DOI: http://doi.org/10.4038/cjo.v10i1.5317

Case Report

Transoral endoscopic thyroidectomy (TET), A successful first experience in Sri Lanka

Rizny MSM.[1]Tennakoon TMSB.[2]

[1]- Consultant Ent Surgeon, District General Hospital, Chilaw, Sri Lanka.
[2]– Medical Officer, Teaching Hospital, Kurunegala, Sri Lanka

Abstract

Transoral endoscopic thyroidectomy is a Natural orifice transluminal endoscopic surgery (NOTES) without a scar. It's feasible with a minimal dissection with aesthetically pleasing results. The main aim is to provide a thyroidectomy with a 'scar-free' surgery. This isa novel procedure, relying on the principles of natural orifice transluminal surgery (NOTES). We present a 60-year-old female with a right solitary nodule in the thyroid gland and FNAC was suggestive of a colloid adenoma(BETH-2).

The patient underwent a transoral endoscopic hemi thyroidectomy. Operative time was around 3 and half hours with minimal complications and is the one of the few documented cases in south Asia.

Keywords: Transoral thyroidectomy, Endoscopic thyroidectomy, NOTES, Thyroidectomy, solitary nodule

Funding: None
Competing interest: None

Correspondence: Dr. M S M Rizny(riznysakkaff@gmail.com)

Published Date: 31st December 2021

Introduction

Thyroidectomy endoscopically, has been performed since the late '90s. The first ever endoscopic parathyroidectomy done in 1996 [1] introduced minimally invasive surgery in the neck. These surgeries can be divided into cervical approach and extra-cervical approach [2]. The direct approach means a incision being done over the neck with the thyroidectomy done in the usual manner. The extra-cervical approaches include axillary, Retro auricular and peri areolar approaches. Even though endoscopic thyroidectomy may not be a novel technique, transoral endoscopic thyroidectomy (TET) is a recent technology. Studies on the possibility of this technique was performed on cadavers [3], very few case reports of TET being performed on live patients are documented. Endoscopic thyroidectomy via other pathways such as trans axillary and peri areolar pave the way for a patient with a minimal scar and with a fair amount of dissection, as it involves not going through natural anatomical planes. The transoral approach is scar free with minimal dissection, resulting in reduction of post-operative complications.

Case report

A 60year old female was admitted with complaints of a lump on right side of the neck for the past 2 years. She had no complaints of pain or any other related symptoms. Examination showed a 2 × 2 cm swelling on the right lobe of the thyroidwhich was soft to firm in consistency. Ultrasound scan neck showed a solitary nodule of the thyroid. FNAC suggested a colloid adenoma, BETHESDA 2 category. In view the small size of the lump, she was planned to undergo transoral endoscopic thyroidectomy.

Operative technique

Pre-operative preparation

Pre-operatively, she was advised to gargle with betadine mouth wash twice a day for 3 days.

Body position

The patient was placed in a supine position with the neck extended using a sand bag kept along her shoulders.

Procedure

The mouth was cleaned with saline and Betadine. Transnasal Endotracheal intubation was done. An inferior vestibular approach through oral cavity was done and the ports were placed accordingly. One midline 10 mm camera port and two 5 mm working ports on either side (Fig. 1). Then, carbon dioxide was insufflated into the operative field. This provides easier access. The sub-platysmal plane was dissected. The deep fascia was dissected and strap muscles retracted. The thyroid isthmus was identified and dissected. The inferior and superior pedicles on right side were identified, divided and stapled. The recurrent laryngeal nerve was easily visualized and preserved. Haemostasis was achieved. The gland was taken out through the oral cavity along with camera. Absorbable sutures were used to close the deep fascia, and the vestibular port sites were closed in same manner.

Figure 1 – Placement of ports for TET

Discussion

Cosmetic appearance plays a major role in choosing the type of surgery we do. Natural orifice transluminal surgery (NOTES) was popularized due to its option of providing patients with a 'scar less' surgery. General surgeons perform cholecystectomies successfully using the technique of NOTES, how ever performing thyroid surgery remains a relatively uncommon.

In late 1990s, endoscopic thyroid surgeries emerged. Approaches such as trans-axillary and trans-areolar were successful with minimal scarring. They could be hidden but involved significant dissection due to no natural anatomic planes [4]. In 2007, Witzel et al [5] tried performing thyroidectomy via the transoral approach. Their studies on cadavers and porcine noted it to be a safe procedure. In 2012, Nakajo et al [6] presented their findings of Trans-Oral Video-Assisted Neck Surgery (TOVANS) performed on live patients.

Our patient, was insufflated with carbon dioxide. The procedure took three and half hours. No postoperative emphysema developed. Even though it was a clean surgical field, the entry port, the inferior vestibule, is not sterile, thus, she was started on oral antibiotics and antiseptic mouthwash to prevent wound infection. She started Oral intake on post-op day one and was discharged in 4 Days time. After one month post-operatively, she was comfortable(Figure 2).

The following goals were achieved.
(1) Approached the thyroid gland using minimal dissection.
(2) Patient had no visible scar.

Possible complications of the procedure are Recurrent nerve palsy(temporary/permanent), hypocalceamia, CO_2 embolism, cervical soft tissue infrection and mental nerve damage. However we didn't encounter any complications in our patient.

Figure 2 – Post operative Neck appearance at one month.

Conclusion

Transoral endoscopic thyroidectomy is a comfortable procedure which can be at the frontier in endoscopic thyroid surgery. Even though it has been performed successfully in thyroid carcinoma [6], we noted it to be useful in solitary nodules of the gland. This procedure is still in its early stage but, with more patients willing to undergo'scar free' surgery, it has the potential to become mainstream.

References

1. Gagner M. Endoscopic subtotal parathyroidectomy in patients with primary hyperparathyroidism. Br. J. Surg. 1996;83(6):875.https://doi.org/10.1002/bjs.1800830656. PMid:8696772
2. Wong K.-P., Lang Brian H.-H. Endoscopic thyroidectomy: a literature review and update. Curr. Surg. Rep. 2013;1:7-15.https://doi.org/10.1007/s40137-012-0003-9
3. Witzel K., von Rahden B.H.A., Kaminski C., Stein H.J. Transoral access for endoscopic thyroid resection. Surg. Endosc. 2008;22:1871-1875.https://doi.org/10.1007/s00464-007-9734-6. PMid:18163167
4. Tan C.T., Cheah W.K., Delbridge L. Scarless (in the neck) endoscopic thyroidectomy (SET): an evidence-based review of published techinques. World J. Surg. 2008;32(7):1325-1332. https://doi.org/10.1007/s00268-008-9555-3. PMid:18360737
5. Witzel K., von Rahden B.H.A., Kaminski C., Stein H.J. Transoral access for endoscopic thyroid resection. Surg. Endosc. 2008;22:1871-1875.https://doi.org/10.1007/s00464-007-9734-6. PMid:18163167
6. Akihiro N., Hideo A., Munetsugu H. Trans-Oral Video-Assisted Neck Surgery (TOVANS). A new transoral technique of endoscopic thyroidectomy with gasless premandible approach. Surg. Endosc. 2013;27:1105-1110.https://doi.org/10.1007/s00464-012-2588-6. PMid:23179070 PMCid:PMC3599170