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Correlation between the Preoperative Calcium and Parathyroid Hormone Levels with the Size and Weight of Parathyroid Adenomas

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Background:

Hyperparathyroidism is a prevalent disease with parathyroid adenomas being the most common cause. Surgical excision remains the standard treatment for parathyroid adenoma. Successful preoperative localization of the parathyroid adenoma could facilitate the decision regarding the extent of surgical exploration.

Objectives:

The aim of the current study is to assess the correlation between the preoperative values of parathyroid hormone (PTH) and ionized calcium with the adenoma weight and volume in patient with primary hyperparathyroidism caused by single-gland adenoma.

Patients and methods:

We did this retrospective review for all patients who were diagnosed with primary hyperparathyroidism due to a solitary parathyroid adenoma in our general surgery department over 4 years. The peak preoperative levels of PTH and ionized calcium were collected directly. The adenoma volumes were obtained indirectly from the gland dimensions mentioned in the histology report together with the adenoma weight. SPSS software was used to get the correlation coefficient between these values.

Results:

99 patients were included in our study. The average age at surgery was 62.65 ± 12 years of age. The correlation coefficient between the adenoma volume and weight with the preoperative ionized calcium level was weakly positive; ($r = 0.329$, $p < 0.01$) and ($r = 0.281$, $p = 0.019$), respectively. While the correlation between the adenoma volume and weight with the preoperative PTH level was stronger; ($r = 0.708$, $p < 0.01$) and ($r = 0.650$, $p < 0.01$), respectively.

Conclusion:

We reported a strong positive correlation between the preoperative levels of PTH with the adenoma weight and volume, while the correlation with preoperative calcium level it was relatively weak.

Biography

Emad is a general surgery registrar, mainly works in endocrine and general surgery. He is interested in endocrine cancer research. He has at least 9 published papers. Through his work he hopes that his research activity would be valuable to help people all over the world. He is currently working as a General Surgeon in the James Cook University Hospital, England in UK.

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