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Risk factors for developing post total thyroidectomy hypocalcemia: A retrospective study in a tertiary hospital in the Philippines

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Introduction: Hypocalcemia is a frequent complication following thyroidectomy, primarily caused by injury to the parathyroid glands. With the increased public awareness of thyroid malignancies leading to total thyroidectomy, the incidence of postoperative hypocalcemia has also risen. Post-operative hypocalcemia is defined as ionized calcium below 4 mg/dL or serum calcium below 8 mg/dL within 48 hours.

Objective: To determine the incidence and risk factors for developing post-total thyroidectomy hypocalcemia among patients admitted in a tertiary government referral center between January 2022 to June 2024.

Methodology: This retrospective cohort study analyzed 205 patients who underwent thyroidectomy for suspected thyroid malignancy. Data collected on histopathology, patient demographics (age, sex), comorbidities (hypertension, diabetes, etc.), type of surgery, surgical team experience, and post-operative factors, including the incidence of hypocalcemia were analyzed. Statistical analyses used were Chi-square and Odds ratio with a p-value <0.05 to identify relationships between these variables and postoperative calcium levels.

Results: Diabetes mellitus was found to be statistically significant in the occurrence of hypocalcemia among benign thyroid neoplasms (p-value= 0.040). Thyroid gland volume ≤ 50 cm³ (p-value= 0.018), total thyroidectomy alone without neck dissection (p-value= 0.006), and postoperative complications (p-value= 0.041) were also statistically significant factors leading to the occurrence of post-thyroidectomy hypocalcemia. Age, gender, histopathology, duration of hospital stay, and surgeon (resident vs consultant) were not statistically significant (p-value= >0.05).

Conclusion: Patient comorbidity such as diabetes mellitus, thyroid gland volume, total thyroidectomy without neck dissection, post-operative complications such as nosocomial pneumonia and tracheostomy, are significant risk factors leading to post-operative hypocalcemia.

Biography

Odessa S. Sales earned her Bachelor of Science in Biology from the University of St. La Salle in Bacolod City, graduating in 2016. As an undergraduate, she was awarded Best Thesis in her department and secured first place in the BIOTA competition. She went on to receive her Doctor of Medicine degree from the same institution in 2020. During her residency at Corazon Locsin Montelibano Memorial Regional Hospital, Dr. Sales actively participated in research forums. She was awarded third place for her case report presentation and was later selected to present the same case at the Philippine College of Physicians – Negros Occidental Chapter. Her work was subsequently published in Cor Illumina, the official medical journal of her training hospital.

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