MULTINODULAR GOITER AND DIFFERENTIATED THYROID CANCER IN PEDIATRICS

P2-932

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INTRODUCTION

Multinodular goiter (MNG) defined as an enlarged thyroid gland with two or more thyroid nodules have historically been thought of as a benign condition with a low risk of associated malignancy.

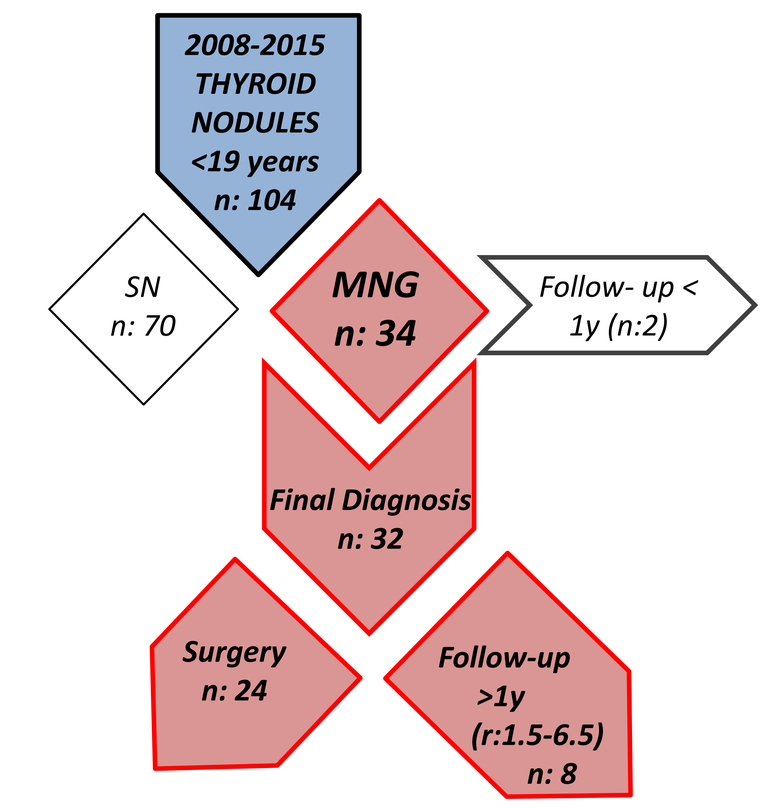
Thyroid nodules in childhood and adolescence have an estimated prevalence up to 1.8% with a greater malignancy risk than in adults.

In a recent report we have identified multinodular goiter (MNG) as a condition with an increased risk for thyroid malignancy in children and adolescents.

DTC in Children: Prevalence and Predictors in a Large Cohort with Thyroid Nodules Followed Prospectively . P Papendieck et al. J Pediatr 2015

How to approach MNG is controversial both in children and adults.

MATERIAL AND METHODS



INITIAL EVALUATION:

- CLINICAL DATA
- THYROID FUNCTION
- CERVICAL DOPPLER –US
- US-GUIDED FNAB (BETHESDA)

✓FROZEN SECTION (to confirm preoperative FNAB and decide the extent of the surgery CND)

✓HISTOPATHOLOGICAL ANALYSIS

✓**ANALYSIS OF DIFFERENCES BETWEEN BENIGN AND MALIGNANT MNG**

STATISTICAL ANALYSIS

Statistical analysis by Student t test and Chi-squared test. Univariate and multiple binary logistic regression analyses were used to evaluate the independent influence of age, gender, pubertal status, thyroid-Ab, TSH as continuous variable and within designated ranges . $p<0.05$ was considered significant.

SPSS 18.0 (Chicago,Illinois) &InfoStat (Univ.Nac.Córdoba).

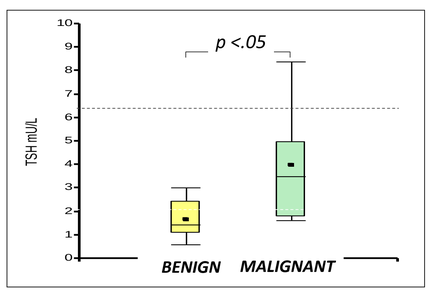
OBJECTIVES

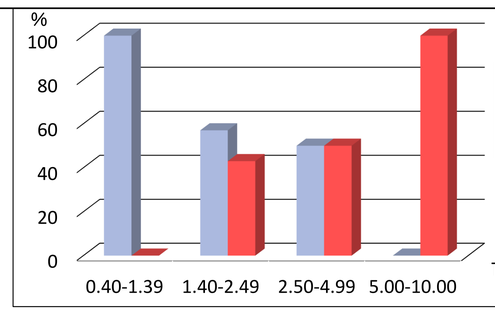
- To report the prevalence and characterization of a prospectively and uniformly followed cohort of pediatric patients with MNG
- To analyze the differences between benign and malignant BMN before surgery in order to identify malignancy predictors.

RESULTS

DIFFERENCES BETWEEN BENIGN AND MALIGNANT MNG

	BENIGN	MALIGNANT	P VALUE
	24	8	
CLINICAL DATA			
Age	14.6	10.4	.04
(years, median, range)	(8-18.5)	(11.2-16.9)	
♀/♂	20/4	4/4	.08
Prepubertal	5(21%)	5 (62.5%)	.035
Risk factors	5	-	
Goiter type			
Palpable MNG	21	7	
Non palpable			
Diffuse Goiter	3	-	
Normal thyroid	-	1	
Palpable lymph nodes	-	1	
LABORATORY (n:23)			
TSH	1.42	3.5	.04
(mIU/L, median,range)	(.01-13.5)	(1.6-8.4)	
Thyroid function			
Normal	13	6	
Hypothyroidism	1	2	
Hyperthyroidism	1	-	
Thyroid Ab	6/23 (26%)	1/8 (12.5%)	
US			
Dominant nodule size	17.4	20.5	
(mm, median,range)	(8-48)	(2-80)	
Solid	12 (50%)	8 (100%)	.02
Mixed/cystic	12	-	.01
Irregular margins	2	2	
Intranod. Microcalcific.	3	3	
Intranodular flow	13 (54%)	4 (50%)	
Path. adenopathies	1	4 (50%)	< .01





Rising TSH levels associated with M ($p<0.05$)

CYTOLOGY-FINAL DIAGNOSIS CORRELATION (n:31)

HISTOLOGY	BENIGN	MALIGNANT	MALIGNANCY RATE (%)	ADULTS
CYTOLOGY BETHESDA				
I NON DIAGNOSTIC	9	-	0	1-4
II BENIGN	12	1	7.7	0-3
III AUS/FLUS	2	-	0	5-10
IV FOLLICULAR NEOPLASIA	-	-	0	15-30
V SUSPICIOUS	1	3	75	60-75
VI MALIGNANT	-	3	100	97-99

Cibas and Ali Am J Clin Pathol 2009;132:658-665

PATHOLOGICAL ANALYSIS (n:24)

NODULAR HYPERPLASIA	15
MULTIPLE FOLLICULAR ADENOMA	1
PAPILLARY THYROID CARCINOMA	8

SUMMARY

✓MNG represented 31% of our thyroid nodule population.

✓PTC was the only malignant histotype with an incidence of 25%, similar to that reported in pediatric thyroid nodules globally.

✓Younger age, prepubertal status, higher TSH concentration even within normal range, solid nodules and pathologic cervical lymph nodes were significantly associated with malignancy.

✓Mixed or cystic MNG were significantly associated with benignancy.

✓Malignancy rates using Bethesda were similar to adults.

CONCLUSIONS

This study confirms our previous report about malignancy risk of pediatric MNG. According to our findings this condition has to be faced as every pediatric thyroid nodule with a systematic approach in which each diagnostic tool provides useful information to reach diagnosis.

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