

Is an endoscope necessary to undertake thyroidectomy?

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Introduction

Endoscopy is derived from Greek and means “viewing the inner spaces of the human body” (“endo” and “skopein”) [1]. Minimizing tissue damage and enhancing the cosmetic outcome have been pivotal concerns in modern surgery. Any procedure with minimum pain and scarring is readily acceptable patients.

Laparoscopic techniques were for known about 100 years [1], but the advantages of laparoscopic surgery were taken note of, following the performance of the first laparoscopic appendectomy by Kurt Semm a Gynaecologist in 1980 [2]. This technique made a significant difference to outcomes especially in surgical procedures for organs deep in body cavities. Addition of a robot to this procedure made it appear more modern and technologically advanced.

Laparoscopic cholecystectomy was the operation that popularized laparoscopic surgery among the general surgical community. In the next few decades there was exponential growth in use of laparoscopic and robotic techniques in many forms of surgery and open surgical techniques were superseded by endoscopic techniques. The inevitable introduction of endoscopic techniques to extirpation of the thyroid gland took place including the performance of robotic thyroidectomy.

The technique of thyroidectomy

The technique of open thyroidectomy has been converted to fine art due to the efforts of pioneers in thyroid surgery including the 'father of thyroid surgery Theodore Kocher. The safety and efficacy of open thyroidectomy prompted William Halstead of John Hopkins Medical school to state in 1920 to claim “*The extirpation of the thyroid gland...typifies, perhaps better than any operation, the supreme triumph of the*

surgeon's art.... A feat which today can be accomplished by any competent operator without danger of mishap and which was conceived more than one thousand years ago.... There are operations today more delicate and perhaps more difficult.... But is there any operative problem propounded so long ago and attacked by so many...which has yielded results as bountiful and so adequate?” [3].

The current rate of complications in open thyroidectomy is around 1-2% which has made it a very safe surgical procedure in the modern era [4].

The thyroid is a surface structure approached readily by a fine skin crease incision which will produce an almost invisible scar in majority of patients. With the explosion of endoscopic surgery in the last 3 decades it was inevitable that surgeons started performing Endoscopic/Robotic thyroidectomies (E/RT). The primary purpose of minimizing tissue damage and being minimally invasive is totally negated by the introduction of endoscope to thyroidectomy as gaining access to the thyroid necessitate moving far away from the gland and approaching it with a long telescope causing maximum tissue damage. The purported advantages of better magnification and avoiding a scar in front of the neck while being true, tends to downplay the tissue damage it causes. Several studies have shown that there is no particular advantage in terms of complications duration of surgery and cost effectiveness when E/RT is compared with open thyroidectomy in fact, a higher pain score and new complications like chest wall paresthesia have been recorded [5], [6], [7].

While adopting newer techniques and updating training methods is essential for progress caution must be exercised when introducing new techniques, especially those involving expensive equipment like endoscopes Robots etc. to surgical practice. Surgeons like to 'play with new toys'

Unless it can be irrefutably shown that the newer techniques benefit the patients significantly advocating the use of such techniques must be done with a lot of caution. In addition, all surgeons undertaking E/Ro thyroidectomy must be well versed in open thyroidectomy to deal with the need to convert.

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If centre focus only on E/Ro thyroidectomy that raises questions about training young surgeons on the open technique.

It can be stated that E/Ro thyroidectomy is here to stay. But the role of E/RoT needs to be better defined, cost effectiveness established especially in a developing economy and sufficient expertise gained before it is, used due to the difficult learning curve. The role of E/RoT in dealing with thyroid malignancy effectively needs to be established with properly designed studies.

It appears that the E/RoT have a very limited role in thyroidectomy. This technique needs to be practiced in specialized centres with a policy of careful patient selection. Even in countries like the USA robotic thyroidectomy is losing favour [8]. In contrast in some countries like Korea RT is a popular option offered to patients [9],[10]. Lack of an endoscope does not preclude the performance of a safe, cosmetically acceptable and cost effective, thyroidectomy. Each country must adopt a policy that suits its needs and more than anything, the methods that offers the best to the patient and is affordable to the health care system.

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