



GAVIN CONFERENCES

2nd International Conference on **Surgery and Medicine**

November 19–20, 2018 Dubai, UAE

Calcium serum levels after near-total thyroidectomy

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The aim of the study was to determine whether there is a correlation between thyroidectomy and serum calcium levels.

Retrospective study of 93 patients that underwent near-total thyroidectomy. Calcium serum levels before and after surgery, length of surgery, thyroid hormones levels and amount of resected gland were analysed.

Calcium levels measured on the first and second day after surgery were compared. The result was not statistically significant, $t(91) = -1,45$; $p = 0,150$ - calcium serum levels did not change significantly between the first and second day. For further analyses we used the average from these two measurements. Post-operative calcium levels were compared to pre-operative calcium levels. The result was statistically significant, $t(24) = 15,90$; $p < 0,001$. The effect of surgery on calcium serum level was very strong which equalled 2,71.

Longer surgery resulted in lower post-operative calcium levels ($r = -0,268$; $p = 0,010$). Surgery duration correlated positively with the size of decrease in calcium level compared to pre-operative measurements ($r = -0,434$; $p = 0,034$).

The greatest dimension of the thyroid correlated with the size in decrease in operative calcium levels compared to pre-treatment measurements ($r = -0,613$; $p = 0,020$), but not with post-operative calcium serum level. The bigger the dimensions of thyroid gland excised, the more pronounced the decrease in calcium levels.

Near-total thyroidectomy results in decrease in serum calcium levels. Longer procedures result in significant decrease in calcium levels.