

Histopathological Characters Of Solitary Thyroid Nodule In Patient Undergoing Surgery At 3 Years (2015 - 2017) In Al - Nasiriyah City

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Abstract

Background: The morbidity of solitary thyroid nodule to be benign or malignant affecting different age group and gender are generally not well established need to more focus about details histopathology and identified the characters of histopathology.

Aim of study: To know histopathological characters of solitary thyroid nodule in patients undergoing in Nasiriya city at (2015_2016_2017).

Patients and method: This cross-sectional analytical study was carried out at the department of general surgery, Al_Hussain teaching hospital. It is retrospective study during 3 years ago (2015,2016,2017).

The study include the collection samples of known cases of solitary thyroid nodule from operation room in ,Al_Hussain teaching hospital for 3 years about 162 cases and send it into histopathology in lab. In same hospital in Nasiriya city about 360 km south Baghdad the capital, and take the result of histopathology from lab. In same hospital.

The study include different ages All age groups were included in this study. Classified into :

- Child and adolescence less than 18 years old
- Young adult(18_45) years old
- Old adult (45_65) years old
- Elderly (65years old and above)

And both sexes (male and female).

Results:

A total samples collection to study are 162 of patients with STN during three years (2015-2017),The female (157) and the male(5).

majority of the studied population were female (96.9%), and most of them were at age of 18-45 years (67.9%), followed by the old adult 29.6%, while the other groups were having an equal percent of 1.25%., a studied total number were attending the Al-Hussien teaching hospital mostly coming at the 2016 followed by 2017 then 2015. were most of them at the 2016 (41.1%), followed by 2017 (39%), while the 2015 were the smallest proportions of the contributors.

most of the presented cases were with follicular adenoma (57.4%) followed by papillary carcinoma (35.2%) then follicular carcinoma (5.6%), while medullary Ca were the littlest proportion (1.9%).

Child and elderly show no case of lymph node involvement, highest proportion were among adult cases, while the old adult show only (6,3%) L.N involvement , where M.Ca showing no L.N involvement, while(15.8%) of the papillary carcinoma show L.N involvement, regarding follicular Carcinoma only 11.1% of them showing L.N involvement.

Conclusion:

This study showed that solitary thyroid nodules are benign more than malignant found as follicular adenoma, and the most common type of thyroid cancer was papillary thyroid carcinoma. There was no cases of anaplastic carcinoma.

Introduction

Solitary Thyroid Nodule is localized enlargement of thyroid gland, sometime confused in diagnosis when found MNG with predominant nodule. Follicular adenoma STN is main presentation. Tumors arising from follicular epithelium Malignant: Undifferentiated (Anaplastic), differentiated (papillary, follicular, mixed).

Benign : Follicular, Tumors arising from Para follicular epithelium: Medullary carcinoma, Tumors arising from lymphoid elements : Malignant lymphoma ,Rarely the thyroid gland is infiltrated by metastatic deposits or by local infiltration from a nearby lesion.⁽¹⁻⁶⁾

[1]papillary thyroid carcinoma: Is Incidence: 60%, more age may occur in children and young adults range f:m=3.5:1, Microscopic picture is the papillary projection is a single layer of epithelial cells, Laminated calcified bodies (Psammoma bodies) are often present in the stroma. The prognosis is 10 year survival :90%

2/follicular thyroid carcinoma. The metastasis mainly by blood stream and the

prognosis is 10 year survival if Encapsulated :97% or Invasive :70% . Thyroid cancer secretion thyroglobulin, that help in post thyroidectomy to follow up patients.^(1,6)

[3]anaplastic thyroid carcinoma: Many cases of ATC at time diagnosis irresectable and is possible resection only in minority of patient when the tumor not extended beyond thyroid gland capsule. The metastasis is the early direct lymphatic or blood .The prognosis is most of patients die within 1-2 years. chemotherapy and radiotherapy uses in treatment .prognosis depend on multiple factors, it poor prognosis.^(1,6)

(4)Medullary thyroid carcinoma :The tumor may be familial and in this case, it is more common in children and young adults. it is secretion calcitonin (Tumor marker). The microscopically pictures appear Sheets of neoplastic cells in a hyaline stroma, which may contain amyloid material. There is diarrhea in 30% of cases. Is arises from the parafollicular (C cells) unlike other type of the thyroid follicle. and there is have picture amyloid stroma. Calcitonin range in

blood fall after resection and rise again with recurrence and it help in the follow up of patients because esteemed tumor marker with this disease. ⁽⁶⁾ more common in old age group . ⁽⁶⁾ MTC may be found as sporadic type, this type rapid in progression and danger. MTC may be familial present as part from syndrome. ⁽⁶⁾ Neither TSH dependent or radioactive iodine are effect on MTC.. the stage at diagnosis defined medullary carcinoma is lymphatic and hematology metastases . ^(1,6)

Aim of studyThe study aimed:

1. To know histopathological characters of solitary thyroid nodule in patients undergoing surgery in Nasiriya city at (2015_2016_2017).
2. to assess thyroid cancer in solitary nodule at 3 years in Nasiriya city.
3. to know any neck lymph node metastasis at time of operation by lymph node biopsy.

Patients and method:

2.1 Type of study:

This cross-sectional analytic study was carried out at the department of general surgery, Al_Hussain teaching hospital, duration from 5th of October 2017 to 1st of September 2018.It is retrospective study collection data 162 cases during this period from (1-1-2015 to 1-1-2018).

The study include the collection samples of known cases of solitary thyroid nodule from operation room in Al_Hussain teaching hospital and send it into histopathology in lab. in same hospital in nassiriah city about 360 km south Baghdad the capital, and take

the result of histopathology from lab. in same hospital.

2.2 studied population:

The study include different ages and sexes.

Inclusioncriteria: known cases of STN.

Exclusion criteria: known cases of goiter and any other cases for thyroid surgery.

2.3 Ethical consideration:

including self-identification to lab. Staff and taking the permission from manger s of hospital was also considered.

2.4 Pilot study:

A pilot study was carried out from November 2017 to december 2017 to test the feasibility of the histopathology, the appropriate time and cost for this research, during this period collection 20 cases, and inclusion in our study.

2.5 Definition of variables:

2.5.1 Age

All age groups were included in this study. Classified into :

- Child and adolescence less than 18 years old
- Young adult(18_45) years old
- Old adult (45_65) years old
- Elderly (65years old and above)
- **2.5.2 Gender**

Male or female.

2.5.3 Histopathology:

Total thyroidectomy ,subtotal thyroidectomy and other types.

2.6 Data collection:

The study include the collection samples histopathology of solitary thyroid nodule for last 3 years (2015,2016,2017) from operation room and lab. in AL Hussain teaching hospital.

2.7 Work in the field:

The really start work in field duration from 5th of October 2017 to 1st of September 2018. It is retrospective study collection data 162 cases during this period from (1-1-2015 to 1-1-2018).

The study include the collection samples of known cases of solitary thyroid nodule from operation room in Al_Hussain teaching hospital and send it into histopathology in

lab. The first month involved dissected the title, the aim, the requested of study. The pilot study was done next month and for five months the data collection took place. Then enter the data into SPSS and finally in August we wrote the whole research.

2.8 Statistical Analysis

Data processed using computer program are Microsoft Word 2010 and excel for descriptive statistic including range, means, standard deviation were calculated and EPI-info Version 23 for analytic statistic was used. . Statistical Package for Social Sciences (SPSS) was used for analysis.

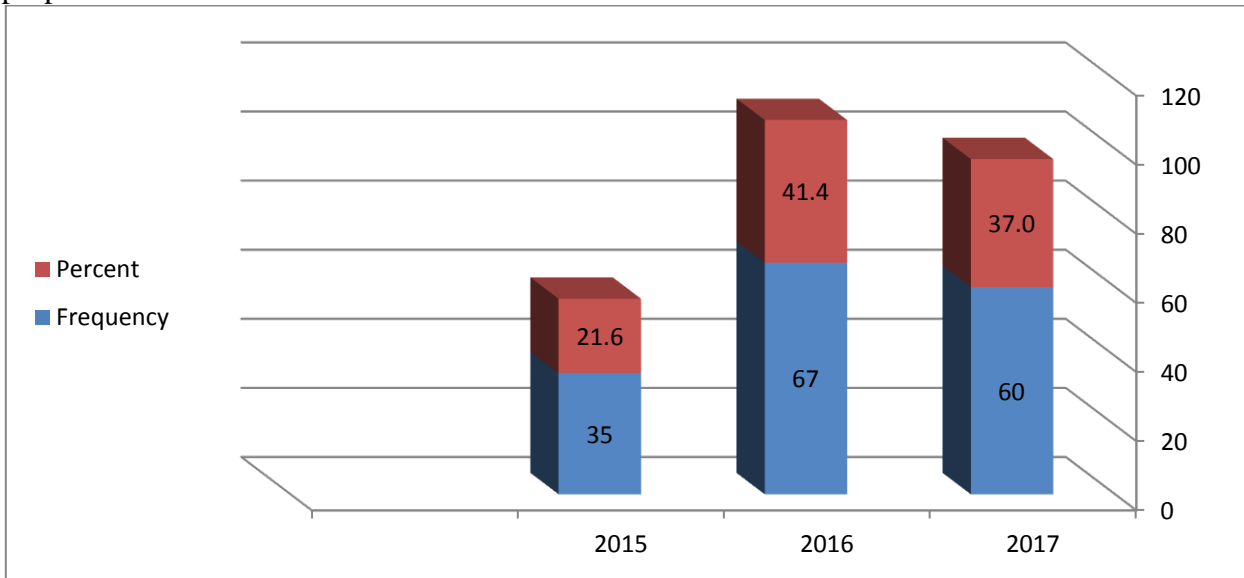
Results:

A total samples collection to study are 162 of patients with STN during three years(2015_2017),The female (157) and the male(5).

The table(3_1) show Even-though there was no significant statistical association between the age and gender that might referring to the randomization of the of sample, but vast majority of the studied population were female (96.9%), and most of them were at age of 18-45 years (67.9%), followed by the old adult 29.6%, while the other groups were having an equal percent of 1.25%.

Age group by years		Sex		Total	F.E
		Male	Female		P value
Child and Adolescent (less 18)	Number	0	2	2	2.700
	% within age	0.0%	100.0%	100%	
	% within sex	0.0%	1.3%	1.25%	0.486
Young Adult (18-45)	Number	3	107	110	
	% within age	2.7%	97.3%	100%	
	% within sex	60.0%	68.2%	67.9%	
Old Adult (45-65)	Number	2	46	48	
	% within age	4.2%	95.8%	100%	
	% within sex	40.0%	29.3%	29.6%	
Elderly (65 and above)	Number	0	2	2	
	% within age	0.0%	100.0%	100%	
	% within sex	0.0%	1.3%	1.25%	
Total	Number	5	157	162	
	% within age	3.1%	96.9%	100%	
	% within sex	100.0%	100.0%	100%	

Figure one showing the distributed population according to the years of the study, were most of them at the 2016 (41.1%), followed by 2017 (39%), while the 2015 were the smallest proportions of the contributors.



Figure(3-1):Distribution of the cases according to the year of the study.

As a studied total number were attending the Al-Hussien teaching hospital mostly coming at the 2016 followed by 2017 then 2015.as shown in figure two

Figure two show, most of the presented cases were with follicular adenoma (57.4%) followed by papillary carcinoma (35.2%) then follicular carcinoma (5.6%), while medullary Ca were the littlest proportion (1.9%).

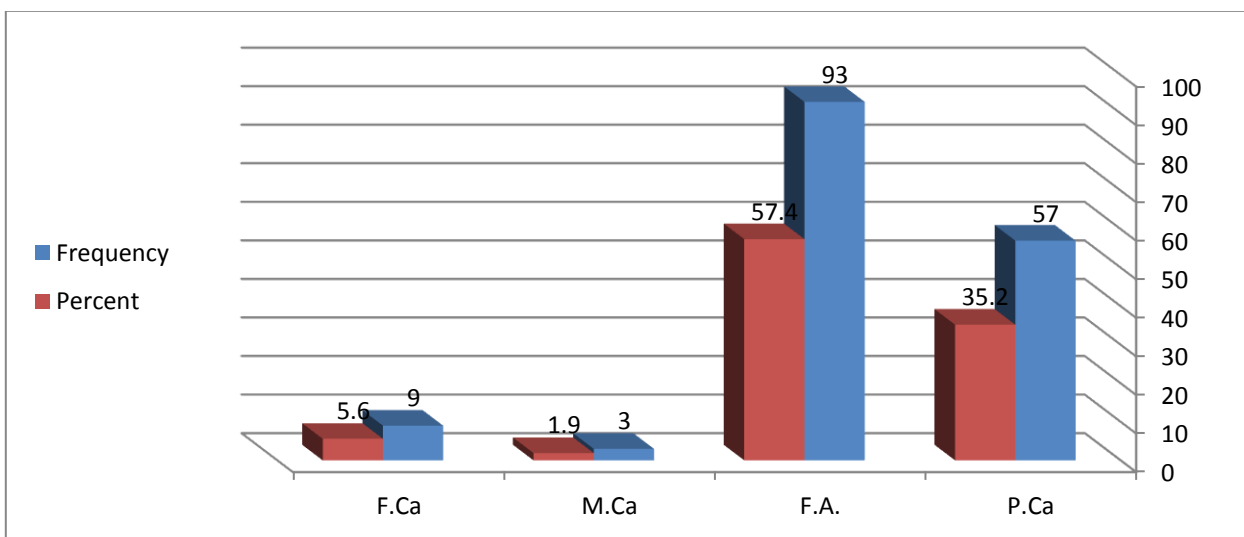


Figure (3-2): Distribution of the cases according to their histo-pathological types

Majority of the studied cases were without lymph node involvement as shown in the figure four.

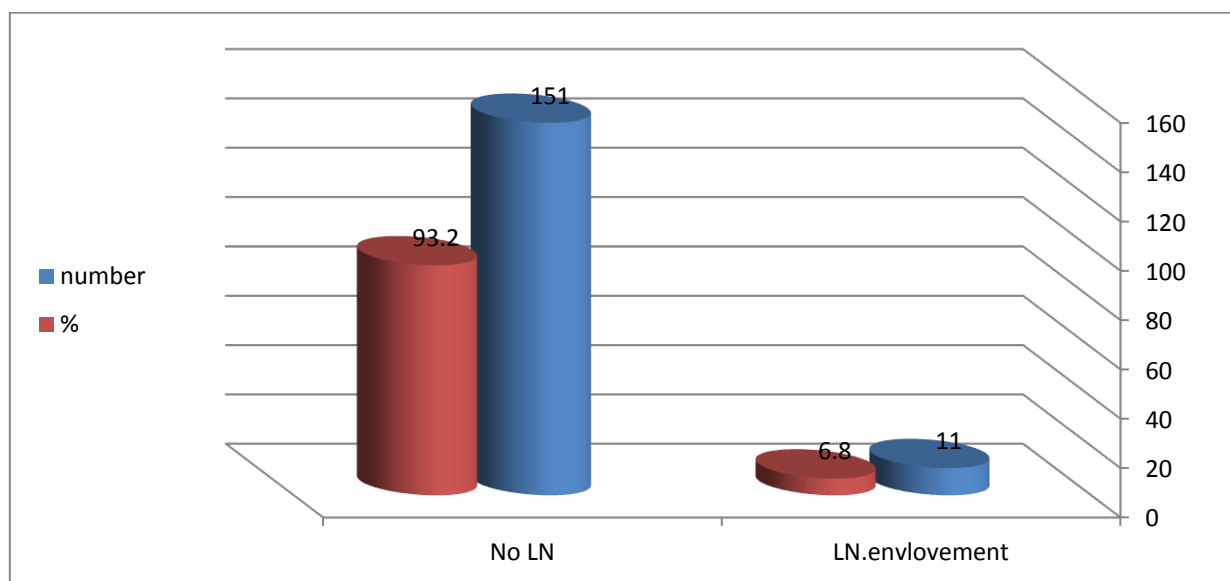


Figure (3-3): Distribution of the cases according to the lymph nodes involvement.

Table (3-2) Distribution of the cases according to their age and years of occurrence of cancer

Years and age		HP				Total	F.E, P value
		P.Ca	F.A.	M.Ca	F.Ca		
2017	child and adolescent	0	1	0	0	1	9.003, 0.05
		0.0%	100.0%	0.0%			
	Adult	26	17	0	0	43	
		60.5%	39.5%	0.0%			
	Old	5	10	1	0	16	
		31.3%	62.5%	6.3%			
Total		31	28	1	0	60	
		51.7%	46.7%	1.7%			
2016	Adult	15	25	1	2	43	9.052, 0.227
		34.9%	58.1%	2.3%	4.7%		
	Old	5	14	0	4	23	
		21.7%	60.9%	0.0%	17.4%		
	Elderly	1	0	0	0	1	
		100.0%	0.0%	0.0%	0.0%	100.0%	
Total		21	39	1	6	67	
		31.3%	58.2%	1.5%	9.0%	100.0%	
2	Child &	0	1	0	0	1	13.566,

0 1 5	adolescent	0.0%	100.0%	0.0%	0.0%	100.0%	0.263
	Adult	2	20	0	2	24	
		8.3%	83.3%	0.0%	8.3%		
	Old	3	4	1	1	9	
		33.3%	44.4%	11.1%	11.1%		
	Elderly	0	1	0	0	1	
		0.0%	100.0%	0.0%	0.0%		
	Total	5	26	1	3	35	
14.3%		74.3%	2.9%	8.6%			
Grand total	57	93	3	9	162		
	35.2%	57.4%	1.9%	5.6%			

The only 2017 year show significant statistical association between H.P. and age

Table (3-3): Relationship between histo-patohology of thyroid tumor and LN involvement

HP		LN		Total	F.E
		LN. involvement	No LN		P value
P.Ca		9	48	57	12.911
		15.8%	84.2%	35.2%	
F.A.		1	92	93	0.03
		1.1%	98.9%	57.4%	
M.Ca		0	3	3	
		0.0%	100.0%	1.9%	
F.Ca		1	8	9	
		11.1%	88.9%	5.5%	
Total		11	151	162	
		6.8%	93.2%	100.0%	

There was significant statistical association between L.N involvement and histopathological types, where M.Ca showing no L.N involvement, while(15.8%) of the papillary carcinoma show L.N involvement, regarding follicular Carcinoma only 11.1% of them showing L.N involvement.

Discussion

During our study we found the female (96.9%), and most of them were at age of 18-45 years (67.9%), followed by the old adult 29.6%, while the other groups were having an equal percent of 1.25% as see in table(3-1),

That STN is common in adult, when progress in age this increase prevalence and STN higher in female than males.^(8,9) Thyroid nodules are more common in females.^(9,10) Thyroid nodules are more common in adults than children.⁽¹¹⁾

During our study we found, most of the presented cases were with follicular adenoma (57.4%) followed by papillary carcinoma (35.2%) then follicular carcinoma (5.6%), while medullary Ca were the littlest proportion (1.9%) as see in figure(3-2), agreement with other studies that show Thyroid adenomas are more common follicular adenomas.⁽¹²⁾ during other studies found follicular adenoma more than follicular carcinoma by high percentage.⁽¹³⁾ Papillary thyroid carcinoma is the most common malignant tumor among all thyroid cancers.⁽¹⁴⁾ Follicular carcinoma is less common than papillary carcinoma.⁽¹⁵⁾ a medullary carcinoma is rare.⁽¹⁶⁾ may related cause into iodine intake effect in increased incidence of PTC and decrease incidence of FTC.^(17,18) Also like study solitary thyroid nodules have a neoplastic pathology and 34.4% to be malignant.⁽¹⁹⁾

During our study we not found cases of anaplastic thyroid carcinoma, one of causes is ATC is serious type of thyroid cancer is poor prognosis, more modalities of treatment by radiotherapy and chemotherapy ATC at time diagnosis therefore the surgery rarely possible.^(21,22,23)

During our study we found (15.8%) of the papillary carcinoma show L.N involvement, regarding follicular Carcinoma only 11.1% of them showing L.N involvement, while M.Ca showing no L.N involvement as see in table(3-3), like other studies PTC patients developed lymph node metastasis.^(24,25, 26) Follicular thyroid carcinoma lymph node involvement is rarer than in papillary carcinoma.⁽²⁶⁾ because Follicular thyroid carcinoma metastasis hematogenous.⁽²⁷⁾ also agreement other studies at the time of surgical operation, About 25% of patients can be diagnosed. Important risk in predicting LN metastases are male in sex, not found of tumor capsule, and around thyroid include.^(28,29,30)

During our study we found only 2017 year show significant statistical association between H.P. and age as see in table(3-2), may this related to have more cases with STN at this year as see in figure(3-1), and this cases exposure for overdiagnosis by many factor good decision of surgeon for STN lobectomy or total thyroidectomy, increase number pathologist also increase faster reading the specimen, increase challenge between researchers in studies to get best results. the previous studies in other countries, researcher and experimental provide that The estrogen have effect in progression differentiated thyroid neoplasia.^(31, 32) Estrogen have strong effect on formation thyroid neoplasia,⁽³³⁾ this is agreement with our study to explain association between H.P. and age as see in table(3-2), and it can be important cause. That studies in international medical journal and in Zagazig university medical Journal

are agreement with our study ,The STN is more to be benign than malignant.^(34,35)

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نوع التركيب النسيجي

في العقدة المنعزلة في الغدة الدرقية

في مدينة الناصرية لثلاث سنوات (٢٠١٧، ٢٠١٦، ٢٠١٥)

الاستاذ المساعد الدكتور علاء جميل

الدكتورة مروه ياسين عايد

الدكتور كريم ضيول فرعون

ملخص البحث

الغرض من الدراسة: دراسته لتوثيق نسبة ان العقدة المنعزله في الغدة الدرقية ان تكون سرطانية الخلايا و احتمالية انتشارها للغدد للمفاوية للرقبة عند وقت تشخيص العقدة لمرضى مدينة الناصرية في محافظه ذي قار خلال ثلاث سنوات السابقه (٢٠١٧_٢٠١٦_٢٠١٥).

المواد والاساليب :- دراسة مقطعية وصفية وتحليلية، الدراسة تتضمن جميع عدد من الحالات المرضى الذين يعانون من عقدة منعزلة الغدة الدرقية وبعد اجراء عملية جراحية في صالات عمليات مستشفى الامام الحسين التعليمي لاستئصال العقدة تم اخذها لاجراء الزراعة النسيجية المختبرية، وقد تمت الدراسة في مختبرات مستشفى الامام الحسين التعليمي في مدينة الناصرية التي تبعد ٣٦٠ كم جنوبي بغداد العاصمة. تمت الدراسة من خلال السنة الدراسي ٢٠١٧/١٠/ بأثر رجعي لسنوات السابقة (٢٠١٧، ٢٠١٦، ٢٠١٥). وقد شملت الدراسة المرضى من مختلف الفئات العمرية وكلا الجنسين .

اهداف الدراسة:-

- ١-الكشف عن الحالات المسجلة باحتماليه العقدة المنعزله في الغدة الدرقية ان تكون سرطانية الخلايا.
- ٢-معرفة عند وقت الاستئصال ان كانت الخلايا السرطانية منتشرة في الغدد للمفاويه للرقبه ام لا

النتائج: هذه الدراسة شملت الحالات المسجلة للعقدة المنعزلة في الغدة الدرقية خلال السنوات (٢٠١٧_٢٠١٦_٢٠١٥) ضمت ١٦٢ حاله وكانت النتائج اكثر الحالات سجلت في سنة ٢٠١٦ ، وكانت نسبة المريضات (٩٦,٩%) واغلبهم يتراوح عمرهم (٤٥_١٨) بنسبه (٦٧,٩%) ومنهم اعمارهم (٤٥_٦٥) بنسبه (٢٩,٦%).

وكانت نسبة ان تكون العقدة المنعزلة ذات خلايا حميدة (٥٧,٤%) اكثر من نسبة كونها خلايا سرطانية (٣٥,٢%)

اوصت الرسالة:

- ١_فتح مراكز تهتم بمتابعة الهرمونات بمشاركة فريق متخصص لعدة اختصاصات كالجراحة العامة والنسائية وطب المجتمع والاسرة
- ٢_متابعة النظام الغذائي مع متخصصين تغذية.
- ٣_يتطلب اجراء مزيد من الدراسات مع تصميمات مختلفة ولفترات اطول نسبيا، ويفضل ان يكون نوع الدراسة بشكل يسمح لمتابعة لتحديد تأثير عوامل الخطر المربكة مثل العمر، والاجهاد، والاشعاع بدلا من العوامل المحددة وكذلك الدراسات المطلوبة حول الاستجابة للعلاج ومتابعة مضاعفات المرض.

الاستنتاج : ان نسبة الغدة الدرقية المنعزلة تكون حميدة اكثر من ان تكون غدة سرطانية ووجود ثلاث انواع من الغدد السرطانية اكثر من باقي الانواع المعروفة للغدة السرطانية الدرقية.