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Prospective Evaluation of Surgical Management Strategy of Thyroid Diseases in Assiut University Hospitals, A Clinical Audit

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Abstract

Background: Thyroid surgery is the mainstay of the treatment of surgical goiters. Treatment modalities for the surgical management of goiter include lobectomy, sub-total thyroidectomy, near-total thyroidectomy and total thyroidectomy.

Aim of Study: To compare current surgical management of thyroid diseases in Assuit University Hospital with management guidelines, planning for improving our management of thyroid diseases and correct obstacles to achieve reduction in the morbidity and mortality result from thyroid diseases.

Patients and Methods: Our study included 60 patients who were admitted to General Surgery Department with any thyroid disease during a period of six months and managed surgically. All patients had neck ultrasound and FNAC was done for suspicious cases for malignancy. Benign solitary nodular goiter was managed by unilateral lobectomy and isthmusectomy. MNG was managed by total and sub-total throidectomy. Malignant goiter was managed according to cytology with total thyroidectomy being done for most cases. Controlled toxic goiter was managed by total or sub-total thyroidectomy. All cases were subjected to pre-and post-operative layrngoscopic examination for assessement of vocal cord mobility. Post-operative histopathology is amust in all cases.

Results: Mean age of the studied patients was 39.18 ± 11.75 years with range between 15 and 63 years. Out of 60 patients, 49 (81.7%) patients were females and 11 (18.3%) patients were males. 17 (28.3%) of the studied had toxic manifestations and 15 (25%) patients were on anti-thyroid medications. Iodine deficiency was noticed in 9 (15%) patients while 7 (11.7%) patients had endemic goiter. Out of the studied patients, 5 (8.3%) patients had family history of thyroid disease.

Unilobar enlargement presented in 12 (20%) patients while 48 (80%) patients had Bilobar thyroid enlargement. Diffuse goiter presented in 4 (6.7%) patients and nodular goiter in 56 (93.3%) patients, 13 (21.7%) solit all patients were subjected to thyroid function tests (TSH, free T3 and T4) before and after thyroidectomy. It was noticed that there were significant improvement in level of TSH, free T3 and free T4 after thyroidectomy (p<0.05).

FNAC was done in 41 (68.3%) patients. Total thyroidectomy was performed in 43 (71.7%) patients while 10 (16.7%) and 7 (11.7%) patients had subtotal thyroidectomy and unilateral lobectomy with isthmusectomy respectively. The most frequent complications post-operatively were hoarseness of the voice and choking occurred in 18 (30%) and 16 (26.7%) patients respectively. Injury of RLN occurred in 5 (8.3%) patients.

All of those patients received replacement therapy and none of them received chemotherapy or iodine therapy.

Post-operative complications were frequent in those patients had total thyroidectomy where hoarseness of the voice, chocking and injury of recurrent laryngeal nerve occurred in 13 (30.2%), 12 (27.9%) and 5 (11.6%) patients respectively.

In case of subtotal thyroidectomy 4 (40%) patients had choking and 4 (40%) patients had hoarseness of the voice. Only one patient from those had unilateral thyroidectomy had post-operative complication in form of hoarseness of the voice.

Duration of surgeon experience was less than 5 years in majority of cases (56.7%) while in 16 (26.7%) and 10 (16.7%) patients duration of surgeon experience was 5-10 and more than 10 years respectively. With experience less than 5 years, post-operative complications were; 3 patients had R.L.N. injury, 12 patients had hoarseness of voice, and 10 patients had chocking. With surgical experience between 5 to 10 years, complications were; 2 patients had R.L.N. injury, 4 patients had hoarseness of voice, and 5 patients had chocking. While with experience more than 10 years, the complications were so minimal with only 2 patients had transient hoarseness of voice and chocking.

In case of controlled toxic goiter; 15 (75%), 3 (15%) and 2 (10%) patients had total, subtotal and unilateral thyroidectomy respectively. In case of simple goiter; 7 (58.3%) patients had total thyroidectomy, 4 (8.3%) patients had unilateral thyroidectomy and 1 (8.3%) patient had subtotal thyroidectomy.

21 (75%) patients from those with multinodular goiter had total thyroidectomy, 6 (21.4%) had subtotal thyroidectomy and 1 (3.6%) patient had unilateral thyroidectomy.

Abbreviations:

MNG : Mutinodular Goiter.
RLN : Recurrent Laryngeal Nerve.
FNAC : Fine Needle Aspiration Cytology.
U/S : Ultrasound.

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Conclusion: In our study, no major difference was noticed between our surigal management strategy of thyroid diseases and international guidelines. Pre-operative assessement was focused with neck U/S and FNAC being the most important investigations. Choice of the type of operation was based on the type of thyroid disease and the risk of post-operative complications was considered.post-operative complications in the form of RLN injury, hypothyroidism and hypo-parathyroidism were markedly decreased.

Key Words: *Thyroid surgery – Thyroid guidelines – Goiter.*

Introduction

THYROID disorders are 5-10 times less common in men and can present at any age **[1]**. Thyroid surgery has been reported to be the mainstay of the treatment of surgical goiters **[2]**.

Surgical management is recommended for goiters with compressive symptoms. Symptoms of dyspnea, orthopnea, and dysphagia are more commonly associated with goiter, in particular, substernal goiters. Treatment modalities for the surgical management of goiter include lobectomy, sub-total thyroidectomy, near-total thyroidectomy and total thyroidectomy **[3,4]**.

Total thyroidectomy is the gold standard treatment for thyroid cancer, multi-nodular goitre and grave's disease, but with high risk of postoperative complications (transient or permanent hypocalcaemia and recurrent laryngeal nerve palsy) **[5,6]**.

Subtotal thyroidectomy has low incidence of post-operative complications, but recurrence rates as high as 45%. Near-total thyroidectomy is a safe option for various benign thyroid diseases, with both low recurrence and complication rates when compared with total thyroidectomy **[7,8]**.

Most surgeons prefer to perform lobectomy or subtotal thyroidectomy for such benign conditions as nodular goiter, thyroiditis, and hyperthyroidism even when they have to leave grossly abnormal tissue in the neck owing to the complication rate associated with this procedure **[9,10]**.

Subjects and Methods

All patients with thyroid diseases admitted and managed surgically in General Surgery Department in Assiut University Hospital between June 2017 to December 2017.

Exclusion criteria:

Patients who were admitted to General Surgery Department in Assiut University Hospital and not managed surgically during the study period.

Methods: All the patients had been subjected to the following:

1- *Pre-operative assessment:*

- Full clinical assessment.
- Routine laboratory studies.
- Thyroid profile.
- Neck ultrasonography; for detection of gland consistency, retrosternal extension, tracheal deviation, and cervical lymphadenopathy.
- Thyroid scan when indicated; was done for detection of the nature of the nodules (hot-warm-cold).
- Fine Needle Aspiration Cytology (FNAC); when indicated (cold nodule on thyroid scan or dominant one of multi nodular goitre or solitary thyroid nodule).
- Referral to ENT specialist; for indirect laryngoscopy to determine the mobility of the vocal folds.

All the patients were informed that they have to take post-operative medications (hormonal replacement). All patients were informed about all possible complications of thyroidectomy.

2- *Standard guidelines for surgical management of thyroid diseases were reviewed:*

1- *Surgical management of differentiated thyroid cancer: (ATA guidelines 2016):* 85% of patients with differentiated thyroid carcinomas are cured with surgery, radioactive iodine, and TSH suppression.

Thyroid surgery for papillary thyroid carcinoma:

Total thyroidectomy for large tumours or tumours of any size with additional risk factors has been shown to be associated with fewer recurrences and better survival. For patients with tumours 4cm or smaller and no risk factors, hemithyroidectomy without Radioiodine Remnant Ablation (RRA) is reported to have an equally favourable outcome to total thyroidectomy, though all studies are retrospective. This could apply to non-invasive encapsulated (or partly encapsulated) Follicular Variant Papillary Thyroid Cancer (FVPTC).

Patients with “radiation-induced” thyroid cancer appear to present with more advanced disease, but there is conflicting evidence as to whether outcome or cause specific survival is worse or no different from patients without prior irradiation.

Surgery for follicular thyroid carcinoma (excluding oncocytic (Hürthle Cell) follicular carcinoma):

I- If definitive histology reveals a follicular adenoma or a hyperplastic nodule, no further treatment is required.

II- Patients with follicular cancer >4cm tumours appear to have worse prognosis and should be treated with total thyroidectomy.

III- Patients with tumours <4cm, in the absence of other adverse risk factors (age >45 years, widely invasive, lymph node/distant metastases, angioinvasion) appear to have an excellent prognosis. It is recommended that such patients may be treated with hemithyroidectomy.

IV- Patients with tumours >1-<4cm and adverse risk factors (age >45 years, widely invasive, lymph node/distant metastases, angioinvasion) should be treated with total thyroidectomy.

V- Lymph node metastasis from follicular thyroid cancer is found in 1%-8% of patients. If there is pre-operative or intra-operative suspicion of nodal disease, FNAC or frozen section should be performed prior to therapeutic node dissection.

Surgery for oncocytic (Hürthle Cell) follicular carcinoma:

There is conflicting evidence as to whether Hürthle cell carcinoma has equivalent or worse prognosis compared with follicular thyroid cancer, and worse prognosis compared with other types of DTC. Lymph node metastases are reported to occur in 3%-25% of cases, tumour size (>5cm) and older age (>80 years) are risk factors for nodal disease. Hürthle cell tumours are less likely to concentrate I131.

I- Total thyroidectomy is recommended for oncocytic (Hürthle cell) carcinomas >1cm in diameter.

II- Patients with oncocytic (Hürthle cell) microcarcinoma (tumour size <1cm) are reported to have an increased risk of distant metastases and reduced disease specific survival compared with patients with microPTC. Also no survival benefit was identified for patients who underwent total thyroidectomy compared with patients treated with hemithyroidectomy. For patients with oncocytic (Hürthle cell) microcarcinoma personalised decision making about hemi-or total thyroidectomy is recommended.

III- Therapeutic lymph node dissection should be performed in patients with clinical and/or radiological evidence of lymph node involvement and pathological confirmation of metastasis.

Long-term follow-up of differentiated thyroid cancer:

The long-term follow-up schedule of patients with a previous diagnosis of Differentiated Thyroid Cancer (DTC) depends on risk.

I- Patients who have undergone hemithyroidectomy alone because of the low risk of recurrence do not require TSH suppression or long-term follow-up in secondary care. For all other patients, regular follow-up of DTC is necessary particularly for detection of early recurrence, initiation of appropriate treatment, TSH suppression and management of hypocalcaemia.

II- Once the thyroid remnant has been ablated and following dynamic risk stratification, the frequency of attendance will be decided in each case individually:

- Patients with excellent response should be followed 6 monthly for the first year, and annually thereafter.
- Patients with indeterminate or incomplete response should be followed-up more frequently depending on individual need.

III- Support and counseling may be necessary, particularly for younger patients, and in relation to pregnancy.

IV- Follow-up should be lifelong for the following reasons:

- The disease has a long natural history.
- Late recurrences can occur, which can be successfully treated with a view to cure or long-term survival.
- The consequences of supraphysiological levothyroxine replacement (such as atrial fibrillation and osteoporosis) need monitoring, especially as the patient ages.
- Late side effects of I131 treatment may develop, such as leukaemia or second tumours.

V- Low-risk cases who have completed their treatment, are shown to be free of disease at five years and no longer judged to require TSH suppression, may be followed-up at outpatient clinic.

At each visit the following tasks should be completed:

- Patient history should be taken.
- A clinical examination should be performed.

- Adequacy of TSH suppression and possible effects of thyrotoxicosis should be assessed.
- Tg should be measured as a marker of tumour recurrence. TgAb should be measured simultaneously with measurement of Tg.
- The calcium status should be assessed in patients receiving treatment for hypoparathyroidism.

2- *Surgical management of Medullary thyroid cancer (British Thyroid Association guidelines 2015):*

• All patients with or, at risk of MTC should be referred for investigation/surgical treatment to a cancer centre.

• In all cases, a comprehensive family history must be taken to include first- and second-degree relatives to search for features of MTC or other endocrinopathies that may occur in individuals with familial MTC. This includes a history of unexpected sudden death, which should raise the suspicion of occult phaeochromocytoma.

• The initial evaluation of patients with suspected MTC includes US of the thyroid, FNAC and a baseline value for calcitonin, which may confirm the diagnosis and can indicate the likelihood of remission and extent of disease.

• In all cases at least one 24-hour urine sample assayed for catecholamines and nor/metanephrines or plasma nor/metane-phrines is required to exclude phaeochromocytoma, and a serum calcium to exclude hyperparathyroidism. These tests must be performed in all MTC patients prior to neck surgery even in the absence of a positive family history or symptoms.

• In all confirmed cased of MTC, RET mutation analysis to establish the possible genetic basis for the disease within an individual or kindred, should be performed even in the absence of a positive family history.

• Patients with established MTC should undergo a minimum of total thyroidectomy and central compartment node dissection, the inferior limit of the dissection being the inominate artery (levels VI and VII).

• Prophylactic surgery should be offered to disease-free carriers of germ line RET mutations, identified by genetic screening. The possibility of future surgery should be discussed with parents before testing children. In ideal circumstances these individuals would be expected to have C-Cell Hyperplasia (CCH) rather than MTC but in many cases, by the time of presentation the transition from CCH to MTC will have occurred. This will depend upon the genotype and the age of the patient. Basal calcitonin levels indicate the likelihood of MTC ± node metastases. It is important to distinguish the need for therapeutic surgery from prophylactic surgery.

• Lifelong follow-up is recommended.

• If expertise is not available within the primary clinical team, the patient should be offered genetic counseling and referred to the clinical genetics service.

• Patients with no special clinical features should be tested first for RET mutations in exons 10 and 11; if these are negative, for exons 13-16. Failure to screen exons 13-16 constitutes an incomplete test.

3- *Surgical management of anaplastic thyroid cancer (British Thyroid Association guidelines 2015):*

• Initial assessment should focus in identifying the small proportion of patients with localised disease and good performance status, that may benefit from surgical resection and other adjuvant therapies.

• The surgical intent should be gross tumour resection and not merely an attempt at debulking.

- Tumours that are small and intra-thyroidal or involve easily excised structures should be treated by total thyroidectomy, therapeutic lymph node dissection and where extra-thyroidal invasion is present, en bloc resection.
- Consideration of elective tracheostomy may be necessary in cases of advanced local disease. Although this procedure may avoid asphyxia and avert impending death, it may also prolong suffering and is often not in the patient's best interests.
- If a patient is being considered for radical surgery, EBRT or chemoradiotherapy and has swallowing difficulties, consideration should be given to gastrostomy placement.

4- *Surgical management of hyperthyroidism (ATA guidelines 2016):*

• Surgical options for those with hyperthyroidism include hemithyroidectomy for toxic adenoma or total thyroidectomy for toxic multinodular goiter or Graves disease.

• Patients who may benefit from surgery include those who cannot tolerate or are non-compliant with antithyroid medication, or have absolute or relative contraindications or aversion to radioactive

iodine (RAI). Individuals desiring return to normal thyroid func-tion sooner than can be achieved with RAI may also consider thyroidectomy.

• It is recommended that before surgery hyperthyroid patients receive antithyroid medication, propanolol, and potassium iodide especially for patients with Graves disease. The patient should be rendered euthyroid and have a resting heart rate less than 80. Potassium iodide or Lugol solution has the potential benefit of decreasing the thyroid gland vascularity, and minimizing glandular hemorrhage during surgery. This can be administered in 1 to 2 lingual drops 7 to 10 days before surgery. Occasionally, corticosteroids may be necessary in medically refractory Graves disease patients.

5- Surgical management of substernal goiter (British Thyroid Association guidelines 2015):

It is generally accepted that most benign SSGs can be removed through a cervical incision. For the remaining lesions not amenable for removal through a cervical approach, the authors use a ministernotomy, which is performed in conjunction with thoracic surgery. They involve the thoracic surgery service pre-operatively for possible sternotomy on patients with posterior mediastinal goiters, those goiters with extension below the level of the aortic arch, and known malignancy in the chest. In addition, a sternotomy has been recommended for the extraction of ectopic goiters.

Anatomically, one must recognize the potential anterior displacement of the RLN by a posterior mediastinal goiter. Prior knowledge of this allows the surgeon to anticipate the location of the RLN during surgical dissection. Additional surgical exposure is gained by positioning the patients' head in neck extension allowing for a cephalad displacement of the SSG. This facilitates improved delivery and visualization of the goiter.

6- Surgical management of nodular goiter (ATA guidelines 2017):

For patients with associated risk factors, the ATA suggests thyroid lobectomy as an initial treatment. Following lobectomy, intraoperative frozen histopathologic analysis positive for carcinoma requires a total thyroidectomy and possible central node dissection if gross nodal metastasis is identified. If the pathologist defers diagnosis until permanent sectioning, all patients with malignancy except those with a single focus or subcentimeter disease should undergo completion thyroidectomy. Completion thyroidectomy is usually performed in the first month following the initial procedure.

Scenarios that may benefit from a total thyroidectomyrather than lobectomy include (1) individuals with tumors greater than 4cm and cytologic atypia, (2) FNAB "suspicious for papillary carcinoma," (3) patients with family history of thyroid carcinoma, and (4) childhood radiation exposure caused by increased risk of malignancy in these clinical settings.

Post-operative assessment: During the post-operative period all patients were carefully assessed for the clinical symptoms and signs of complications especially:

- *Hypoparathyroidism:* Diagnosed by symptoms and signs of hypocalcaemia including numbness, parasthesia and positive Chvostek sign and confirmation by an assay of serum calcium and phosphorus.
- *Recurrent laryngeal nerve injury:* Was checked by routine inspection of vocal folds during recovery from anaesthesia or indirect laryngoscopy in case of voice abnormalities, dyspnea or stridor post-operatively.
- *Post-operative bleeding:* Assessed through the drain.
- Seroma and wound infection.
- Hypothyroidism.
- Hospital stay.

Results

Table (1): Demographic data of the studied patients.

Variables	n=60
Age (years):	39.18±11.75
Range	(15-63)
Sex:	
Male	11 (18.3%)
Female	49 (81.7%)

Table (2): History of thyroid diseases and thyroid therapy of the studied patients.

	Frequency (percentage)
History of:	
Toxic manifestation	17 (28.3%)
Anti-thyroid medication	15 (25%)
Iodine deficiency	9 (15%)
Endemic goiter	7 (11.7%)
Family history of thyroid disease	5 (8.3%)
Neck irradiation	0
Previous thyroid operation	0

Table (3): Vital signs in the studied patients.

	Mean ± SD
Heart rate (beat/ minute)	78.78±7.03
Temperature (°C)	370.03±0.25
Systolic blood pressure (mmHg)	123.45±15.09
Diastolic blood pressure (mmHg)	81.09±6.34
Respiratory rate (cycle/ minute)	19.91±0.92

Table (4): Thyroid examination in the studied patients.

	Frequency (percentage)
Inspection:	
Unilobar thyroid enlargement	12 (20%)
Bilobar thyroid enlargement	48 (80%)
Palpation:	
- Goiter	
Diffuse	4 (6.7%)
Nodular	56 (93.3%)
Solitary	13 (21.7%)
Multinodular	43 (71.7%)
- *Consistency:*	
Soft	5 (8.3%)
Firm	55 (91.7%)

Table (5): Pre and post-thyroidectomy thyroid functions.

	Pre-thyroidectomy	Post-thyroidectomy	*p*-value
TSH	1.26±0.76	4.31±1.66	0.00
Free T3	1.96±0.52	1.01±0.36	0.01
Free T4	0.93±0.23	0.61±0.21	0.00

Table (6): Findings on neck ultrasonography of the studied patients.

Findings	Frequency (percentage)
Multiple nodules:	
Right lobe	4 (6.7%)
Left lobe	0
Bilateral	34 (56.7%)
Single nodule:	
Right	12 (20%)
Left	4 (6.7%)
Diffuse thyroid enlargement	6 (10%)
Presence of lymphadenopathy	11 (18.3%)
Presence of retrosternal extension	4 (6.7%)

Table (7): Findings of fine needle aspiration cytology in the current study.

	Frequency (percentage)
Not done	19 (31.7%)
Simple nodular goiter	20 (33.3%)
Colloid goiter	11 (18.3%)
Follicular adenoma	8 (13.3%)
Hyperplasia	2 (3.3%)

Table (8): Types of thyroidectomy in the current study.

Types of thyroidectomy	Frequency (percentage)
Total thyroidectomy	43 (71.7%)
Subtotal thyroidectomy	10 (16.7%)
Unilateral lobectomy and isthmusectomy	7 (11.7%)

Table (9): Histopathological findings in the study.

Findings	Frequency
Colloid goiter	21 (35%)
Hyperplasia	17 (28.3%)
Follicular adenoma	7 (11.7%)
Multinodular goiter	4 (6.7%)
Simple nodular goiter	3 (5%)
Fibroepithelial nodules	3 (5%)
Controlled toxic goiter	2 (3.3%)
Hashimoto thyroiditis	2 (3.3%)
Papillary carcinoma	1 (1.7%)

Table (10): Post-operative complications in the current study.

Complications	Frequency (percentage)
Hoarseness of the voice	18 (30%)
Choking	16 (26.7%)
Injury of recurrent laryngeal nerve	5 (8.3%)

Table (11): Post-operative complications based on type of thyroidectomy in the current study.

Complications	Total (n=43)	Suntotal (n=10)	Unilobar (n=7)
Hoarseness of the voice	13 (30.2%)	4 (40%)	1 (14.3)
Choking	12 (27.9%)	4 (40%)	0
Injury of recurrent laryngeal nerve	5 (11.6%)	0	0

Table (12): Duration of surgeon experience and incidence of complications.

Chocking	Hoarseness of voice	RLN injury	Frequency (percentage)	Duration of experience
10 (29.4%)	12 (35.29%)	3 (8.8%)	34 (56.7%)	2-5 years
5 (31.4%)	4 (25%)	2 (12%)	16 (26.7%)	5-10 years
2 (20%)	2 (20%)	0 %	10 (16.7%)	>10 years

Table (13): Types of goiter based on type of thyroidectomy.

Type of goiter	Neck US	FNAC	Type of thyroidectomy
• Controlled toxic goiter (n=20)	100%	8 (40%)	• 15 (75%) had total thyroidectomy • 3 (15%) had subtotal thyroidectomy • 2 (10%) had unilateral thyroidectomy
• Single nodular goiter (n=12)		12 (100%)	• 7 (58.3%) had total thyroidectomy • 1 (8.3%) had subtotal thyroidectomy • 4 (33.3%) had unilateral thyroidectomy
• Multinodular goiter (n=28)		21 (75%)	• 21 (75%) had total thyroidectomy • 6 (21.4%) had subtotal thyroidectomy • 1 (3.6%) had unilateral thyroidectomy

Discussion

Surgical management is recommended for goiters with compressive symptoms. Symptoms of dyspnea, orthopnea, and dysphagia are more commonly associated with thyromegaly, in particular, substernal goiters.

Surgey is also recommended for bad cosmosis (on patient demand).

Pre-operative assessement with neck ultrasound, thyroid function tests, laryngoscopy (for assessement of vocal cord mobility), and FNAC (if of suspicious criteria) is necessary.

Pre-operative Fine Needle Aspiration Cytology (FNAC) was done in 41 (68.3%) patients.

Treatment modalities for the surgical management of goiter include lobectomy, sub-total thyroidectomy, near-total thyroidectomy and total thyroidectomy.

Total thyroidectomy was associated with more post-operative complications and less reccurance rates than subtotal thyroidectomy and unilateral lobectomy. Most of the complications were transient and showed dramatic response with medical treatment.

Post-thyroidectomy complications were found to be associated with the surgeon's age of experience.

All patients should receive post-thyroidectomy thyroid replacement therapy in the form of L-thyroxine (except those who were subjected to unilateral lobectomy).

Post-operative assessement should include vocal cord mobility assessement, serum calcium measurement and regular follow-up of thyroid function tests.

Follow-up thyroid function tests have to be performed regularly and adjustment of replacement therapy must be done accordingly.

Histopathological examination post-thyroidectomy is mandatory.

When comparing our surgical management strategy of thyroid diseases with standard guidelines, we noticed that:

1- *Regarding controlled toxic goiter:*

- Neck ultrasound was done in 100% of cases with no difference with guidelines.
- FNAC was done in 40% of cases (only suspicious cases as guidelines had recommended) with difference with guidelines about 20%. This difference is due to many causes as; FNAC is expensive and not available at our hospital for free.
- *Regarding type of operation performed:*
  - 75% had total thyroidectomy.
  - 15% had subtotal thyroidectomy.
  - 2% had unilateral thyroidectomy and isthmusectomy.
  - 0% had near-total thyroidectomy.

No difference with standard guidelines regarding type of operation was noticed except that near-total thyroidectomy was not performed in any case.

2- *Regarding solitary nodular goiter:*

- Neck ultrasound was done in 100% of cases with no difference with guidelines.
- FNAC was done in 100% of cases with no difference with guidelines.
- *Regarding type of operation performed:*
  - 58.3% had total thyroidectomy.
  - 8.3% had subtotal thyroidectomy.
  - 33.3% had unilateral lobectomy.

Difference with guidelines was found in 55% of cases in whom total or subtotal thyroidectomy was performed in spite that unilateral lobectomy was the recommemded operation by standard guidelines. This difference was mainly due to the fair of histological surprise post-operatively (no intra-operative frozen section biopsy is available at our hospital), and need for completion thyroidectomy which is very difficult and risky.

3- *Regarding multi-nodular goiter:*

- Neck ultrasound was done in 100% of cases with no difference with guidelines.
- FNAC was done in 75% of cases (suspicious cases) no difference with guidelines.
- *Regarding type of operation performed:*
  - 75% had total thyroidectomy.
  - 21.4% had subtotal thyroidectmoy, and
  - 3.6% had unilateral lobectomy.

No major difference with standard guidelines was noticed.

4- *Regarding malignant goiter:*

Only one case of malignant goiter was encountered during the study period and was diagnosed

as post-operative histological surprise, so no comparison with standard guidelines is possible.

Conflicts of interest:

No conflict of interest has been declared.

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التقييم الإستقبالى لإستراتيجية المعالجة الجراحية لآمراض الغدة الدرقية فى مستشفيات جامعة آسيوط

إن الهدف من هذه الدراسة هو مقارنة إستراتيجية المعالجة الجراحية لآمراض الغدة الدرقية فى قسم الجراحة فى مستشفيات جامعة آسيوط بالمعايير والإرشادات العالمية، وإقتراح حلول لتطوير طريقة المعالجة الجراحية لآمراض الغدة الدرقية لتقليل نسبة الوفيات والإعاقة الناتجة عن هذه الآمراض وجعلها تتناسب مع معايير ونسب الشفاء العالمية.

تمت الدراسة على ٦٠ حالة (وهى كل الحالات التى تعانى من آى نوع من آمراض الغدة الدرقية والتى تمت معالجتها بقسم الجراحة خلال ستة آشهر إبتداءا من يونيه ٢٠١٧ وحتى ديسمبر ٢٠١٧). تراوحت آعمار المرضى فى هذه الدراسة ما بين ١٥–٦٣ عاما. ٤٩ مريض كانوا من الإناث و١١ مريض فقط من الذكور آى آن نسبة الإناث إلى الذكور ما يقارب ١:٤.٤٥.

الفحص الإكلينيكى:

- كان معدل نبضات القلب تتراوح ما بين ٧٠–٩٠ دقة فى الدقيقة.
- ٩ من المرضى كانوا يعانون من ضغط الدم المرتفع.
- ٤٣ مريض كان يعانى من تضخم عقدى متعدد للغدة الدرقية من الجانبين الآيمن والآيسر.
- ٤ من المرضى كانوا يعانون من تضخم منتشر (مستوى) للغدة الدرقية والذى كان يعزى سببه فى آغلب الحالات إلى مرض جريفز.
- ١٣ مريض كانوا يعانوا من تضخم عقدى للغدة الدرقية على جانب واحد.

فحوصات ما قبل الجراحة:

- خضع كل المرضى إلى آشعة تليفزيونية على الرقبة والتى آوضحت آن:
  - ٣٨ مريض كان يعانى من تضخم عقدى متعدد للغدة الدرقية على الجانبين.
  - ١١ مريض كان يعانى آيضا من تضخم بالغدد الليمفاوية.
  - ١٦ مريض كانوا يعانوا من تضخم عقدى آحادى للغدة الدرقية (١٢ منهم كان التضخم على الناحية اليمنى).
  - ٦ من المرضى كانوا يعانوا من تضخم منتشر (مستوى) للغدة الدرقية.
- تم آخذ عينة بالإبرة من الغدة الدرقية لتحليل الخلايا لما يقرب ٤١ مريض لنجد الآتى:
  - ٢٠ مريض يعانى من تضخم عقدى بسيط للغدة الدرقية.
  - ١١ مريض يعانى من تضخم غروانى للغدة الدرقية.
  - ٨ مرضى يعانوا من ورم جريبى للغدة الدرقية (قد يكون حميد آو خبيث).
  - مريضان كانا يعانيان من تضخم بالغدة الدرقية نتيجة لزيادة عدد الخلايا.
  - خضع كل المرضى لتحليل وظائف الغدة الدرقية والتى آظهرت تحسن واضح بعد إجراء الجراحة.

نوع العملية الجراحية والمضاعفات الناتجة عنها:

- خضع ٤٣ مريض لإستئصال كلى للغدة الدرقية، بينما خضع ١٠ مرضى لإستئصال غير كامل للغدة الدرقية، آما فيما يخص الإستئصال النصفى للغدة الدرقية فقد تم إجرائه فى ٧ مرضى.
- تبين آن المضاعفات فى حالة الإستئصال الكلى آكثر عنها فى الإستئصال الجزئى والنصفى، ولكن إحتمالية عودة المرض بعد الجراحة كانت آقل مع الإستئصال الكلى للغدة الدرقية.
- تعرض العصب الحنجرى المرتجع إلى الإصابة فى ٥ مرضى.
- تعرض ١٨ مريض لبحة ف الصوت.
- آغلب هذه المضاعفات كانت مؤقتة وتحسنت مع العلاج.