

Minimally-invasive endoscopically-assisted neck dissection for lateral cervical metastases of thyroid papillary carcinoma

Zongmin Zhang^{a,*}, Zhengang Xu^a, Zhengjiang Li^a, Changming An^a, Jie Liu^a, Yiming Zhu^a, Song Ni^a, Pingzhang Tang^a, Anna Sayan^b, Velupillai Ilankovan^b

^a Cancer Hospital, Chinese Academy of Medical Sciences, Beijing, China

^b Poole Hospital NHS Foundation Trust, Poole, Dorset, UK

Accepted 20 May 2014

Available online 10 July 2014

Abstract

Traditional open operations for lateral neck dissection in patients with papillary thyroid carcinoma leave an unsightly scar. We report complete lateral neck dissection and thyroidectomy for papillary thyroid carcinoma using an endoscopically-assisted approach through a small incision, and evaluate its feasibility and safety. Between March 2010 and January 2013, 6 patients with no definite metastases to the lymph nodes at levels II–IV, and 20 with definite metastases to the lymph nodes at levels II–V were selected. Thyroidectomy, dissection of the central compartment (level VI), and ipsilateral level II–IV and II–V neck dissections were done through a small incision in the neck. The steps of endoscopic lateral neck dissection were similar to those of conventional operations. The mean operating time for the whole procedure was 3.57 hours (range 2.5–5.0). It was successful in all patients and there were no serious complications or serious blood loss. A total of 21 patients had lymph node metastases in the central and lateral zones. The mean yield of lymph nodes was 38.6 (range 16–61). There was no evidence of residual or recurrent disease at follow-up, and the cosmetic result was excellent. Minimally invasive, video-assisted comprehensive neck dissection for metastatic papillary thyroid carcinoma is feasible and safe, and has excellent cosmetic results. Further studies with a larger number of patients and long-term follow-up are needed to verify its oncological validity.

© 2014 Published by Elsevier Ltd. on behalf of The British Association of Oral and Maxillofacial Surgeons.

Keywords: Thyroid; papillary carcinoma; endoscopy; neck dissection

Introduction

Papillary thyroid carcinoma can metastasise to cervical lymph nodes from level II to level V. The rate of spread to level V is about 18%–22.5%. The traditional neck dissection approach for removal of lateral cervical metastases is through an extended collar incision which is about 14–18 cm long. As these tumours mostly occur in young or middle-aged women, a long scar may cause concern aesthetically and is a tell-tale sign of a diagnosis of cancer.^{1–4} A neck

dissection involving levels III to IV using a “scarless approach” has been reported;⁵ some authors have used the axillary and subclavian approaches, and some have used 2 incisions.^{6–9} However, in many centres there has recently been a growing interest in an endoscopically-guided small incision approach for thyroidectomy and neck dissection.

We have developed a technique for comprehensive neck dissection that involves levels II to VI through a 5 cm incision. We describe the technique and review the outcome.

Patients and methods

Between March 2010 and January 2013, 26 patients had small incision and endoscopically-assisted neck dissections. There

* Corresponding author. Fax: +01202 448410.

E-mail addresses: velupillai.ilankovan@poole.nhs.uk, jane.porter@poole.nhs.uk (Z. Zhang).

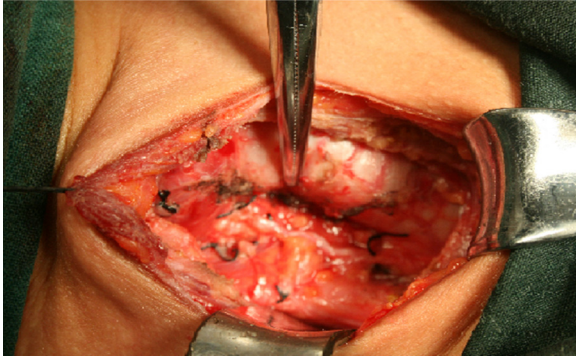


Fig. 1. Image taken after dissection of the central compartment and thyroidectomy.

were 21 women and 5 men, mean age 39 years (range 28 – 56). All patients had papillary carcinoma of the thyroid with enlargement of the lateral cervical nodes. They were investigated using colour ultrasound or computed tomography, and all were listed for minimally invasive, endoscopically-assisted neck dissection and thyroidectomy under a general anaesthetic. Six had total thyroidectomy, 19 had unilateral thyroidectomy and isthmectomy, and one also had contralateral subtotal thyroidectomy. Six patients had levels II to IV and level VI neck dissection; in the rest level V was included also.

Surgical technique

The extra instruments needed for the technique are: a 30°, 4 mm diameter endoscope (Karl Storz GmbH & Co, Tuttlingen, Germany); Harmonic scalpel (Ethicon); tonsil forceps and long toothed forceps; a 12.5 cm narrow and deep hook, and middle and long straight electric blades (Covidien Valleylab™, Boulder, USA).

A sandbag is placed under the patient's shoulders to extend the neck, and the anatomical landmarks of the mandibular border, anterior margin of the trapezius, and the sternocleidomastoid muscles are marked. A 5 cm incision is made on the tumour side about 3 cm above the clavicle and is extended down to the subplatysmal level. Superior, inferior, lateral, and anterior subplatysmal flaps are raised to expose the anterior and posterior triangles of the neck.

The strap muscles are split in the midline and traction is applied to one side over the ipsilateral muscles to expose the thyroid gland completely. A Harmonic knife is used to cut the thyroid vascular branches while preserving the parathyroid glands, and the recurrent laryngeal nerves are carefully dissected.

Attention is then focused on the central compartment (level VI). This embraces the pretracheal and ipsilateral paratracheal lymph nodes, soft tissues, and partial thymus gland. The lateral border of the carotid sheath is dissected, and if necessary, the superior mediastinal lymph nodes (Fig. 1).

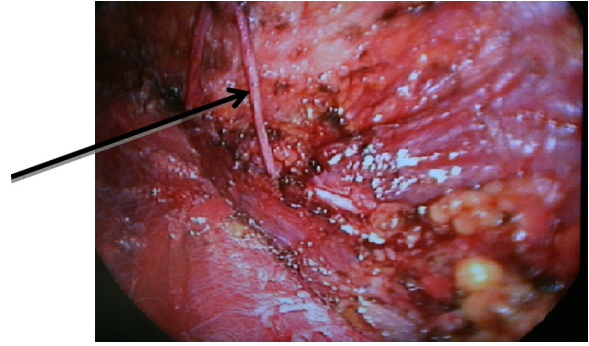


Fig. 2. Right accessory nerve (arrow) to the trapezius muscle.

The sternocleidomastoid muscle is then freed to allow preservation of the external jugular vein and the great auricular nerve. The latter provides the landmark that helps to identify the accessory nerve. However, if further tumour clearance is required, these structures can be resected along the parotid tail. The trapezius branch of the accessory nerve is identified along the posterior border of the sternocleidomastoid muscle at about 1.5 cm above the great auricular nerve. The sternocleidomastoid muscle must be freed up to the posterior belly of the digastric muscle and the dissection done anteriorly to trace the accessory nerve (Fig. 2).

Soft tissues are then separated from the strap muscles and the tendon of the omohyoid muscle is cut off to expose the internal jugular vein and its anterior branches. The superior thyroid artery is preserved and the internal jugular vein is mobilised to expose the prevertebral fascia, taking meticulous care to avoid injuring the carotid vessels and the vagus nerve.

After retraction of the posterior belly of the digastric muscle the dissection proceeds to level IIa and b from the prevertebral fascial attachment. Whenever possible, the carotid plexus and the ansa are preserved (Fig. 3). The dissection is then advanced down to levels III and IV (Fig. 4).

When the dissection proceeds to the posterior triangle, the accessory nerve is carefully traced to the anterior border of the trapezius muscle. Once the nerve is preserved, the posterior triangle is dissected caudocranially. The transverse cervical artery and vein, brachial plexus, and phrenic nerve are all preserved with careful dissection. The thoracic duct is also spared as it joins the internal jugular vein.

Lastly, haemostasis is achieved, suction drains are placed in the most suitable position, and the incision is closed in layers (Fig. 5).

Results

All patients had papillary carcinoma of the thyroid: 8 cases were T1; 6 were T2; 10 were T3, and 2 were T4. Five patients were N0, and 21 were N1b. There were no distant metastases.

Patients' details are shown in Table 1. The total operating time varied from 2.5 to 5 hours (mean 3.5). The only serious complication, injury to the trapezius branch of the accessory

Download English Version:

<https://daneshyari.com/en/article/3123397>

Download Persian Version:

<https://daneshyari.com/article/3123397>

[Daneshyari.com](https://daneshyari.com)