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TRACHEAL INJURY DURING THYROID SURGERY

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Introduction

Tracheal injury in general is relatively rare and during thyroid surgery is extremely rare[1]. Clinical awareness of general and endocrine surgeons regarding this possible complication is so important to avoid serious sequelae of tracheal perforation during surgery.

No published specific reports describing tracheal injury and their management during thyroid surgery. The most common cause for iatrogenic tracheal injury was endotracheal intubation[2]. In this paper, we would like to report the experience of four general surgeons from four major hospitals in Basrah regarding tracheal injury during thyroid surgery.

Patients and methods

A postal survey comprising a questionnaire was randomly sent to four general surgeons, each surgeon is working in one of the major hospitals in Basrah with more than fifteen years experience in thyroidectomy.

The questionnaire covered various aspects of tracheal injury during thyroid surgery including; patient demographics, indication for operation, operation performed, tracheal injury diagnosis and awareness of surgeon, type of tracheal repair and outcome were evaluated.

The study group comprised all patients who had thyroid surgery from randomly chosen general surgeons in Basrah, each surgeon is working in one of the major hospitals in Basrah.

Data were obtained retrospectively from these four major hospitals. Excluded patients were those undergoing planned tracheal resection because of invasion by locally invasive thyroid cancer.

Results

There were four inadvertent tracheal perforations documented among 6600 thyroid operations, an incidence of 0·06 per cent. The patients ranged in age from 25 to 50 years and all were women. All were primary procedures; there were no reoperations.

In three patients the pathology was benign and the final patient had malignant tumor.

Three patients had subtotal thyroidectomy and one had total thyroidectomy.

In all patients the tracheal perforation was recognized and repaired at the first operation, under antibiotic cover.

All patients had an uneventful recovery without additional intervention in relation to the tracheal injury. In all patients the perforation was noted to be small ranging from 0.5cm to 1cm. There were no deaths or other long-term complications in all patients.

Discussion

Although it is rare entity but possible, tracheal perforation appears to be exceedingly rare[1]. In this paper it occurred in less than one in every 1000 thyroid operations; for most general

surgeons the mean lifetime experience of such a complication is less than one patient, so it is unlikely that any individual will gather sufficient data to report the management of a series. Tracheal perforation is generally not considered a complication as such, but rather a technical occurrence during surgery that requires expeditious attention[1].

Early recognition and prompt surgical treatment is the gold standard management. Although all patients recover uneventfully after primary repair, secondary complications such as subcutaneous emphysema, pneumothorax and wound infection may occur as published in other studies[1].

We studied well documented thyroid operations across four hospitals by randomly chosen general surgeons in each and found that there were four inadvertent tracheal perforations in over 6000 thyroid operations, an incidence of 0·06 per cent. The perforation was recognized at the first operation in all patients. Generally these perforations were small and occurred in the posterolateral trachea in most cases, either following attempted suture ligation of vessels in the region of the ligament of Berry or with the use of diathermy adjacent to the trachea (Fig.1). Once identified, all perforations were repaired primarily, some with a buttress of adjacent strap muscle. Patients had uniformly increased length of hospital stay.

In our paper where most tracheal injuries were antero- and postero -lateral and small size and extent and no fistula result or complication has reported despite no use in three cases and use in one case.

Tracheal injury occurred in patients with both benign and malignant disease, three patients were benign and one patient was malignant and because benign thyroid disorder is much more common than malignant disorders so we can guess that no difference concerning injury in our study.

Operatively, proper dissection, tissue retraction and clinical awareness of surgeon are gold standard triad to avoid this injury. Dissection in normal planes and care in serious thyroid surgery steps are of value to avoid this injury in particular dissection and deal with posterolateral and lateral thyroid attachments with trachea where most injuries took place. In malignant disorders the invasion of tumor makes the dissection difficult and in benign disorders the multicystic and longstanding goiter was frequently difficult and risky for injury because distorted planes of dissection with fibrous attachments[3].

Retraction of tissue is important and should be in delicate oriented pattern as it might distort the normal dissection plane in dangerous places.

Clinical awareness by the surgeon of this injury is the master of prevention as proper knowledge and orientation in the anatomical and operative consideration could be a reasonable issue for diagnosis and management in appropriate ways.

Collaboration between surgeons and anesthesiologists as a team is so important in management and determining the outcome of the injury.

Early postoperative period is of great importance. To ensure good recovery a prophylactic broad-spectrum antibiotic, chest physiotherapy and pain relief are essential, and that importance was mentioned in other literature of blunt tracheal injuries in postoperative period[4,5].

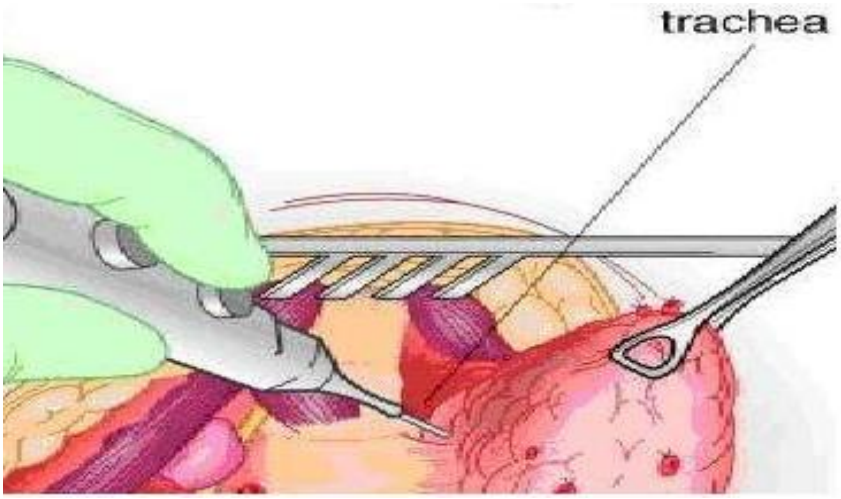

Figure 1: Thyroid relation to trachea

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