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REVIEW OF (50) GOITER CASES ADMITED TO MY SURGICAL WARDS FROM OCTOBR 2010 TO JULY 2018

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ABSTRACT

Goiter is the enlargement of the thyroid gland, many survys of thyroid enlargement have been vague in difining enlargement. This study was carried out with the objective Goiter is the enlargement of the thyroid gland in Al-Sadir city in Baghdad. This study was carried out in 2010–2018 on a sample of 50 Cases- consecutive patients presented with thyroid swelling with or without other constitutional symptoms like dyspnea, dysphagia, pain over the gland, palpitation, nervousness, and excessive sweating were considered for this study. Shows that the peak age incidence of thyroiditis is between (10-30) years, diffuse goiter is between (10-40) years, benign tumor is between (20-40) years, multinodular goiter and discrete nodule are between (20-50) years), and malignant tumors had two age incidences, the first is between (30-50) years, and the second is between (60-70) years.

KEYWORDS: Surgery, Goiter, iodide, Iraq.

INTRODUCTION

Goiter is the enlargement of the thyroid gland, many survys of thyroid enlargement have been vague in difining enlargement. Kilpatrick describe it as visible enlargement to the trained observer and the description suggest that this includes any deviation from normal contour of the neck seen at rest or on swallowing.[1]

Dunn and Haar categorize goiter into grades as follow:
Grade 0 = no goiter.
Grade 1A = palpable goiter.
Grade IB = goiter visible when the neck is fully extended.
Grade 2 = visible goiter or there is nodular ulteration when the neck is in the natural position
Grade 3 = visible goiter from considerable distance.[2]

Thyroid enlargement is given the following classification: (Matheson and Krukowski).[3]

1. Simple goiter (euthyroid)
- Diffuse hyperplastic goiter
- Multinodular goiter
- Simple nodule.
2. Toxic goiter
- Diffuse (Grave's disease)
- Multinodular toxic goiter
- Toxic adenoma
3. Neoplastic
- Benign
- Malignant
4. Inflammatory
- Autoimmune (Hashimoto's) thyroiditis
- Infective either acute (bactrial and viral) or chronic (tuberculous and syphlitic)
- Granulomatous (de Quervian's thyroiditis)
- Others (Like amyloid)

Goiter is an important and common clinical condition which usually demands surgical relief. The commonest form of goiter is the simple goiter. The commonest aetiological factor for this goiter is avery low iodide content in the water and food (daily requirement of iodide is aboute 100-125 ug).

Iraq is one of the countries where goiter is very common, the prevalence of goiter was found more in the north (50-62%) in Ninawa) than in the center (20-36%) in Baghdad and this more than in the southern region (2-14%) in Basrah (Demarchi M.).[4]

In comparism with that the prevelence of simple goiter was found (36%) in Turkey, (30%) in Iran (Grant Bj.) (5) (15%) have palpable goiter in United States, (25-33%) of population in iodine deficient areas of Italy was found to have nodular goiter.

In Croatia the prevelence flectuate between (8-35%) (Wang C, and Crape LM.).[6]

The clinical presentation of thyroid enlargement usually in the form of palpable and often visible swelling in the neck over the thyroid gland which may be associated with pressure symptoms (difficulty in respiration and dysphagia), pain, and symptoms of over activity in toxic goiter.

The physical finding usually in the form of solitary nodule, diffuse, or multinodular goiter, involving one lobe or whole gland. The goiter differs greatly in consistancy, size, shape, and mobility according to the pathology. Tenderness in thyroiditis, lymph nodes enlargement in advanced melignancy can be elected, and signs of over activity in toxic goiter.

Although the diagnosis of goiter is usually stright forward but some investigation may be required to highlight the problem, thyroid function test (commonly in the form of T3, T4, TSH) may be required to determine functional state of thyroid (hypothyroidism, euthyroid, or hyperthyroidism).

Ultrasonography of thyroid is an accessable investigation to most of doctors and it is noninvasive and relatively cheap, it confirms solid and cystic lesion and can be useful in differentiating single nodule from multinodular goiter.

Fine Needle Aspiration and Cytology (FNAC) is simple and readily performed in outpatient department.

Thyroid Scan categorized the swelling as hot (over active), warm (active), and cold (under active). About (80%) of discrete swelling are cold but only (20%) proved to be malignant (Matheson and Krukowski).[3]

Other investigations like CBP, ECG, CXR, Thyroid antibody titers are all useful in goiter patients.

The treatment of goiter are individualized according to the cause. In general indications for surgery are: -

1. To remove benign and malignant tumors.
2. To alleviate pressure symptoms atributable to the thyroid.
3. As a therapy for thyrotoxicosis when other modalities of treatment are in available or contraindicated.
4. Multinodular goiter.
5. To establish the diagnosis of suspicious mass.
6. For cosmesis.
7. Patient wishes.

The surgical treatment of goiter are: -

1. Subtotal lobectomy (Lumpectomy).
2. Total lobectomy (right or left hemithyroidectomy).
3. Subtotal thyroidectomy.
4. Total thyroidectomy.
5. Total thyroidectomy with cervical lymph nodes dissection.

PATIENTES AND METHODES

Between October 2010 and July 2018, consecutive patients presented with thyroid swelling with or without other constitutional symptoms like dyspnea, dysphagia, pain over the gland, palpitation, nervousness, and excessive sweating were considered for this study.

These patients were admitted to the surgical ward in the Governmental and Private hospitals in Baghdad, full history and physical examination (which includes general examination, examination of thyroid gland) was done.

The available general investigations was done including (Hb, ECG, CXR). The specific investigations including (thyroid function test, ultrasound of thyroid gland, fine needle aspiration cytology) were done when indicated. Thyroid scan and thyroid antibody titer where not done because lack of facilities.
Types of operations and post-operative complications and histopathology were noted.

Many patients who did not have histopathological report were discarded from this study, also those patients who did not under gone surgery.

RESULTS

Table 2: Distribution of patients according to age and sex.

Age	Male	Female	Both M+F	
			NO.	%
0-10 years	-	-	-	-
11-20 years	-	4	4	8
21-30 years	3	7	10	20
31-40 years	1	21	22	44
41-50 years	1	12	13	26
51-60 years	-	-	-	-
61-70 years	-	1	1	2
Total	5	45	50	100

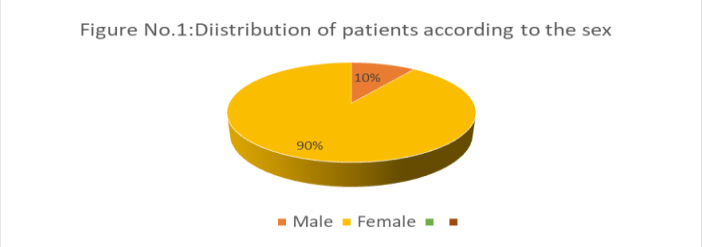


Table 2: The chief complint and presentation of patients.

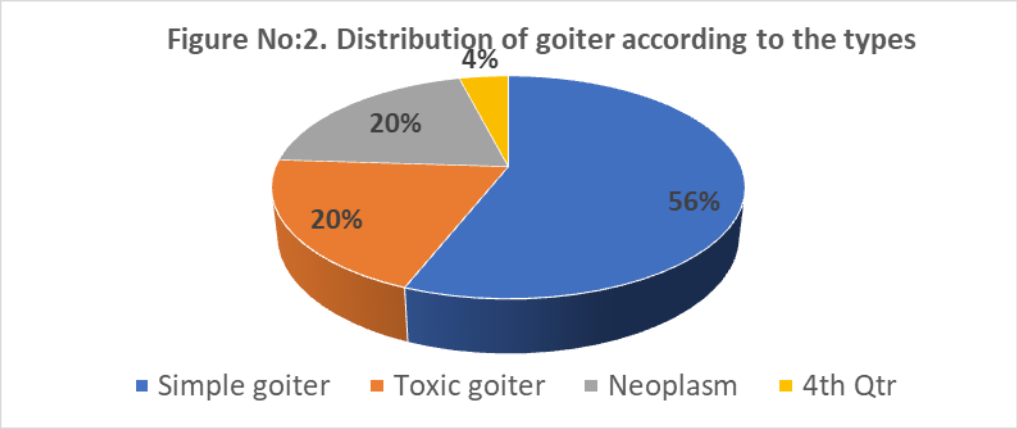
Presentation	No.	%
Swelling in the neck	48	96
Respiratory difficulty	18	36
Dysphagia	20	40
Pain over the gland	7	14
Palpitation	13	26
Nervousness	10	20
Excessive sweating	13	36
Preverence for cold	9	18
Increased apitite	10	20
Decreased weight	11	22

Table 3: Distribution of patients according to the physical finding.

Physical finding		No.	%
	Diffuse goiter	12	24
pattern	Multinodular goiter	25	50
	single nodule	13	26
	Bilateral enlaegement	32	64
Site	Right lobe	15	30
	left lobe	3	6
	Rapid pulse	10	20
Signs of	Tremor	10	20
toxicity	Bruit	4	8
	Eye changes	7	14
	Lymph node	3	6
Other sign	Tenderness	2	4
	Pigmentation	2	4

Table 4: Distribution of patients according to the types of goiter.

The goiter		patients	%
	Diffuse	5	10
Simple	Multinodular	15	30
goiter	Simple nodule	8	16
	Total	28	56
	Grave's disease	5	10
Toxic	Multinodular	4	8
goiter	Toxic adenoma	1	2
	Total	10	20
	Benign	2	4
Neoplasm	Malignant	8	16
	Total	10	20
	Hashimoto's	2	4
Thyroiditis	others		
	Total	2	4



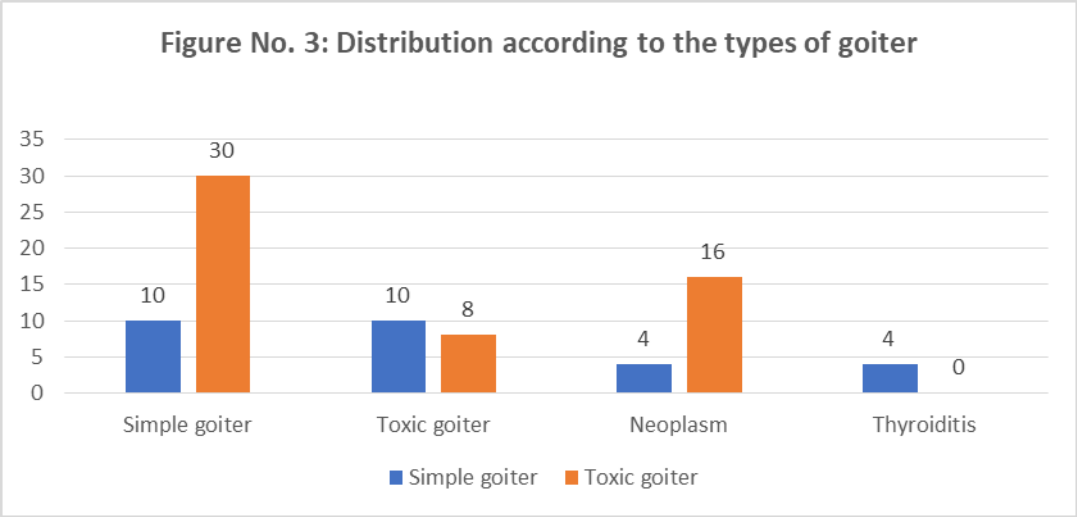
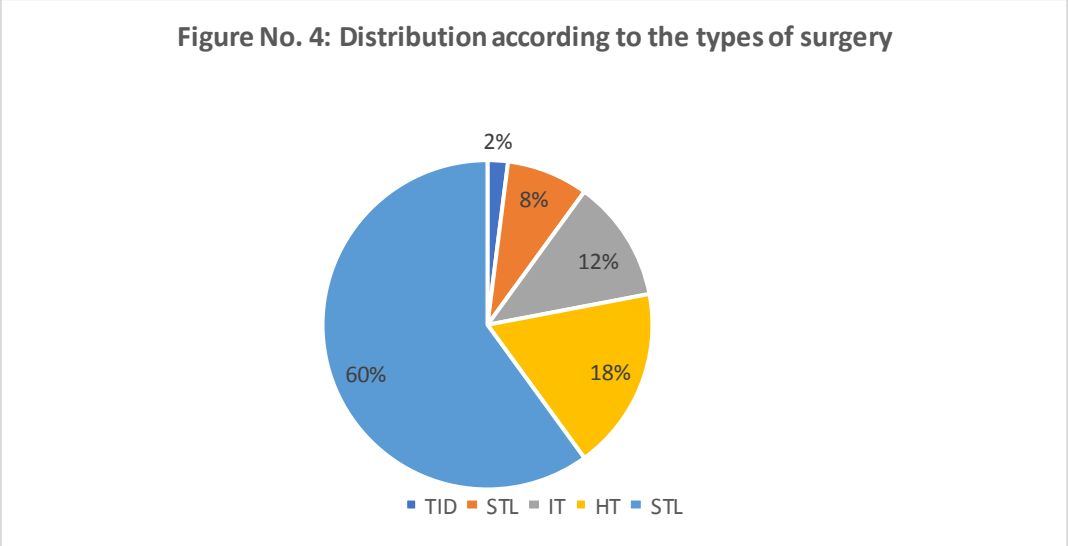


Figure 3: Distribution according to the types of goiter.

This figure shows that (10%) of simple goiter cases were diffuse, (30%) were multinodular, and (16%) were simple nodule. Of those cases with toxic goiter (10%) were found to have Grave's disease, (8%) with multinodular goiter, and (2%) with toxic adenoma. (16%) of neoplastic goiter were malignant, and (4%) were benign. Hashimoto's thyroiditis was found in (4%) of the cases.

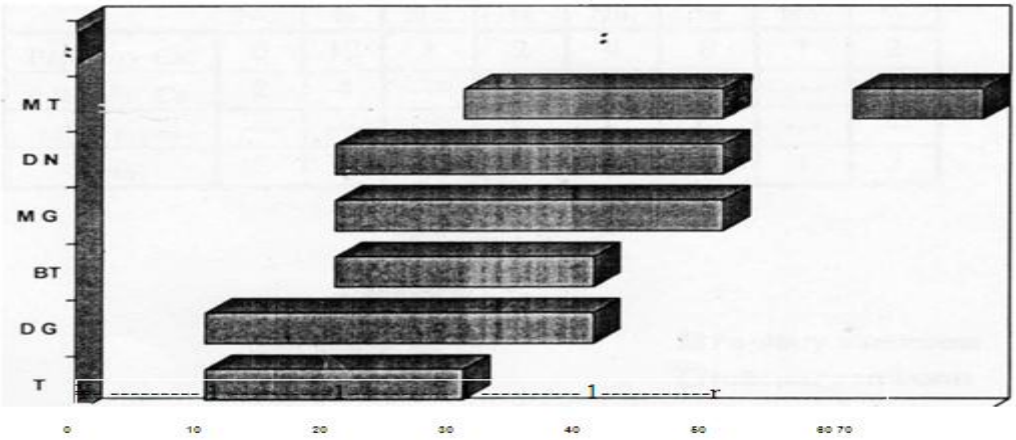
Table 5: Causes of goiter and types of surgery.

Goiter		No.	STL		HT		ST		TT		TTD	
			no.	%	no.	%	no.	%	no.	%	no.	%
Simple goiter:	diffuse	5					5	10				
	Multinodular	15	—	—	2	4	12	24	1	2	—	—
	simple nodule	8	4	8	4	8						
	Total	28	4	8	6	12	17	34	1	2	—	—
Toxic goiter	Grave's dis.	5					5	10				
	Multinodular	4					3	6	1	2	—	—
	toxic adenoma	1	—	—	1	2						
	Total	10	—	—	1	2	8	16	1	2	—	—
Neoplasm	Benign	2	—	—	2	4						
	Malegnant	8					3	6	4	8	1	2
	Total	10	—	—	2	4	3	6	4	8	1	2
Thyroiditis	Hashimoto's	2					2	4				
	Others											
	total	2					2	4				
Results		50	4	8	9	18	30	60	6	12	1	2



STL=Subtotal Lobectomy HT = Hemithyroidectomy ST = Subtotal thyroidectomy TT = Total thyroidectomy TTD = Total thyroidectomy……..y with cervical lymph node dissection

Figure No. 4: Distribution according to the types of surgery



T=Thyroiditis
DG=Diffuse goiter
MG=Multinodular goiter
DN= Discrete nodule
MT=Malignant tumor

Figure 5: Peak age incidence of different types of goiter.

Shows that the peak age incidence of thyroiditis is between (10-30) years, diffuse goiter is between (10-40) years, benign tumor is between (20-40) years, multinodular goiter and discrete nodule are between (20-50) years), and malignant tumors had two age incidences, the first is between (30-50) years, and the second is between (60-70) years.

Table 6: Histopathological finding compaired to preoperative diagnosis of malignant tumors

Histopathological finding	Solitory nodule		Multinodular goiter		Diffuse goiter			
	No.	%	No.	%	No.	%	No.	%
Papillary Ca.	6	12	1	2	4	8	1	2
follicular Ca.	2	4	___	—	2	4	—	---
other types	—	—	—	—	—	—	—	—
Total	8	16	1	2	6	12	1	2

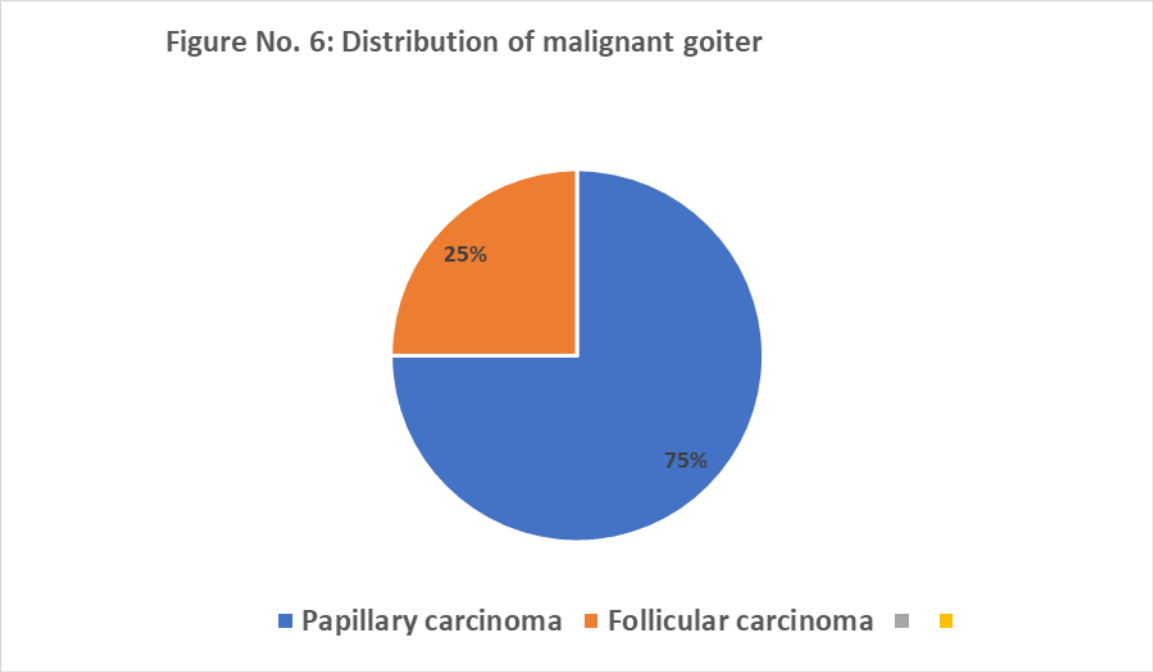


Figure 6: Distribution of malignant goiter.

The results show that out of 50 cases of goiter, 45 were females (90%), 5 were males (10%) (Fig. No. 1). of all patients (44%) were in the fourth decade of life, (26%) in the fifth decade, (20%) in the third decade, (8%) in the second, and only (2%) in the seventh decade (table No. 1). of 50 cases, 48 (96%) were presented with swelling in the neck (Table No. 2). On examination 25 cases (50%) were multinodular goiter, 12 cases (24%) were diffuse goiter and 13 cases (26%) were single nodule. Bilateral goiter was found in 32 cases (64%), right lobe enlargement in 15 cases (30%), and left lobe in 3 cases (6%). Signs of toxic goiter (rapid pulse and tremour) was found in 10 cases (20%), eye changes in 7 cases (14%), lymph nodes enlargement present in 3 cases (6%) (Table No. 3).

The goiter was simple in 28 cases (56%), as shown in (table 4), toxic goiter was found in 10 cases (20%), neoplastic goiter in 10 cases (20%), and thyroiditis was found in only 2 cases (4%).

Types of surgery (Table No. 5) was subtotal thyroidectomy in (60%) of the cases, hemithyroidectomy in (18%), Total thyroidectomy in (12%), subtotal lobectomy in (8%), and total thyroidectomy with lymph node dissection in (2%).

Histopathologicaly diagnosed papillary carcinoma was in 6 cases (Table No. 6), 4 of them was found in multinodular goiter, 1 in diffuse goiter, and 1 was solitory nodule. While follicular carcinoma was 2 both of them were found in multinodular goiter cases.

The percentage of papillary carcinoma was (75%), while that of follicular carcinoma was (25%) (Fig. No. 6).

DISCUSSION

From this study, we found that the goiter is commoner in the females than in the males in a ratio of (9-1), this finding coincide with a study done in the college of medicine, Mustansiriya University by M. H. Al-Alwan .(7) and it is very close to a ratio mentioned in the text book (8-1) E. L. Kaplan.[8]

About two third of the cases (72%) presented after the age of (30 years) while (66%) of the cases in a study done in Mustansiriya Medical College were presented below the age of (30 years), this may explaned on two basis:

First: most of patient neglect their goiter until it reaches large size so they presented later.
Second: the goiter is sporadic rather than endemic Matheson and Krukowski.[3]

The most common presenting feature of goiter patients is swelling in the neck that move with swallowing (96%), the goiter was multinodular in half of the cases, involving both lobes in (64%) these results coincide with text book.[3,8] but of those involving one lobe, the right lobe involved in (30%), while the-'left lobe in (6%).

This study revealed that the most common type of goiter was simple goiter (56%) of the cases, mainly in the form of simple multinodular goiter (30%), while simple colloid nodule was found in (16%), and (10%) were diffuse goiter. The second most common variaty was toxic goiter in (20%) of cases these are coincide^with text books.[3,8]

Follicular adenoma was found in (4%), and Hashimoto's thyroiditis was found in (4%) of the cases which is the least common type of goiter.

Histological examination revealed that 8 cases (16%) were malignant goiter (table no. 5) of them 6 cases were papillary carcinoma, 2 cases were follicular carcinoma (in a ratio of 3-1) (figure no. 6). In comparism with text book the papillary carcinoma forming two thirds of malignat tumours of thyroid gland, while follicular carcinoma forming one quarter of them. (E.L.kaplan)[8] these result showes that there is increase in the cases of papillary carcinoma in our series .

In other studies, abroad the incidence of malignancy in goiter patients was found (3.5) in United States, (4.25%) in Birmingham hospitl, England, and rising from (10%) up to (14%) during the period from (1990-1993) in Italy. Wang-c (6) and Picchi P.[9]

Six cases of malignant goiter out of eight were found on hisological examination of a cases of miltinodular goiter (table no. 6), one in diffuse goiter, and one in solitory nodule. This gives an apportunity to our surgeons to be more conservative in selecting patients with solitory thyroid nodule for surgical treatment (Thony E. Young).[10]

As the surgical treatment is concerned there were (60%) of the patients needed subtotal thyroidectomy, (18%) needed hemithyroidectomy, (12%) needed total thyroidectomy, (8%) needed subtotal lobectomy, only one patient (2%) was needed total thyroidectomy with cervical lymph nodes dissection, it was a case of lateral aberrant thyroid due to occult papillary carcinoma proved preoperatively by cervical lymph node biopsy.

Early postoperative complications seen in the following table (table no. 7) in comparism with two studies done in Al-Yarmouk teaching hospital, Baghdad, (M. A. Al-Alwan),[7] and odense university hospital, Denmark, (Gaversen HP.)[10]

Complication	this study		Al-Yarmouk %	Odense %
	No.	%		
Haemorrhage	2	4	4	0.5
Wound infection	3	6	4	0.3
Parathyroid insuficincy	___	—	—	0.6
Respiratory obstruction	1	2	2	—
R. L. nerve paralysis	—	—	2	2
Total	6	12	12	3.4

The percentage of hemorrhage and infection in our series is nearly similar to the study done in Al-Yarmouk Teaching Hospital But it is higher than in the Odense university hospital. This is expected because lack of facilities and shortage of drugs our country.

On the other hand (2%) of cases in Al-Yarmouk Teaching Hospital and Odense University Hospital had recurrent laryngial nerve paralysis in addition to (0.6%) in Odense University Hospital had parathyroid insufficiency. while in our series there is no RLN paralysis and no parathyroid insufficiency.

These results indicate that in our hospital there is perfect preoperative care and adequate surgical technique.

CONCLUSIONS

1. Goiter is commoner in females than males in ratio of (9/1).
2. Goiter in Baghdad city is more prevalent in the fourth and fifth decades of life, indicating that its sporadic rather than endemic.
3. A part from unsightly swelling of neck, other symptom like dysphagia, repiratory difficulty, pain over the gland, tremors, palpitation, loss of weight, and other symptoms might bring the patient to seek medical advice.
4. On the basis of our study, the goiter is mainly multinodular, commonly affecting both lobes. But it may affect one lobe mainly right lobe. So, we suggest further studies to clarify why it affect one lobe, and why the right lobe mainly affected.
5. (16%) of the cases in this series had malignant goiter, this percentage is higher than the other studies in the other parts of the world, this propably may be due to effects of environmental pollution and war stress caused by the American aggression on our country in 2003 and the continued unstable condition. This need further study to clarify that.
6. In this study the malignant goiter found frequently at the histopathology of patient operated upon for benign thyroid disease so we suggest that histopathological studies should be done for every patient subjected to thyroid surgery. This is unfortunately not the rule.
7. This thesis rises the need for further studies to clarify the problem of goiter in Iraq, and to plan the necessary measures for prevention and treatment.

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