Critical Points Regarding Hypocalcemia after Total Thyroidectomy

I read with interest the article “Comparison of Intraoperative versus Postoperative Parathyroid Hormone Levels to Predict Hypocalcemia Earlier after Total Thyroidectomy,” by Lee et al.1 published online in Otolaryngology–Head and Neck Surgery. The authors analyzed the differences in the mean parathyroid hormone levels for normocalcemic and hypocalcemic total thyroidectomy patients who were tested for parathyroid hormone during the intraoperative or early postoperative period. They found that the parathyroid hormone assay could be used to improve informed decision making between the patient and the health care team regarding immediate postoperative management and discharge planning for patients undergoing total thyroidectomy. They also reported that intraoperative parathyroid hormone had no significant disadvantage versus early postoperative parathyroid hormone when used as a clinical guide for discharge after thyroidectomy. I would like to congratulate the authors on this well-written article, but I believe that additional data for the patient’s management would be beneficial.

During the evaluation of transient and permanent hypocalcemia following total thyroidectomy, the biochemical profile of the patients—such as parathyroid hormone, calcium, and albumin—should be considered. Even if correct surgical management was applied at the operation, these biochemical parameters could be affected in some conditions that are not related to the surgical procedure. These include familial factors, heavy metal deposition, pseudohypoparathyroidism, neonatal cases, renal failure, hyperphosphatemia, acute pancreatitis, “Hungary bones,” pregnancy, lactation, hypoalbuminemia, vitamin D deficiency, hypomagnesemia, medications, and previous operations that affect the absorption and transportation capacity of the gastrointestinal system.2,3 Whether the study is a systematic analysis, the patient’s demographics should be taken into account if it is possible. In particular, the usage of the medications and hypocalcemia—with previous operations affecting the absorption and transportation capacity of the gastrointestinal system—are important.

McKenzie et al showed that patients with a previous Roux-en-Y gastric bypass had a greater incidence of recalcitrant symptomatic hypocalcemia after thyroidectomy, resulting in prolonged duration in hospital stay.4 Liamis et al reviewed drug-induced hypocalcemia and showed that the prolonged use of the drugs could sometimes result in the risk of hypocalcemia. Moreover, the awareness of the undesirable effects of certain drugs on serum calcium concentrations could be helpful in clinical management.1 Insufficient knowledge regarding patient demographics could result in misinterpretation, thus raising doubts about the surgery. For this reason, I think that knowledge of these aspects in relation to the patient population would be interesting.

Response to “Critical Points Regarding Hypocalcemia after Total Thyroidectomy”

We thank Dr Ali Kagan Coskun for his interest in our article.1 The points raised by Dr Coskun are valid observations regarding patient care and an ever-present challenge faced by researchers who do analysis on large-scale data from databases or the literature. We made no pretense to analyze patient-level data in this study. Patient-level data were not available to us for this analysis. As such, the many patient-specific historical and clinical considerations regarding the likelihood of postoperative hypocalcemia were not analyzed.

The purpose of our article was to answer the question of whether intraoperative parathyroid hormone (PTH) measurements are inferior to 1- to 6-hour postoperative PTH measurements. They are not. This means that when all other patient-specific factors are considered, patients do not need to be kept for extended periods in the same-day surgery area or even overnight just to measure their PTH levels. We do not wish to convey that PTH measurements are the only criteria for making discharge decisions in this population. The issues raised by Dr Coskun really deal with discharge