

# A POSSIBLE SOLUTION FOR INTRAOPERATIVE PTH- SPIKES IN PATIENTS WITH PRIMARY HYPERPARATHYROIDISM

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## **Abstract body (should contain maximum 300 words)**

Background Intraoperative PTH-spikes occur in up to 35% of the patients during surgery for primary hyperparathyroidism. Manipulation of the enlarged gland has been postulated as possible reason for the PTH-increase. This can lead to a prolonged PTH-decline which pose a problem for the interpretation of the PTH-curve using current interpretation criteria. Aim of this study was to test an alternative interpretation model if PTH-spikes are detected intraoperatively. Methods The intraoperative PTH curve of 1037 patients with PHPT was analyzed. An additional blood sample was drawn right after visualization of the enlarged gland ("visualization value"). If a PTH-spike ( $>50$  pg/ml) was detected, the visualization value was used as baseline value and a decline of  $\geq 50\%$  10 minutes after extirpation was required. Sensitivity, specificity and accuracy of this criterion were compared to the Miami- and the Vienna-criterion, respectively. PPV and NPV were calculated. Results A PTH-spike was detected in 278 of 1037 patients (26.8%). Sensitivity for the visualization-criterion (VC) was 98.4% (Miami 96.9%, Vienna 72.3%), specificity 63.6% (Miami and Vienna also 63.6%), accuracy 95.7% (Miami 92.1%, Vienna 71.6%). NPV was 77.8 (Miami 50, Vienna 95.6) and PPV 96.6 (Miami 94.7, Vienna 16.5). Conclusion Using the "visualization-value" as baseline in patients with intraoperative PTH-spike seems to be a valuable alternative and can therefore be recommended. This interpretation-model is superior to the Vienna criterion and also more efficient than the Miami criterion in this group of patients.