Perioperative complications after transoral endoscopic thyroidectomy vestibular approach: a retrospective audit study

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Background

Transoral endoscopic thyroidectomy vestibular approach (TOETVA) has been reported to be safe with minimal trauma and superior cosmetic outcome. Our retrospective audit study primarily aimed at analyzing perioperative complications in patients undergoing TOETVA at an Asian tertiary referral center.

Methods

The demographic and anthropometric data as well as perioperative and postoperative complications of 124 patients undergoing TOETVA at Chi Mei medical center from October 2015 to March 2017 (i.e., 18 months) were retrospectively reviewed. To determine the effect of operative experience on the incidence of complications, the study period was divided into two phases (i.e., Phase 1 and Phase 2) with the study patients equally divided into two groups after the first introduction of TOETVA.

Results

Totally 124 patients (110 females and 14 males) were studied. The median age was 46.5±12 years (Table 1). The incidence of major perioperative complications was in the order of massive subcutaneous emphysema (58.1%), difficult breathing with or without stridor (9.7%), tracheal tube cuff rupture (3.2%), and cervical hematoma (1.6%) (Table 2). All patients were discharged from hospital without long-term sequelae. The operating time ($p=0.005$), anesthesia time ($p=0.024$), and complications rate ($p<0.001$) decreased significantly in Phase 1 compared with that in Phase 2.

Table 1. Baseline demographic, anthropometric, and disease characteristics of study subjects (n = 124)

	Total n = 124	Phase 1 n = 62	Phase 2 n = 62	p value
Gender (female)	110 (88.7)	52 (83.9)	58 (93.5)	0.154
Age (years)	46.5±12	45.4±12.4	47.6±11.5	0.309
Height (cm)	159.3±7.1	160.3±7.7	158.3±6.4	0.111
Weight (kg)	59.8±11.7	60.6±13	59.1±10.3	0.453
Body mass index (kg/m ²)	23.5±3.7	23.4±3.8	23.5±3.6	0.889
ASA classification				0.126
I-II	112 (90.3)	59 (95.2)	53 (85.5)	
Pathologic diagnosis				0.158
Multinodular goiter	90 (72.6)	49 (79)	41 (66.1)	
Others [§]	34 (27.4)	13 (21)	21 (33.9)	
Gland size (cm) [‡]	3.3 ± 1.6	3.4 ± 1.6	3.2 ± 1.7	0.5

TOETVA implementation; [§]Others include Graves' disease, papillary carcinoma, or single-thyroid nodule/cyst; [‡] The largest diameter of thyroid gland from ultrasound; Values expressed as mean ± SD or number (%) of patients.

Table 2. Perioperative complications of study subjects

Variables	Total n = 124	Phase 1 n = 62	Phase 2 n = 62	p value
Total incidence of complications [‡]	91	57	34	<0.001
Massive subcutaneous emphysema	72 (58.1)	44 (71)	28 (45.2)	0.004
Difficult breathing with or without stridor	12 (9.7)	8 (12.9)	4 (6.5)	0.224
Rupture of endotracheal tube cuff	4 (3.2)	4 (6.5)	0	0.119
Cervical hematoma	2 (1.6)	1 (1.6)	1 (1.6)	1
Nasal-ala pressure sore	1 (0.8)	0	1 (1.6)	1
Pneumomediastinum or pneumothorax	0	0	0	NC [§]

*Values expressed as mean ± SD or number (%) of patients; [§]NC: Not calculated.

Conclusion

Although perioperative complications were not uncommon in patients undergoing TOETVA, most were minor without long-term sequelae. Furthermore, complication rate decreased with increasing experience. Our findings may provide insights into the prevention of TOETVA-associated perioperative complications.

References

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