Outpatient thyroidectomy has become slowly accepted with various published reports predominantly examining partial or subtotal thyroidectomy. Concerns regarding the safety of outpatient total and completion thyroidectomy remain, especially in regards to vocal fold paralysis, hypocalcemia, and catastrophic hematoma. We aimed to evaluate the safety of outpatient thyroid surgery in a large cohort. We conducted a retrospective review comparing outcomes in those who underwent outpatient (n=251) versus inpatient (n=291) completion or total thyroidectomy between February 2009 and February 2015. Outpatient completion and total thyroidectomy had lower rates of temporary hypocalcemia (6% vs. 24.4%; p<0.001) and no significant difference in rates of return to emergency department (1.2% vs. 1.4%), hematoma formation (0.8% vs. 0.7%), temporary (2% vs. 4.1%) or permanent (0.4% vs. 0.7%) vocal fold paralysis, or permanent hypocalcemia (0.4% vs. 0%) compared to the inpatient group. Outpatients requiring calcium replacement had shorter duration of postoperative calcium supplementation (44.4±59.3 days vs. 63.3±44.4 days; p < 0.001). Our data demonstrates similar safety in outpatient and inpatient total and completion thyroidectomy.

### RESULTS

Outpatient completion and total thyroidectomy had no significant difference in rates of readmission, hematoma formation, temporary or permanent vocal fold paralysis, or permanent hypocalcemia when compared to the inpatient group. The incidence of temporary hypocalcemia was significantly lower in all patients receiving outpatient thyroidectomy and those having total thyroidectomy (5.5% vs. 26%; p < 0.001), but there was no difference for patients undergoing completion thyroidectomy.

Outpatients had shorter duration of postoperative calcium supplementation (44.4±59.3 days vs. 63.3±44.4 days; p < 0.001) and higher postoperative PTH levels, both 1 hour after surgery (44.9±31.3 pg/ml vs. 21.4±22.8 pg/ml; p < 0.001) and at first clinic visit (29.9±16.8 pg/ml vs. 20.9±24.8 pg/ml; p < 0.001).

### DISCUSSION

Outpatient thyroidectomy is associated with benefits to both patients and hospitals. However, total and completion thyroidectomy are considered to have higher risks than less extensive procedures, and the safety of performing such procedures on an outpatient basis remains controversial. In our study, outcomes of outpatient total and completion thyroidectomy were similar or improved compared to those managed with admission. Temporary hypocalcemia was lower in outpatients, though this may be due to increased reporting of symptoms by inpatients and the bias of PTH >15 pg/ml in outpatient qualification.

The majority of our patients having concurrent paratracheal dissection were admitted following thyroidectomy. Paratracheal dissection has been reported to increase postoperative morbidity and to predict unplanned readmission. While we found no difference in the rate of complications following outpatient versus inpatient thyroid surgery with paratracheal dissection, the sample size for outpatient paratracheal dissection was only eight. Additionally, paratracheal dissection corresponded with an increased rate of transient RLN injury in inpatients and, among outpatients, were more common in patients returning to ED. Thus, we cannot conclude that patients requiring a paratracheal dissection will have equally safe outcomes if managed as outpatients.

### CONCLUSIONS

Total and completion thyroidectomy can be performed safely with similar complications when managed as an outpatient operation. The incidence of post-thyroidectomy complications is similar to rates associated with inpatient thyroid surgery; however, the need for paratracheal dissection may still represent a relative contra-indication to an outpatient operation.