

## Total thyroidectomy without the use of drainage - case series of 66 patients

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**ABSTRACT: Aim:** The aim of this series is to study the need of drainage use after total thyroidectomy. **Material and Methods:** Retrospective study of a series of patients who underwent total thyroidectomy from 2005 up to 2013. The presence or not of hematomas, seromas and hemorrhage were recorded. **Results:** Out of the 66 patients included in this series, only one case of post-operative hematoma was recorded. Neither a hemorrhage nor a seroma were identified despite the volume, the underlying pathology and the co-morbidity of the patients involved. **Conclusion:** In our experience a thyroidectomy with adequate hemostasis does not require the use of drains.

**KEYWORDS:** total thyroidectomy, hematoma, drainage, complications

### Introduction

The routine use of drainage after thyroidectomy arises from the past in order to decrease the risk of acute airway obstruction caused by hemorrhage or postoperative hematoma or seroma [1,2]. However, many problems have been reported by the use of drainages without any significant proving of its advantages [3].

As a result, using drainages in thyroid surgery as a routine surgical practice, with no scientific evidences to support their benefits, has become controversial. To solve this controversy, some randomized controlled trials [4-16] and two meta-analysis [17, 18] have been performed. These trials could not identify a statistical difference in the rates of neck hematomas/seromas between groups using drains or not.

### Material and Methods

Our series of non-drainage total thyroidectomies is presented, comprising of 66 patients over an 8-year period. Adult patients admitted for elective total thyroidectomy with preoperative diagnosis of benign or malignant condition participated. No case selection for non-drainage was employed. A total thyroidectomy plus an isthmectomy was performed to all the patients. The indications for surgery, procedure performed and local complications (seroma, bleeding, hematoma), were recorded for all of the patients. The outcomes were observed and recorded.

### Results

Between January 2005 and September 2013, 66 total thyroidectomies without drainages were

performed. The mean age of the above patients was  $45.9 \pm 11.7$  years (range 22-79). The male to female ratio was 1: 7.25.

The patients' characteristics including gender, age, hormonal status and histopathological results are presented in Table 1. The mean volume of the thyroid gland was  $55.8 (17.3-120.4) \pm 21.56$ ml.

Only one patient (1.5%) presented hematoma in the first post-operative day. Symptoms included a sudden increase in neck volume and mild dyspnea. The patient was treated with bandage. None of the patients required a second surgical intervention for any reason.

Table 1.Characteristics of the study group

Age	45.9 ± 11.7 y (22-79)
Gender (Male/Female)	8/58
Benign	94%
Malignant	6%
Toxic	15%
Non-toxic	85%

### Discussion

This review presents our experience regarding the necessity of drainage after total thyroidectomy. Drains have been traditionally used in most of the surgical procedures despite the limited evidence to suggest that they provide any benefits. The life-threatening complication of a suffocating hematoma or bleeding appears very rarely (0.3 to 2.5%); however, it can be a big challenge for both surgeons and anesthesiologists, when presented. The risk increases in patients with intrathoracic goiter as well as those suffering from Graves' disease. Suffocating hematomas tends to appear between two and six hours after surgery. Possible causes

for this complication include displacement of an improperly applied suture, the opening of a vessel in which diathermia was used for coagulation, or “drooling” of an area that has been improperly cauterized [19]. Despite many prospective randomized studies and meta-analyses, the issue of routine use of drains in thyroid surgery remains controversial. The reasons include attitudes of individual surgeons, the size and extent of the operative field, and fear of tracheal compression from major postoperative bleeding. Many senior surgeons, who have used drains successfully throughout their careers will continue to use drains in thyroid surgery. Surgeons generally will use drains if there is a large dead space, a concern for bleeding, an “oozing” thyroid bed, or if any other unusual concern about postoperative accumulation of blood or fluid beneath the skin flaps. Though the drains do not prevent hematoma, observation of blood issuing from the drains in the immediate postoperative period may expedite early diagnosis of significant hemorrhage. Such hemorrhage, confined to a closed space around the trachea may compromise the airway. Drains alone cannot decompress an expanding hematoma from major arterial bleeding, and the complication must be treated by immediately reopening the wound. The majority of surgeons today use a portable closed suction drainage system. The fear of retrograde contamination has been expressed, but is generally not accepted as a significant cause of postoperative infection. In general, the overall use of drains in thyroid surgery appears to be very selective and almost 80% of the thyroid surgeries, at the present time, are performed without the use of drains. Meticulous hemostasis and an adequate surgical technique are the keys for avoiding hemorrhage and hematoma formation.

## Conclusion

According to international literature, there are no significant evidences supporting the use of drainages after total thyroidectomy as they do not seem to decrease the rate of post operative complications. Concluding, the use or not of drains depends on the individual character of each surgeon.

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