

Thyromegaly: Lack Of Consensus In Management

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Abstract

There is no uniform pattern of clinical presentation and management strategies in thyroid disorders. Controversy continues regarding appropriateness of criteria for medical versus surgical intervention. The optimal extent of thyroid gland removal has been debated. Because of so many conflicting views, even surgeons with expertise in endocrine surgery hold considerably varying opinions.

This prospective study was conducted to evaluate the spectrum of clinical presentation as well as the management strategies of various thyroid disorders coming to surgical clinics of our institution.

The present study included 100 patients –clinically 68 had solitary thyroid nodules (STN), 15 multinodular goiter, 4 thyroid carcinoma and 13 thyroiditis. The management of the 68 patients with STN included: conservative treatment (3), lobectomy (50), nodulectomy (13), total thyroidectomy (1), partial lobectomy (1). Surgical procedures in 15 patients with multinodular goiter were: Hartley Dunhill procedure (8), subtotal thyroidectomy (3), lobectomy (3) total thyroidectomy (1). Thyroid carcinoma management included hemithyroidectomy (1), Hartley Dunhill procedure (1), total thyroidectomy (2), total thyroidectomy with central lymph node dissection (2), total thyroidectomy with neck dissection and parathyroid autotransplantation (2). Related to thyroid operations with likely impairment of parathyroid glands (Hartley Dunhill procedure, total thyroidectomy, total thyroidectomy with neck dissection), the incidence of tetany was 20%.

In the present era of evidence based medicine, the variety of options available in thyroid surgery requires to stratify and standardize the surgical management.

INTRODUCTION

Most patients with goiter are euthyroid but there is a high incidence of hypothyroidism or hyperthyroidism. Approximately 5% of the world's population have goiter. About 75% are endemic developing in areas of iodine deficiency. There is no uniform pattern of clinical presentation and management strategies in thyroid disorders. Controversy continues regarding the appropriateness of criteria for medical therapy versus surgical intervention. The optimal extent of thyroid gland removal has been widely debated with opponents of extensive resection arguing that these procedures carry potentially increased complications. Because of so many conflicting views, even surgeons with expertise in endocrine surgery hold considerably varying opinions, even on optimal surgical management of differentiated thyroid cancer or of benign lesions₂. There is no objective evidence supporting a consistent association between surgeons' experience and patient outcomes. Some small series suggest that low-volume surgeons, well supervised trainees and surgeons at community hospitals can obtain excellent clinical outcomes._{3,4}

In this prevailing era of lack of consensus on various aspects of standard policy in management of a particular thyroid disease, it was proposed to conduct a prospective study to evaluate the spectrum of clinical presentation as well as management strategies of various thyroid disorders coming to surgical clinics of our institution.

MATERIAL & METHODS

The present prospective study included 100 patients of both benign and malignant thyroid disease presenting in surgical outdoor clinics. After detailed clinical examination of each patient, serum thyroid hormone assay, sonography and fine needle aspiration cytology were done. After this work-up, patients were placed in the following provisional clinical grouping: solitary thyroid nodule, multinodular goiter, thyroiditis and malignant neoplasm of the thyroid. All patients with abnormal thyroid function (hypo- or hyperthyroidism) were rendered euthyroid with drugs. Based on comprehensive physiological, clinical and pathological status, treatment options included: conservative therapy, nodulectomy, partial lobectomy, lobectomy and total thyroidectomy with or without neck dissection. All cases

received prophylactic antibiotics and surgery was done by consultant level surgeons. The postoperative course of all patients was recorded with regard to bleeding, wound infection, hoarseness of voice and signs of tetany. All findings were tabulated and analysed to draw inferences.

OBSERVATION

The present prospective study consisted of 100 cases of thyromegaly (both benign and malignant). There was wide variation of age (12 – 70 years). Thyroid disease appears to be 10 times more common in females than males. In our series of 100 patients with thyromegaly, 68 patients were diagnosed as solitary thyroid nodule (STN), among whom only 5 were male and 63 were female. Among 15 patients with multinodular goiter, only 2 were male and 13 were female. As far as thyroiditis is concerned, two were male while 11 patients were female. With regards to thyroid malignancies, one patient was male and the remaining three were female. Only 16 patients showed altered thyroid function and the remaining 84 were euthyroid. The maximum number of patients who showed altered thyroid function belonged to the thyroiditis group. Among patients who were clinically diagnosed with thyroiditis, 23.08% were euthyroid, 38.46% were hyperthyroid and the same percentage was hypothyroid. Of the multinodular goiters, only 26.67% were toxic and the rest was euthyroid. All patients with malignant neoplasms were euthyroid.

Only 5 patients presented with pressure symptoms in form of dysphagia and dyspnoea. None of the patients presented with hoarseness of voice. In 68 patients clinical diagnosis was STN: 3 (4.41%) were managed conservatively, 73.53% (50/68) had lobectomy/hemithyroidectomy, 19.12% (13/68) nodulectomy, 1.47% (1/68) underwent partial lobectomy. Only one patient was found to have papillary thyroid carcinoma and underwent total thyroidectomy. The most common definitive histopathological pattern was multinodular goiter which constituted 27.69% of cases, followed by adenomatous goiter (26.15%), and nodular goiter, constituting 23.08%. In only fifteen patients clinical diagnosis was multinodular goiter, 53.33% (8/15) underwent Hartley Dunhill procedure, 20% (3/15) subtotal thyroidectomy, 20% (3/15) lobectomy and 6.67% total thyroidectomy.

In our study of 15 patients with multinodular goiter, common histopathological patterns were: multinodular goiter, multinodular goiter with lymphocytic thyroiditis and multinodular goiter with degenerative changes, each

accounting for 20% cases. Two out of 15 patients (13.33%) were found to have papillary thyroid carcinoma on definitive histopathology (one underwent Hartley Dunhill procedure and another one underwent total thyroidectomy).

In our series, 13 patients were clinically diagnosed as thyroiditis. All patients underwent fine needle aspiration cytology which revealed lymphatic thyroiditis in all except in three (colloid goiter with associated thyroiditis in one and colloid goiter in the remaining two). Among these 13 patients, 5 patients were hyperthyroid, 5 were hypothyroid and the remaining 3 were euthyroid. All patients were managed conservatively except one (who underwent subtotal thyroidectomy; definitive histopathology showed Hashimoto's thyroiditis).

In only 4 patients clinical diagnosis was malignant neoplasm. Two of them were found to have papillary thyroid carcinoma, one patient follicular thyroid carcinoma and another one minimally invasive follicular thyroid carcinoma.

None of our patients developed wound infection, haemorrhage, respiratory insufficiency or hoarseness of voice. Only 3 patients developed tetany in the form of paraesthesia, cramps, Chvostek's sign and carpopedal spasm. These patients were managed by injection of calcium gluconate and oral calcium supplementation and monitored by serial calcium levels in the follow-up.

DISCUSSION

There is wide variation in clinical presentation and operative management of thyroid disorders. This is because of the individual perception of each particular surgeon, but to some extent another contributory factor is the lack of a uniform standard policy. For instance, some are satisfied with hemithyroidectomy for papillary thyroid carcinoma while others would not settle for anything less than thyroidectomy/radical surgery. In our study, patients' ages were ranging from 12-70 years. The maximum was in the age group from 31 to 40 years. Male to female ratio in our study was 9:91 or approximately 1:10.1. Only 5% of the patients presented with pressure symptoms. Sixteen per cent of the patients presented with altered thyroid function, 9% were hyperthyroid, 7% hypothyroid and the remaining 84% euthyroid.

In a study of 334 consecutive cases of thyroid swelling carried out by Bapat et al., there was a female preponderance (4.39:1). Pressure symptoms were present in only 1.5% of the cases. Hyperthyroidism was manifest in 14.67% of the

cases.⁵ In another large series by Desai et al., 79% had hypothyroidism (goitrous as well as non-goitrous), 19% had euthyroid and 2% had hyperthyroid goiter.⁶ In another study of 657 patients carried out by Lumachi et al., there was again female preponderance (female : male = 80.8% : 19.2%).⁷

In our study, swellings were clinically differentiated into solitary thyroid nodule (68%), multinodular goiter (15%), thyroiditis (13%) and malignant neoplasm thyroid (4%). In a study of Bapat et al., swellings were clinically differentiated into uninodular (39.52%), multinodular (47.31%) and diffuse (13.17%). In our study, solitary thyroid nodule was the most common presentation (68 patients). Three patients were managed conservatively (4.4%). The remaining 65 patients underwent various thyroid operations. Surgical options included nodulectomy (19.12%), partial lobectomy (1.47%), hemithyroidectomy (73.53%) and total thyroidectomy (1.47%). In one study of 172 patients with STN by Khairy et al., surgical options included were hemithyroidectomy, subtotal thyroidectomy, near total thyroidectomy and total thyroidectomy. 59% patients underwent hemithyroidectomy out of which 13.9% turned out to be malignant.⁸ Definitive histopathology of 65 patients showed benign nodules in 93.84%, Hashimoto's thyroiditis in 3.08% and papillary thyroid carcinoma in 3.08%. In a similar study of 606 patients with solitary nodule by Lumachi et al., definitive histology showed benign nodules in 82.5% (including follicular adenoma in 39.4%) and carcinoma in 17.5%, of which 17% were follicular carcinoma.⁷ The present study included 15 cases of clinically diagnosed multinodular goiter. 26.67% of patients were hyperthyroid, 73.33% euthyroid. Operative procedures were Hartley Dunhill procedure (53.33%), subtotal thyroidectomy (20%), lobectomy (20%) and total thyroidectomy (6.67%).

Surgical management in our study is comparable to previous studies. In the literature, Hartley Dunhill procedure is preferred over bilateral subtotal thyroidectomy because the former requires re-entering only one side of neck should recurrence require re-operation. In our study, the third most common cause of thyromegaly was thyroiditis. This group of thyromegaly showed the maximum alteration of thyroid function. Thirty-eight per cent of the cases presented with hyperthyroidism, another 38% with hypothyroidism and the remaining 24% were euthyroid. Fine needle aspiration cytology revealed lymphatic thyroiditis in 10 patients (76.93%), colloid goiter with associated thyroiditis in one (7.69%) and colloid goiter in the remaining two (15.38%). All patients were managed conservatively by

antithyroid drugs and thyroid hormone replacement therapy, depending upon thyroid hormone levels.

Thyroid cancer accounts for less than 1% of all malignancies. In our study of 100 patients with thyromegaly, eight patients were found to have malignant neoplasms of the thyroid on definitive histopathology. The age of these patients ranged from 29-45 years. All patients were female except one. Out of these eight patients four were diagnosed clinically as malignant while the remaining four with preoperative diagnosis of benign lesions turned out to be malignant on the final histopathological report. Surgical options included hemithyroidectomy (1), Hartley Dunhill procedure (1), total thyroidectomy (2), total thyroidectomy with central lymph node dissection (2) and total thyroidectomy with modified radical neck dissection type III with parathyroid autotransplantation (2). Definitive histopathology showed papillary thyroid carcinoma in 6 patients (75%) and follicular thyroid carcinoma in the remaining 2 patients (25%).

None of our patients developed wound infection, haemorrhage, respiratory insufficiency or hoarseness of voice. Only 3 patients developed tetany in the form of anxiety, paraesthesia, Chvostek's sign or carpopedal spasm. Tetany was observed in those patients who underwent Hartley Dunhill procedure, total thyroidectomy and total thyroidectomy with modified radical neck dissection type III and parathyroid autotransplantation. In the present study, the incidence of recurrent laryngeal nerve palsy was nil while the incidence of tetany was 20% related to thyroid operations with likely impairment of parathyroid glands (Hartley Dunhill procedure, total thyroidectomy, total thyroidectomy with neck dissection). The reported high incidence of tetany in our study could be due to the low sample number; two thirds of the cases who developed tetany belonged to the group of thyroid malignancies. The reported incidence of permanent recurrent laryngeal nerve injury varies from 0 to 14% and the incidence of permanent hypoparathyroidism from 1.2 to 11%.⁹

CONCLUSION

The clinical presentation of thyroid disorders varies in different geographical areas and so does the profile of surgical management including extent of resection: It has remained the individual surgeon's choice; but now, in the era of evidence based medicine, there is a need to stratify and to standardize the surgical management such as, for instance, with breast carcinoma where a variety of options are

available for a particular stage.

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