendations seem particularly important in the initial therapy of patients over 40 years of age. For patients with an ipsilateral, small (less than 1.5 cm) non invasive, non-metastatic tumor, less aggressive therapy consisting of

a subtotal thyroidectomy (lobectomy and isthmusectomy) and thyroid hormone suppression may be adequate...

It has been reported that the value of postsurgical ablative therapy in diminishing mortality and morbidity in patients with differentiated thyroid cancer has not yet been firmly established.<sup>14</sup> Apparently successful ablation does not prevent recurrence of tumour.<sup>14</sup>

To ablate or not to ablate is a question that will haunt us for some time to come.

#### REFERENCES

- 1- Kaplan MM: Thyroid Carcinoma. *Endocrinology and Metabolism Clinics of North America* vol:19, No 3, P Xi, 1990.
- 2- Rajabian R: 5 years experience in evaluation of thyroid nodules. *Daru va Darman*, vol 7: No 77, P 15, 1990.
- 3- Hay ID: Papillary Thyroid Carcinoma. *Endocrinology and Metabolism Clinics of North America* vol 19, No 3, P 545, 1990.
- 4- Hediger C, Williams ED: Histological typing of thyroid tumors. In: *International Classification of Tumors*. World Health Organization. New York, Springer-Verlag, 1988.
- 5- Carcangiu ML, Zampi G. et al: Papillary carcinoma of the thyroid: A clinicopathologic study of 241 cases treated at the University of Florence, Italy. *Cancer*: 35:805, 1985.
- 6- Krishnamurthy GT, Bland WH, et al: Radioiodine 131-I therapy in the management of thyroid cancer: A prospective study. *Cancer* 40: 195, 1977.
- 7- McConahey WM, Hay ID, et al: Papillary thyroid cancer treated at the Mayo Clinic, 1946 through 1970: Initial manifestations, pathologic findings, therapy, and outcome. *Mayo Clin Proc* 61: 978, 1986.
- 8- Sutton RT, Reading CC, et al: Ultrasonographic-guided biopsy of neck masses in the postoperative assessment of patients with thyroid malignancy. *Radiology* 168: 769, 1988.
- 9- Mazzaferri EL: Papillary thyroid carcinoma: Factors influencing prognosis and current therapy. *Semin Oncol* 14: 315, 1987.
- 10- Grant CS, Hay ID, et al: Local recurrence in papillary thyroid carcinoma: Is extent of surgical resection important? *Surgery* 104: 954, 1988.
- 11- Hamilton JG, Soley NH, et al: Deposition of radioactive iodine in human thyroid tissue. *Univ California Publ, Pharmacol* 1: 339, 1940.
- 12- Keston AS, Ball RP, et al: Storage of radioactive iodine in a metastasis from thyroid carcinoma. *Science* 95: 362, 1942.
- 13- Mazzaferri EL, Young RL: Papillary thyroid carcinoma: A 10 year follow up report on the impact of therapy in 576 patients. *Am J Med* 70:511, 1981.
- 14- Snyder J, Gorman C, et al: Thyroid remnant ablation: Questionable pursuit of an ill-defined goal. *J Nucl Med* 24: 659, 1983.