

10 ultrasonographic thyroid pattern in Hashimoto's thyroiditis. Re-evaluation after 12 years

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Aim. To re-analyze the concept for the echographic description and clinical diagnostic in thyroidology, proposed 12 years ago. Re-analyzing the frame in Hashimoto thyroiditis (HT).

Introduction. 10 years before, we proposed the concept of echographic thyroid pattern (ETP), made by 7 pattern, whose principal aim was to differentiate between immune vs nodular lesions.

Material&Method. A. Between 1996-2012, >32 000 thyroid ultrasound, linear probes, 7,5 MHz.

B. New Description - 10 ETP: pattern 0 – lack of thyroid, 1 – hypoechogenous pseudonodular; 2 – hypoechogenous homogenous; 3 – micronodular hypoechogenous; 4 – macro (> 10 mm) (+/-micro) nodular; 5 – neomogenous hypo/hyper-echogenous pseudonodular; 6 – micronodular anechogenous; 7 – hyperechogenous diffuse (normal). In 2013 we added: **8** – only slightly hypoechogenous pseudonodular, **9** – inhomogenously predominantly hyperechogenic with tubular anechogenic areas.

C. Patients: 1196 HT, 8 "sero-negative" thyroiditis (T S-N), 73 thyroiditis with hyper-ATG-emia (T-ATG), 70 idiopathic mixedema (IM); 72 Graves-Basedow disease (GBD) without HT; 1130 control.

D. Fiability/reliability analysis 1. On specificity 2012/2003 (95,68); 2. On sensitivity 2012/2003 (67,82).

Results. A. Number echographies/pattern/disease (table 1). **B.** Sensitivity, specificity, predictive positive value for the relationship pattern-diagnostic for HT vs. all conditions (table 2).

B. Pattern	0	1	2	3	4	5	6	7	8	9	A	TH	T S-N	T-ATG	IM	GBD	Control
								(new)	(new)								
Sensitivity	0,78	63,73	10,06	3,86	6,72	10,68	0,31	3,86	4,79	0,21	Pattern 0	15	0	1	7	4	9
Specificity	98,57	88,61	81,19	89,26	61,05	94,07	96,86	80,22	98,50	99,86	Pattern 1	1223	1	57	17	9	84
VPP	41,67	87,99	38,52	33,82	18,43	70,21	11,54	20,33	80,70	66,67	Pattern 2	193	0	7	40	13	77
VPN	-	-	-	-	81,57	29,79	88,46	79,67	19,30	33,33	Pattern 3	74	0	3	3	3	138
Accuracy	43,13	74,51	42,80	41,22	30,25	46,79	42,13	36,93	45,38	43,37	Pattern 4	129	9	20	8	14	529
											Pattern 5	205	0	8	1	39	39
											Pattern 6	6	0	0	0	0	46
											Pattern 7	74	0	5	11	13	261
											Pattern 8 (new)	92	0	5	0	1	16
											Pattern 9 (new)	4	0	0	0	0	2
											Total	1919	10	101	87	95	1183

C. Test χ^2 (54 degree of freedom): >> 24,36 p <<< 0,001.

D. Reliability – fiability: 1. Specificity=84,7%; 2. Sensitivity=93,97%. 96%.

Conclusions

1. From sensitivity, specificity and predictive positive value analysis, the classification proposed from 2003 in time (see endocrine Abstracts 2007-2012) with only 7/8 patterns ETP is exact and correct with 10 ones, too: reliability: 84,7% and 93,97%.

2. VPP aproximately 90 asks the diagnostic to be corroborated with antibody levels. Description "hypoechogenous-pseudonodular" does not mean implicitly HT (could be T-ATG, too).

3. VPN >80% for pattern 4, means that, when there is a nodule over 10 mm, then HT is improbable.

4. When there are pattern 6 or 7, normality is almost sure.

5. Pattern 1 and 8 suggest HT.

6. Pattern 5 and 9 suggest thyroiditis/Graves-Basedow with thyroid hyperfunction, respectively euthyroidism.