THYROID SURGERY

New frailty risk model is the best yet for patients undergoing thyroid or parathyroid surgery

BACKGROUND
Endocrine surgical procedures (thyroid and parathyroid) and generally extremely safe and well tolerated by the majority of patients. Recovery after surgery is usually routine and most patients quickly get back to their prior level of health before surgery. However, there is likely a small subset of patients that are more "frail" and poor surgical candidates and may be better served by following the disease progression or with non-surgical treatment-options. Pre-operative risk calculators have been developed for more complex surgeries to help better quantify for patients and their families the risks of post-operative problems or death associated with various surgeries. These calculators help patients and physicians determine the individual risk of the surgery and identify patients that could be benefit form additional treatment before surgery so as to have the best outcome. None currently exists for thyroid surgery, so the authors aimed to develop a Cervical Endocrine Surgery Risk Index, or CESRI) based on frailty-related factors.

THE FULL ARTICLE TITLE
Mascarella MA et al 2019 Preoperative risk index among patients undergoing thyroid or parathyroid surgery. JAMA Otolaryngol Head Neck Surg. Epub 2019 Sep 5. PMID: 31486838

SUMMARY OF THE STUDY
The authors analyzed more than 150,000 patients from the American College of Surgeons (ACS) National Surgical Quality Improvement Program (NSQIP) database that had thyroid or parathyroid surgery from 2007 through 2016. They used sociodemographic, clinical, and frailty-related risk factors to create a risk model whose main outcome was a variable of any major adverse event or death within 30 days after surgery. The authors then compared the ability of their scoring system to predict post-op problems and death to other scoring systems.

Factors that proved important and were included in the scoring system were were inpatient hospital status at the time of the procedure, surgical time more than 4 hours, functional/independence loss, age >50 (with increased by decade of age after age 50), low blood count, use of blood thinners, recent weight loss, low serum albumin levels, increased white blood cells, baseline shortness of breath, male sex, obesity, current smoking and type 1 and 2 diabetes mellitus. The CESRI scoring system seemed to provide equal estimates regardless of type of neck surgical procedure or diagnosis and performed better than other generic risk calculators. However, statistically the performance of the model was only "fair", with 'fair' sensitivity and specificity. Based on the CESRI point system, the probability of problems after surgery ranged from 0.010 if the CESRI score was ≤4 to 0.290 if the score was ≥50.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?
The newly developed CESRI could aid physicians in counseling patients before thyroid and parathyroid surgery, and even to recommend treatment such as nutritional supplementation prior to surgery to some patients. However, given the low risk of problems and death of these procedures, the model only performs "fairly" and does not help predict the more common complications in endocrine surgery of hypocalcemia and nerve injury.

— Melanie Goldfarb, MD

ATA THYROID BROCHURE LINKS

Thyroid Surgery: https://www.thyroid.org/thyroid-surgery/

THYROID SURGERY, continued

ABBREVIATIONS & DEFINITIONS

Thyroidectomy: surgery to remove the entire thyroid gland. When the entire thyroid is removed it is termed a total thyroidectomy. When less is removed, such as in removal of a lobe, it is termed a partial thyroidectomy.

Parathyroidectomy: surgery to remove one or more of the 4 parathyroid glands

Parathyroid glands: usually four small glands located around the thyroid that secrete parathyroid hormone (PTH) which regulates the body's calcium levels.

Frailty: decreased reserve to respond to health problems and stress

Frailty-related Risk Factors: age, gender, socioeconomic status, physical activity in routine work and education level