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CPH *Pulse*

News & Information from
Campbelltown Private
Hospital

Dr Andrew Ong



Campbelltown
PRIVATE HOSPITAL

Indications for thyroid

In 1844, Dr Robert Liston published in The London Lancet, an article on thyroidectomy, famously quoting: *"...one cannot cut the thyroid gland out of the living body in its sound condition without risking the death of the patient from haemorrhage"*. It is reassuring to know that advancements in surgical techniques have transformed thyroidectomy into what is now a safe and routine operation.

Hemi-thyroidectomy is a day-only procedure in selected cases and total thyroidectomy is routinely an overnight procedure. Higher surgical case volumes have been shown to translate to improved outcomes and a recently published article (ref 1) recommended a caseload of 25 thyroidectomies/year to be regarded as a "high volume surgeon" although it is accepted that >80 thyroidectomies a year is desirable. Our Endocrine Surgery unit at Campbelltown Macarthur carried out 128 thyroidectomy/parathyroidectomy operations in the 2016 calendar year and we are optimistic this will continue to grow with the region.

Thyroidectomy is recommended for a variety of reasons. One of the main indications is thyroid cancer or a suspicion of cancer. Thyroid cancer is one of the lesser known malignancies in Australia, with a 1 in 70 lifetime risk (in contrast to a lifetime breast cancer risk of 1 in 8 for instance). Patients less than 45 years of age with differentiated thyroid cancer (papillary & follicular) generally have a favourable prognosis with surgical treatment, even with nodal metastases. Surgery involves a hemi or total thyroidectomy with or without neck dissection. Depending on the extent of surgery, the patient may incur only an overnight stay in hospital. Follow-up treatment may involve radioiodine ablation which involves a 3 day stay in hospital. Diagnosis of thyroid cancer is often serendipitous, with identification of suspicious thyroid nodules from ultrasound or CT scans followed by fine needle aspiration biopsies. Thyroid cancer can also sometimes be found within multinodular goitre specimens as an incidental finding following thyroidectomy (see next paragraph).

Another common indication for thyroidectomy is multinodular goitres. Goitre is a general term to describe thyroid enlargement and nodularity is common, present in about 10-15% of the Australian population. The average

volume of a normal thyroid gland in an adult is between 15-20 g. Progressive growth of the thyroid gland occurs over decades, driven by differing sensitivity of thyroid tissue to TSH stimulation, goitrogens, family history, and occasionally malignancy. Multinodular goitres present to the GP because of cosmesis concerns, pressure symptoms, dysphagia, dysphonia, or can be detected incidentally on imaging of the chest and neck. There is no clear consensus to what is a retrosternal gland; with definitions ranging from 5 cm below clavicle to 50% of the gland below the thyroid notch. Multinodular goitre is a challenging surgical condition; the multitude of nodules themselves present a dilemma for the clinician attempting a biopsy (which nodule and how many to biopsy), while large goitres are a technical challenge during surgery. Improvement in techniques have led to the vast majority of thyroidectomy performed through the cervical route, rarely requiring a sternotomy. There have been a number of studies over the years looking at the incidence of malignancy within multinodular goitres (ref 2,3,4,5) with published reports of occult malignancies ranging from 9-35%. Factors associated with occult malignancy include young age, male gender, symptoms/signs (dysphonia, dysphagia, palpable nodes) as well as concerning imaging findings (calcifications, vascularity, lymphadenopathy). The endocrine surgeon will consider these factors when recommending thyroidectomy.

Another indication for thyroidectomy is Graves' disease. This is a fascinating condition managed initially by endocrinologists. There is good evidence that surgical treatment should be preferred particularly in the younger patient. Surgery is highly effective and often recommended for patients with recalcitrant disease, significant eye disease, intolerant to antithyroid drugs, or those adverse to radioiodine. It is preferred in patients with larger goitres. Thyroidectomy for Graves' disease is challenging, satisfying due to its high cure rate, and may potentially arrest or reverse ophthalmopathy. Incidental cancer detection rates of 7% have been reported in a recent study (ref 6). Patients are prepped with Lugol's iodine, and are managed in conjunction with the endocrinologist during the perioperative period.

Thyroidectomy is also indicated in patients with biopsy-proven Bethesda category 4 nodules, repeated biopsies

thyroidectomy

Dr Andrew Ong

General, Breast and Endocrine Surgeon

BHB, MBChB, FRACS

showing Bethesda category 1 or Bethesda category 3 nodules (atypia of undetermined significance). In our unit, surgery is often performed with nerve monitoring to decrease the risk of permanent recurrent laryngeal nerve injury and flexible laryngoscopy routinely performed before and after surgery to document vocal cord function. The risk of permanent recurrent laryngeal nerve palsy should be less than 1%. The risk of temporary hypoparathyroidism following total thyroidectomy in experienced hands, should be less than 15% with the risk of permanent hypoparathyroidism less than 5%.

References:

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4. Are there predictors of malignancy in patients with multinodular goiter. Luo et al. J Surg Res 2012 174(2): 207-210.
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6. Thyroid cancer in Graves' disease: is surgery the best treatment for Graves' disease? Tamatea et al. ANZ Journal of Surgery. 84(4):231-4, 2014 Apr.

About Dr Andrew Ong

Dr Ong graduated from the University of Auckland in 2001 and trained at Royal Prince Alfred and Concord Hospitals.

His VMO appointments include Campbelltown Public and Private Hospitals. Academic appointments include a Conjoint lectureship at the University of Western Sydney and assistant editor to the ANZ Journal of Surgery.

He is accredited by the Gastroenterological Society of Australasia (GESA) for gastroscopy and colonoscopy

work and is a member of Breast Surgeons of ANZ, Australian Medical Association (AMA) and General Surgeons of Australia.

Areas of Special Interests

- Management of malignant and benign breast diseases
- Surgical management of thyroid and parathyroid diseases
- Laparoscopic general surgery - Gallbladder & Hernia repairs (including WorkCover)
- Endoscopy



To arrange for a patient consultation with Dr Ong, please contact:

127/4 Hyde Parade, Campbelltown NSW 2560

T: 02 4629 0900 | F: 02 4628 0735