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Open Access Journal of Endocrinology

Transoral thyroidectomy with vestibular approach: a new technique in Colombia

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Case Report

Volume 1 Issue 2

Received Date: August 23, 2017

Published Date: September 06, 2017

Abstract

Recently, a transoral endoscopic thyroidectomy viavestibular approach (TOETVA) was performed in Colombia, preserving the most relevant anatomic elements and co the basic principles of surgery, including safety, adequate approach, avoiding bleeding and contamination during the procedure. The procedure had a duration of 210 minutes, had no peri or early postoperative complications, and patient was discharged home the same day of the procedure. Patient was reevaluated on postoperative day 3, with no hematoma, good cervical function and no post-operative complications. Pathology revealed follicular adenoma.

Keywords: Thyrodectomy , transoral , TOETVA

Introduction

Transoral endoscopic surgery was first described as an experimental approach in 2008 by Witzel et al [1]. Later, Anuwong used this technique in humans and published the first cohort of patients in 2015 [2].

TOETVA is a minimally invasive technique, and was developed as one of the natural orifice transluminal endoscopy surgery (NOTES).This approaches offers a clear advantage in cosmetic results, with a clear advantage over the classic procedures described by Kocher many years ago. However, higher rates of conversion to open surgery and surrounding tissue damage were reported initially but subsequently

decreased over time [3,4]. In this case report, we describe the first procedure of this type performed in Colombia.

Case Report

A 50-year-old female consulted was referred due to a solitary thyroid nodule located in the right thyroid lobule. The nodule measured 12x11x9mm, oval shaped with well-defined borders, heterogenous with a solid area of 2mm, small micro calcifications were present and with no extrinsic vascular supply. FNA was performed, reporting Bethesda IV, follicular neoplasia. After discussing and explaining to patient new surgical approach, patient provided informed consent and patient was scheduled to undergo TOETVA.

Surgical Technique

First phase of surgery: after nasal end tracheal intubation and general anesthesia, patient's neck is exposed using interscapular and cervical supports with head immobilization; the surgical equipment was set up as described in Figure 1. Surgical asepsis using iodine based product eye protection was performed.

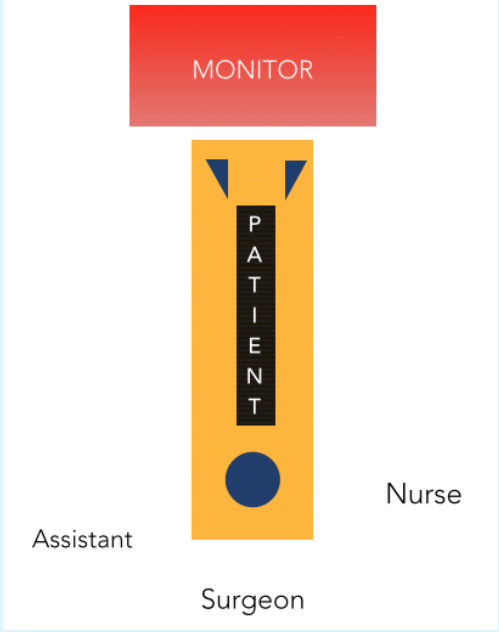

Figure 1: disposition of team and equipment in the operating room.

Second phase: the oral cavity was cleaned using a solution with chlorhexidine 0.05%. A after locating the central region of the oral cavity and the vestibular region, a 10-mm incision was performed and extended up to the mandible symphysis. Using Veres needle, subplastimal hydro dissection with approximately 20cc was performed in 3 axes (central, right and left). Caution to not surpassthe sternocleidomastoid muscle and avoid the great vessels was exerted. After blunt dissection of the subplastimal plane, a 10mm central trocar and 2 additional 5 mm trocar were placed at the level of the inferior molars, in order to prevent injury of the mental nerve, according to the technique described by Dr. Anuwong (Figure 3). Later, insufflations to 5-6 mmHg with CO2 and aperture of the planes were performed until reaching and fixating the parathyroid muscles.

Figure 2: position of patient with neck hyperextension, in supine position.

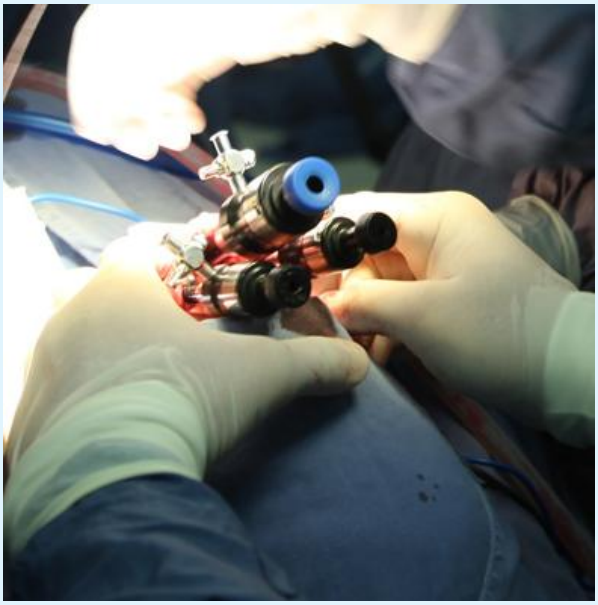

Figure 3: distribution of 10 mm and 5 mm trocarsin the oral cavity.

After ensuring a safe approach, an incision in the isthmus was made using last generation energy, and dissection of superior thyroid artery and vein with preservation of superior parathyroid glands was performed. Later, blunt dissection through the tracheoesophageal groove until identification of recurrent laryngeal nerve. The same procedure was repeated with the right lower thyroid lobule until exeresis and extraction of surgical piece (Figure 4). Intraoperative pathology reported 11x10x9mm follicular adenoma, which was later confirmed in definitive pathology, and surgical procedure was concluded. Patient was discharged home 7 hours after the procedure was concluded uneventfully (Figure 5).

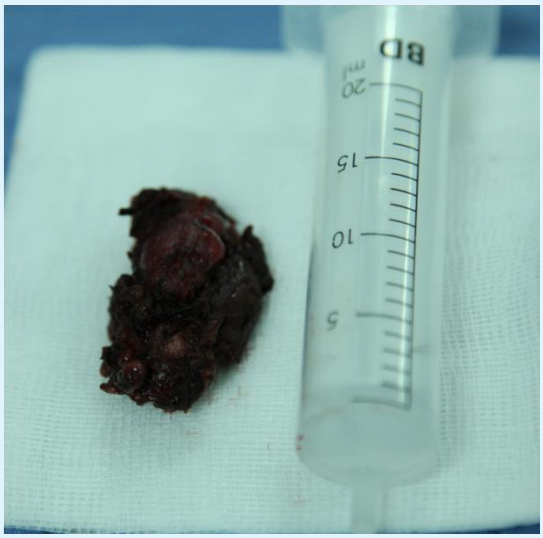

Figure 4: Right thyroid lobule and isthmus.

Figure 5: Postoperative day 3, no scar or wound visible in patient's neck.

Discussion

The evolution of thyroid surgery has not changed significantly until 20 years. The development of minimally invasive endoscopic techniques, initially implemented in abdominal and base of cranium surgery, showed satisfactory results after learning curves for the procedure were achieved by the surgeons. Based on this experience, novel approaches and techniques have been developed that compete with conventional procedures. Along with these new techniques, new devices and energies to achieve hemostasis have been developed, allowing safer interventions [5].

Endoscopic surgery, and it's implicit evolution, improve peri and postoperative quality of life, lead to a shorter and with less complication hospital stay and provide a better cosmetic result as compared to traditional approaches [6-13].

With our experience, as head and neck surgeons with endoscopic training, do not underestimate the limitation of this technique, described before by Diogni et al [14], and include patient's with undifferentiated cancer, thyroid cancer with high risk of relapse, nodal stage N1b, constant loss of CO2 insufflations, giant goiter, collision of instruments, prior radiotherapy and thyroiditis.

The surgical time was 210 minutes, with an approximate bleeding of 5 ml. The patient was discharged 7 hours after concluding the procedures, with no complications in the following days and in constant communications with the surgical team. Patient was reassessed after 3 days, with no functional disturbances found in patient's neck and in good overall condition.

Despite being a technique, which we consider, will be the future of thyroid surgical resection. In Colombia it is not implemented as the standard technique because of the cost that this represents for the health system (15-20% more than conventional thyroidectomy). However, cost- effectiveness analysis has not been carried out between the two techniques in Colombia.

Conclusion

Transoral endoscopic thyroidectomy via vestibular approach appears to be a safe and reproducible technique, with a positive impact in quality of life. Given the described limitations of this technique, we believe this approach represent a new alternative as long as patient is selected appropriately.

The authors do not have any conflict of interest to disclose.

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