

# Predictive factors of postoperative hypoparathyroidism after total thyroidectomy

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Hypoparathyroidism (hypoPT) is the most frequent complication after thyroid surgery, usually as transient hypocalcemia. Permanent parathyroid lesion is less frequent, but it can extend hospital stay and complicate postoperative management. Several preoperative factors predicting the development of hypoPT have been identified, including advanced age, hyperthyroidism, surgical experience and others. We evaluate the role of some potentially predictive factors in our recent surgical series

**Material and methods** - We analyze retrospectively 649 patients with total thyroidectomy from 2005 to 2011, followed up more than one year after surgery. Permanent hypoPT (PhypoPT) is defined by [iPTH]< 15 pg/ml without treatment more than one year after surgery. [iPTH] between 5 and 15 pg/ml were defined as partial deficiency, whereas less than 5 pg/ml was considered total deficiency. Cases with spontaneous recovering of parathyroid function after a period of [PTHi]< 15 were named as transient hypoPT (ThypoPT). We consider age, thyroid size (by weight), sex, preoperative [iPTH], existence of hyperthyroidism, central dissection and cause of surgery as variables in our study.

Globally, 449 patients didn't show postoperative hypoPT (70,6%), 151 ThypoPT (23,3%; 87 of them normalized at first month) and 49 (7,55%) PhypoPT, 27 of them (4,1%) total deficiency. There were significant differences among the three groups as reflected in table.

	Male %	Age (y) Mean (SD)	HyperT %	CND %	Surgical reason*	Weight (g) mean (SD)	PreOp [iPTH]
<b>Non hypoPT</b> n= 449	13.8	54.4 (14.3)	12.5	6.5	35.4	69.9 (46.8)	61.1 (38)
<b>HypoPT</b> n=200	13	53.4 (14.8)	11	26	48.5	61 (58.4)	60.4 (41.4)
<b>ThypoPT</b> n=151	8.6	53.5 (14.4)	12.6	17.2	44.4	63.3 (58.6)	63.2 (46.1)
<b>PhypoPT</b> n=49	16.5	53.1 (16.3)	6.1	53.1	61.2	53.5 (57.8)	52.7 (23)
<i>Non vs Hypo</i>	0.78	0.47	0.59	<b>0.002</b>	<b>0.002</b>	<b>0.03</b>	0.84
<i>Permanent vs Transient</i>	<b>0.03</b>	0.76	0.29	<b>&lt;0.001</b>	<b>0.05</b>	<b>0.04</b>	0.18

Hypert: hyperthyroidism/ CND – central neck dissection/ \*Percentage of surgeries carried out by suspect or malignant FNAB or CB / [iPTH] in pg/ml, mean (SD)

Parathyroid damage in total thyroidectomy is more prevalent when it is indicated for malignant or suspicious FNAB or CB, mainly when it is completed with dissection of central cervical compartment in smaller glands. Our series finds that gender, age or hyperthyroidism haven't got influence in the risk of postoperative hypoPT, although persistence of hypoPT when there is an initial damage is more frequent in men.