

Clinical study of solitary thyroid nodule at a tertiary hospital

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Abstract

Background: A Solitary thyroid nodule is a definite clinical entity with important pathological significance and may become cosmetically distressing to a patient. The major concern relates to the potential malignancy within such a nodule. In the recent years advent of high-resolution ultrasound, improved efficacy of FNAC and better understand of pathology the management protocols are also changing. Present study was aimed at evaluation of solitary nodule in thyroid at a tertiary health center. **Material and Methods:** Present study was prospective, observational study, conducted in patients admitted to surgical ward with solitary nodule of thyroid in all age group. **Results:** 25 cases of solitary thyroid nodule were studied. Most of the patients were in their 3rd decade and many others in the 4th decade. The youngest was 14 year old and oldest was 70 years, There was a preponderance of females with thyroid nodules in this study with F:M is 23:2. The maximum number of patients presented within 6 months of the nodule being noticed 60%, 88% of patients presented within first 2 years of swelling. All the patients come with the chief complaining of lump in the neck of them 4% had some amount of pain and discomfort attributed to the swelling and toxic symptoms was present in one case (4%). Right lobe was the commonest lobe to be involved in 8 cases (72%) left lobe is involved in 7 cases (28%). Most of the solitary nodules in this study was benign in nature 80% and 20% of cases were malignant in this study. The patients with a benign nodular goiter 16 patient and subjected to hemithyroidectomy. While 4 patients of follicular adenoma undergone for hemithyroidectomy patients of follicular carcinoma 2 have undergone hemithyroidectomy had 3 of papillary carcinoma undergone total thyroidectomy. There was a high incidence of benign nodules 60% followed by follicular adenoma 16% and follicular carcinoma 8%, and papillary carcinoma in 12% cases and 4% multinodular goiter. There were only 1(4%) cases with wound infection and 1 patient (4%) with seroma. No other complications like tendency hoarseness of voice hemorrhage, thyroid crisis, RLN palsy etc. was seen in 92% of cases. No deaths were reported in this study. **Conclusion:** **Keywords:** Solitary thyroid nodule, Papillary carcinoma, FNAC, histopathological examination

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INTRODUCTION

Solitary nodule of the thyroid is a common though varying in incidence in different geographical regions. A Solitary thyroid nodule is a definite clinical entity with important

pathological significance and may become cosmetically distressing to a patient.¹ The optimal management of a thyroid nodule continues to be a source of controversy and the operative Intervention recommended by most surgeons is not always considered divine by some physicians advocating either observation of thyroid suppression. The major concern relates to the potential malignancy within such a nodule and to the anxiety related to it. This basis for this conflict of divergent opinions may stem from the fact that the thyroid nodule undoubtedly has different connotations when considered by the thyroid clinician/surgeon/pathologist, but because all are concerned with risk of malignancy.² In the recent years advent of high resolution ultrasound, improved efficacy of FNAC and better understand of pathology the management protocols are also changing. Hence preoperative

identification of the nodule are likely to contain malignancy is important since treatment approach varies accordingly.^{3,4} The patients who have such solitary nodules to be always dilemma. Although a great majority of these nodules are benign a significant risk of malignancy is also there.^{5,6} Present study was aimed at evaluation of solitary nodule in thyroid at a tertiary health center.

MATERIAL AND METHODS

Present study was prospective, observational study, conducted in Department of General Surgery, Belgaum Institute of Medical Sciences, Dr Ambedkar Road, Belagavi, India. Study duration was of 1 year (July 2003 to June 2004). Study was approved by institutional ethical committee.

Inclusion criteria: Patients admitted to surgical ward with solitary nodule of thyroid in all age group and sexes.

Exclusion criteria: Patients with thyroid swelling other than clinically diagnosed solitary nodule thyroid.

Study was explained and a written informed consent was taken for participation. Patients underwent thorough history taking followed by clinical examination and clinically details such as age, sex, duration of symptoms, signs and symptoms suggestive of thyrotoxicosis and malignancy were noted. Relevant haematological and radiological investigations were conducted. FNAC was done for all the patients, for cytological diagnosis. They were differentiated into the benign and malignant swellings and treatment was charted out accordingly. Pre operative LDL was done for all patient to know the status of vocal cords before surgery. Thyroid fraction test and isotope scan is asked in few patients when suspected on clinical grounds. All the patients were taken up for surgery after basic investigations. Post operative status of the vocal cord was noted the confirm any recurrent laryngeal nerve injury. Post operative course of the patients was carefully noted till the patient was discharged, all the cases were called for follow up after a week is the OPD and later fortnightly then monthly for review. The histopathology report was obtained as the final diagnosis. Patient who needed revision surgery as and when indicated by the HPR were reformed to cancer hospital. The statistical tests used in this study are the test of proportion and percentage. In depth analysis of the data collected was done. Statistical analysis was done using descriptive statistics.

RESULTS

25 cases of solitary thyroid nodule were studied. Most of the patients were in their 3rd decade and many others in the 4th decade. The youngest was 14-year-old and oldest was 70 years, There was a preponderance of females with thyroid nodules in this study with F:M is 23:2. The maximum number of patients presented within 6 months

of the nodule being noticed 60%, 88% of patients presented within first 2 years of swelling. All the patients come with the chief complaining of lump in the neck of them 4% had some amount of pain and discomfort attributed to the swelling and toxic symptoms was present in one case (4%).

Table 1: General characteristic

characteristic	Cases	%
Age (Group)		
<20	1	4
21-30	10	40
31-40	9	36
41-50	3	12
>50	2	8
Gender		
Male	2	8%
Female	23	92%
Duration of symptoms		
<1 months	1	4%
1-6 months	15	60%
6-12 months	4	16%
1-2 years	2	8%
>2 years	3	12%
Symptoms		
Swelling	25	100%
Pain	1	4%
Toxic symptoms	1	4%

Right lobe was the commonest lobe to be involved in 8 cases (72%) left lobe is involved in 7 cases (28%). Most of the solitary nodules in this study was less than bean and oval in shape.

Table 2: Location and size of nodule

Location	No. of cases	Percentage
Right lobe	18	72%
Left lobe	7	28%
size of the lesion (in cm)		
<3	1	4
3-5	21	84
>5	3	12

Most of the solitary nodules in this study was benign in nature 80% and 20% of cases were malignant in this study. The patients with a benign nodular goiter 16 patient and subjected to hemithyroidectomy. While 4 patients of follicular adenoma undergone for hemithyroidectomy patients of follicular carcinoma 2 have undergone hemithyroidectomy had 3 of papillary carcinoma undergone total thyroidectomy.

Table 3: Surgical treatment as per FNAC diagnosis

Diagnosis	Hemithyroidectomy	Total thyroidectomy
MNG	0	0
Benign nodules	16	
Follicular adenoma	4	
follicular carcinoma	2	
Papillary carcinoma		3

There was a high incidence of benign nodules 60% followed by follicular adenoma 16% and follicular carcinoma 8%, and papillary carcinoma in 12% cases and 4% multinodular goiter.

Table 4: Incidence of various pathology according to HPR

	Cases	%
Multinodular goiter	01	4%
Benign nodules	15	60
Follicular adenoma	4	16%
Follicular carcinoma	2	8%
Papillary carcinoma	3	12%

There were only 1(4%) cases with wound infection and 1 patient (4%) with seroma. No other complications like tendency hoarseness of voice hemorrhage, thyroid crisis, RLN palsy etc. was seen in 92% of cases. No deaths were reported in this study.

Table 5: Incidence of postoperative complications

Complications	Cases	%
Wound Infection	1	4%
Seroma	1	4%
No complications	23	92%

There were no false positive reported follicular neoplasm were taken as malignant only after confirming by histopathology report. All benign cases were advised to come to the all the benign cases were advised to come to the OPD for any complaints. All carcinoma patients were closely monitored and on any size of recurrence were referred to cancer hospital. There were no case of anaplastic or medullary carcinoma in this study.

DISCUSSION

The solitary thyroid nodule is on study now referred to by the self-defined term. Clinically isolated swelling of the thyroid has always remained an enigma for all thyroid related surgeons and physicians. Majority of patients of this study were in the age group of 21-50 years (92%) with no patients less than 10 years of age. SK Bhansali⁷ studied 600 cases showed a peak incidence between 30-40 years (42%) and Shivangi Rao⁶ also noted that 55% of cases were from 30-40 years age group. Majority of the patients were females. The female to male ratio in this study was 23:2 in our study. The female: male ratio was more compared to other studies.^{6,7} The consistent symptom of all patients was presence of a swelling in the neck, the majority of the patients come within the first 2 years of the noticing the swelling No special relationship was found regarding presentation of symptoms and carcinoma. The earliest presentation of symptoms and carcinoma. Awareness is very important as early detection of malignancy is essential for better prognosis of the disease. Lesions in the right lobe were 2 ½ times higher than the lesions in the left lobe in Shivangi Rao⁶ series. Right lobe

of the gland contains more of the gland tissue. It is responsible for increased incidence of thyroid disorders on right side. Similar findings were noted in present study, FNAC as a sole diagnostic procedure is very objective and could be as good only as the performing cytologists with scope for human even and misdiagnosis. Also it is relatively a very safe type of procedure. The percentage accuracy of FNAC cytology as a diagnostic method was detected to be sensitivity 85.87%, sensitivity in 100%. The complication rate at this study was significantly low of the 2 patients. one patient had wound infection and one patient with seroma which was treated by opening of one or 2 sutures. No patients developed recurrent laryngeal nerve palsy, tetany hemorrhage in this study. Majority of the HPR reports show benign in nature in present study (90%) as compared to Fenn *et al.*⁸, (87.5%) and Bhansali *et al.* (80%). Malignant lesions formed a significant portion solitary thyroid nodule in this study 20%. However, the majority of solitary nodule of thyroid were benign (80%). Papillary carcinoma was commonest malignancy followed by follicular carcinoma (8%)/ On the comparing the histopathology report with that of FNAC it was found that FNAC had an accuracy of 92.9%. In this series it was noted that a higher incidence of carcinoma in more than 40 years of age group as some as in other series.^{6,7} Present study was successfully in witnessing and assessing the benefits of the chosen strategy of management of a solitary thyroid nodule. Until the post operative period. However, as in unfortunate part of many of the series of many of the series many patients were lost to be follow up. Until relatively recently, many clinicians would advise and practice the routine surgical resection of all solitary thyroid nodule on the grounds for remaining the lesions for definitive histopathological assessment, provided this is the only method of obtaining a firm tissue diagnosis. By the use of modern-day investigations and their improvements one can now considerable minimize the indications for surgical resection of nodules to an acceptable level.

CONCLUSION

In patients with solitary nodules, fine needle aspiration cytology (FNAC) should be first investigation. Thyroid nodule greater than 4 cm in size, symptomatic or FNAC suggesting it to be malignant, suspicious for malignancy or indeterminate should prompt surgical excision. Hemithyroidectomy is often procedure of choice in most non-neoplastic and some neoplastic nodules.

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