

## **ROBOTIC TRANSORAL PERIOSTEAL THYROIDECTOMY (TOPOT): NATURAL ORIFICE TRANSLUMINAL ENDOSCOPIC SURGERY FOR THYROID GLAND**

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**Background/Purpose:** Although endoscopic thyroid surgery is gaining wide acceptance, however, existing endoscopic methods for thyroidectomy also have been blamed for necessity of more flap dissection and longer operative time. More recently, transoral endoscopic thyroidectomy have been reported to overcome the limitations of previous approaches. We have developed a new approach for transoral periosteal thyroidectomy(TOPOT) in cadaver studies and safety and feasibility were demonstrated in swine studies. Herein we present our initial experience of new robotic TOPOT in humans, which, to our best knowledge, had not been reported yet.

**Methods:** Between September and October 2012, three patients underwent robotic thyroid surgery using TOPOT, with da Vinci® surgical system, at the Korea University Anam Hospital. All patients were evaluated regarding recurrent laryngeal nerve function, intra- and postoperative complications, and postoperative outcome.

**Results:** Two lobectomy of thyroid for a follicular neoplasm and a nodular hyperplasia and a lobectomy of thyroid with central neck dissection for a papillary thyroid microcarcinoma were performed using a robotic transoral periosteal approach. There was no intraoperative bleeding necessitating conversion to open surgery. In one case, right mental nerve was stretched and torn during operation, so we performed the reconstruction of the mental nerve. This patient suffered from a paresthesia of the mental nerve, but it improved within 4 weeks. During postoperative course, there was no local infection at the incision site or within the anterior neck area. All three patients had no temporary vocal cord palsy.

**Discussion & Conclusion:** Robotic TOPOT might be feasible method of natural orifice transluminal endoscopic surgery for thyroid gland.