Papillary Thyroid Carcinoma

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Abstract

Introduction: Papillary thyroid carcinoma is the most common form of thyroid malignancy. Numerous clinicopathologic studies have documented its generally indolent clinical course and excellent overall prognosis. However older patients have more aggressive disease with a worse prognosis.

Material and Methods: A retrospective study was done, including all the patients who had presented to our department East Surgical ward of Mayo hospital, in Lahore during 8 years period from October 2006 to November 2013 with papillary thyroid carcinoma.

Results: There were 30 male and 100 female patients, resulting in a male to female ratio of 1:3.33. The range was from 13 to 83 years, and the mean was 40 years. All the patients presented initially with clinically evident disease in the neck. This was located within the thyroid gland in 72 (67.2%), in the thyroid gland plus cervical nodes in 54 (41.5%), and in the cervical nodes only in 1 (0.76%).

Conclusion: Total thyroidectomy followed by RAI therapy is the treatment of choice for primary and recurrent papillary thyroid carcinoma.

Keywords: Papillary carcinoma; Hypothyroidism; Thyroidectomy; Lymphadenopathy

Introduction

Cancer of the thyroid gland is the most common endocrine malignant tumor and accounts for most endocrine cancer related deaths each year. The annual incidence is about 3.7 per 100,000 of the population and the sex ratio is 2 females to 1 male [1,2]. Papillary thyroid carcinoma (PTC) is the most common form of thyroid malignancy. Numerous clinicopathologic studies have documented its generally indolent clinical course and excellent overall prognosis. However older patients have more aggressive disease with a worse prognosis. Papillary thyroid cancer metastasizes usually through lymphatics [3]. Papillary thyroid carcinoma is diagnosed based on cytological characteristics, such as ground glass nuclei, intra nuclear inclusions, or nuclear grooves. Many subtypes of PTC have been described, of which classical PTC is the most common (80%), the follicular variant of PTC (FVPTC) is the second most common subtype, being found in 9% to 22.5% of patients with PTC [4-6]. The treatment of papillary thyroid cancer is dependent on the biologic behavior of the tumor. The role of completion thyroidectomy, central neck dissection, and postoperative radioiodine (RAI) ablation to help prevent recurrent disease is all dependent on the malignant potential of the primary tumor. Prognostic factors as sex and age, tumor size, histologic type, tumor infiltration, vascular or lymphatic invasion, have been shown to affect survival in these patients [7]. Even in patients with metastatic disease, the overall survival in papillary thyroid cancer is higher.

Materials and Methods

This retrospective study engaged every case of Papillary thyroid carcinoma which had been recorded in East Surgical ward of Mayo hospital, in Lahore during around 8 years period from October 2006 to November 2013. The patients included were more than 12 years old.

We surveyed all cases regarding patient's age and gender as well as site of involvement and final histopathological diagnosis according to the patient's medical records. Data were analyzed using SPSS 15 software.

Results

There were 30 male and 100 female patients, resulting in a male to female ratio of 1:3.33. This ratio remained fairly constant throughout the various age groups, except of the fourth decade, in which women greatly predominated with almost no male patients. The range was from 13 to 83 years, and the mean was 40 years. The mean age of female patients was 38.91 years, and that of male patients 43.83 years. All the patients presented initially with clinically evident disease in the neck. This was located within the thyroid gland in 72 (67.2%), in the thyroid gland plus cervical nodes in 54 (41.5%), and in the cervical nodes only in 1 (0.76%).

Conclusion: Total thyroidectomy followed by RAI therapy is the treatment of choice for primary and recurrent papillary thyroid carcinoma.

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16.25% of case had multifocal involvement, both lobe was involved in 6.90% cases. 36.36% cases had lympho vascular invasion, 39.39% cases had no lympho vascular cases and in 24.24% cases lymphovascular invasion was identified. 57.57% cases had extra thyroidal involvement and 24.24% cases had no extra thyroidal involvement and in 18.18% cases no extra thyroidal involvement was identified. Cervical lymph node is the commonest site of metastasis in papillary carcinoma and 53(40.76%) cases had lymph node involved of this 44(33.84%) cases had unilateral lymph node involved whereas 9(6.92%) cases had bilateral lymph node involved. maximum number of lymph node isolated was 77 and maximum number of positive lymph node found was 39. There were 7 cases with distant metastasis and organ involved was 1 lung, 1 skull, 1 sternum, 1 iliac crest, 1 femur, 1 vertebra and 1 mandible. Different operation was done according to the carcinoma condition, 29(22.3%) had Total thyroidectomy, 44(33.8%) cases had Total thyroidectomy & unilateral neck dissection, 9(6.9%) cases had Total thyroidectomy & bilateral neck dissection, 40(30.8%) had Lobectomy and is thmusectomy followed by completion thyroidectomy, 3(2.3%) cases had Sistrunk operation followed by total thyroidectomy, 3 (2.3%) cases had subtotal thyroidectomy, 1(0.8%) case had Inoperable mass and 1(0.8%) case had is thmusectomy followed by completion thyroidectomy. The histopathology report was papillary thyroid carcinoma 107(82.3%) cases, papillary thyroid carcinoma with classical and follicular variant 1(0.8%) case, papillary carcinoma with follicular variant 20(15.4%), follicular and papillary thyroid carcinoma 2(1.5%) cases were found, 4 patients required thacreachotomy postoperatively due to extensive involvement of trachea by the tumor.

Discussion

Papillary thyroid carcinoma is a major histological type of differentiated carcinoma of the thyroid and most often has an excellent prognosis. Papillary carcinoma of thyroid accounts for 80% of all thyroid malignancies in iodine sufficient areas and is the predominant thyroid cancer in children and individuals exposed to external radiation [8]. Papillary carcinoma occurs more often in women and the mean age of presentation is 30 to 40 years. Most patients are euthyroid and present with slow growing mass in the neck. Lymph node metastasis is common and may be the presenting complaint. Diagnosis is established with FNAC of thyroid mass or lymph node. Once the diagnosis is made USG should be done to find the status of opposite lobe and central and lateral compartment lymphnodes. Distant metastases from papillary thyroid carcinoma may occur with a frequency ranging from 1.73-8.4% in most studies [9,10]. The most common site of distant metastases from papillary thyroid carcinoma is the lung followed by mediastinal lymph nodes. Less often, distant metastases may appear in bones, central nervous system, liver, pericardium and pleura, kidney, pancreas, skin and muscle, gastrointestinal tract [11]. The treatment of choice for papillary carcinoma of thyroid is total thyroidectomy [12]. As this has the benefit of postoperative RAI therapy which effectively detect and treat residual thyroid tissue or metastatic disease [13], makes serum Tg level a more sensitive marker to detect recurrence and persistent disease, eliminates contra lateral occult cancers as sites of recurrence and improves survival, decreases the 1% risk of progression to undifferentiated or anaplastic thyroid cancer and reduces the risk of reoperative surgery [14,15]. For patients with thyroid cancer >1 cm, the near-total or total thyroidectomy should be done. Thyroid lobectomy alone is sufficient treatment for small (<1 cm), low-risk, unifocal, intra thyroidal papillary carcinomas in the absence of prior head and neck irradiation or radiologically or clinically involved cervical nodal metastases [16]. Just lobectomy is not an appropriate choice of surgery, 85% of tumors are bilateral and 33 to 50% of patients who develop recurrence die from their disease [15]. During thyroidectomy, if central compartment nodes are found enlarged or it’s a T3/T4 lesion without nodes, then central compartment node dissection should be accompanied [15,16]. Lateral neck dissection should be done when lateral compartment nodes are enlarged and are preferred over berry picking [16]. Metastatic differentiated thyroid carcinoma can be detected and treated by 131I in about 75% of patients [16,17]. T4 is necessary not only as replacement therapy to patients after total thyroidectomy, but it also has additional effect of suppressing TSH and reducing the growth stimulus for any possible residual thyroid cancer cells [18].

Conclusion

The age and sex distribution with papillary carcinoma in our setup is very much similar to other parts of the world. Total thyroidectomy followed by RAI therapy is the treatment of choice for primary and recurrent papillary thyroid carcinoma.

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