

ORIGINAL RESEARCH

Is Drain After Thyroidectomy Necessary In Modern Era?

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Received Date: 09 November 2022

Accepted Date: 18 December 2022

ABSTRACT

Background: To evaluate the effectiveness of non-drainage of thyroid bed post thyroidectomy. **Methods:** This is a prospective study. Patients undergoing thyroidectomies from January 2017 to January 2022 under Surgical ward ESIC Hospital, Kalaburagi were included. Drains were not used after thyroidectomies during this period. USG Neck (day 2) and USG Neck (day 12) to look for post-operative hematoma (operated bed). **Results:** A total of 120 procedures were done. Mean age of the patients included in this study is 36 years. The parameters assessed in our study are Bleeding, airway compromise, seroma, surgical site infection, Length of hospital stay. In our study of no drainage of thyroid bed, there was one patient with hematoma formation. There was no airway compromise or seroma formation. There were four patients who had surgical site infection in our study. One patient had to undergo reoperation for completion thyroidectomy. **Conclusion:** The findings from our study are found to be consistent with previous studies. With this study we can conclude that usage of drains in thyroid surgery does not show any decrease in hematoma and seroma formation and is associated with increased hospital stay and postoperative pain. **Keywords:** Thyroidectomy, drainage, thyroid bed, thyroid cancer.

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INTRODUCTION

In routine practice, surgical drains are inserted to drain existing collections (e.g. pus, blood, bile); to drain potential collections; to divert fluid away from a blockage or potential blockage; to allow irrigation of a cavity; to minimize dead space in a wound and prevent seroma formation; to decompress and allow escape of air (chest drain). There is little evidence to support the widespread use of drains in surgery and their use remains controversial. ^[1]

It has been controversial whether drainage should be used after thyroid surgery. The major concern after thyroid surgery is the formation of hematoma or seroma. Although the incidence of hematoma is as low as 0% to 2.6%, ^[2-5] postoperative hematoma may lead to life-threatening airway compression. Many surgeons take for granted that drainage following thyroid surgery would obliterate the dead space and evacuate the accumulation of blood and

serum. However, there is no supportive evidence so far about usage of drains. Accumulating studies have shown that insertion of a drainage tube did not benefit patients after thyroid surgery.^[6-10]

The Cochrane review, published in 2007, concluded that there is no clear evidence showing drainage can bring benefits to patients' outcome, inversely it is associated with longer hospitalization.^[7]

A neck hematoma requiring reoperation develops after operation in approximately about 1 of every 150 thyroidectomies.^[18-20] The hematoma usually appears within the initial 6 hours after the completion of the procedure, though with anticoagulation, the hematoma can appear up to several days later. This complication is presented as increasing pain, neck swelling, and often marked anxiety. The hematoma formation can occur either between the platysma muscle and the stern hyoid muscles (superficial) or deep to the strap muscles along the larynx (deep). The deep hematomas are the ones that are more dangerous, as they can be sequestered on one side of the larynx causing a shift and compression of the airway. While a minority of patients with postoperative hematomas develop airway compromise requiring emergent evacuation at the bedside, this possibility exists with every neck hematoma.^[16]

Surgery for thyroid malignancy usually requires central or lateral lymph node dissection, leading to larger dead spaces and more chances of formation of hematoma or seroma. In this case, insertion of a drainage tube is considered necessary.^[17]

MATERIALS AND METHODS

This is a prospective study.

1.1 Data source and Study selection

- ❖ Patients undergoing thyroidectomies January 2017 to January 2022 under Surgical ward ESIC Hospital, Kalaburagi.
- ❖ Drains were not used after thyroidectomies during this period.
- ❖ USG Neck (day 2)
To look for post operative hematoma, (operated bed)
USG Neck (day 12)

1.2 Parameters assessed:

1. Bleeding.
2. airway compromise.
3. seroma.
4. surgical site infection.
- 5 Length of hospital stay.

1.3 Exclusion criteria

- Patients with large dead space were excluded from study.
- Patients with bleeding disorders and patients who had uncontrolled co-morbidities such as diabetes mellitus and hypertension.

1.4 Inclusion Criteria

All adult patients aged between 18 to 79 years who attended the outpatient clinic and had been diagnosed with goiter.

RESULTS

A total of 120 procedures were done. Out of these 112 patients underwent hemi-thyroidectomy, 4 patients underwent subtotal thyroidectomy, 4 patients underwent total thyroidectomy with central compartment neck lymph node dissection.

Mean age of the patients included in this study is 36 years. 110 patients are female and 10 patients are male. Overall complication rate in our study was 5% and re-operation rate was 0.8% as only 1 patient required re-do surgery.

Ultrasonography on 2nd POD showed collection in thyroid bed ranging from no collection to a maximal of 8cc.

Table 1

Sl. No.	Parameter	
1.	Number of patients	N= 120 (112 HT) (4 STT) (4 TT+CND)
2.	Mean age	36 years
3.	Gender (M:F ratio)	10/110 (1:11)
4.	Overall complication rate	5%(6/120)
5.	Re-operation rate	0.8%

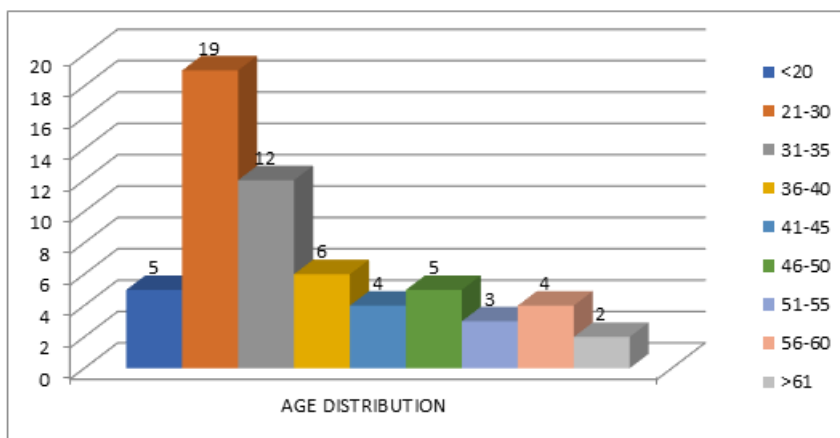


Figure 1

After surgery thyroid specimen was sent for histopathological examination.

According to histopathology examination majority of specimens were of colloid nodule, forming upto 58% of total operated cases. 22% of cases were reported as Follicular adenoma, 11% as Multinodular goiter, 7% as Papillary carcinoma and 2% as Medullary carcinoma which correlated with pre-operative FNAC findings in most cases.

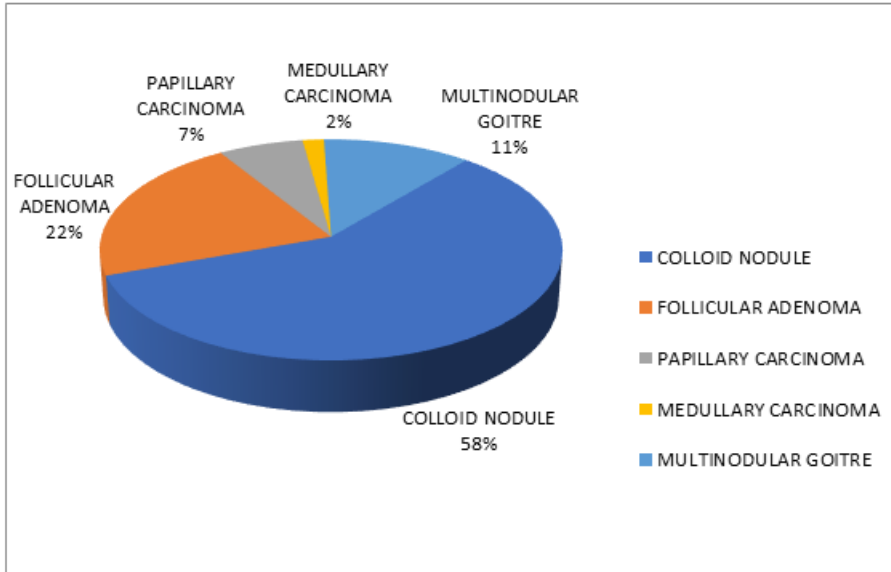


Figure 2: Histo Pathology

Table 2

Sl. No.	Type of surgery	Number (percentage)
1.	Hemithyroidectomy	112 (93.3%)
2.	Subtotal thyroidectomy	4 (3.3%)
3.	Total thyroidectomy with central lymph node dissection	4 (3.3%)

The parameters assessed in our study are Bleeding, airway compromise, seroma, surgical site infection, Length of hospital stay.

In our study of no drainage of thyroid bed, there was one patient with hematoma formation. There was no airway compromise or seroma formation. There were four patients who had surgical site infection in our study. One patient had to undergo re operation for completion thyroidectomy.

DISCUSSION

Table 3

		Bleeding/ Hematoma	Seroma	Surgical site infection	Reoperation
Deveci 2013 (400)	Drain(200)	3	3	6	2
	No Drain(200)	2	4	0	1
Muthaa 2013(90)	Drain(45)	4	0	4	0
	No Drain (45)	0	0	0	0
Nawaz 2015(68)	Drain (32)	0	1	1	0
	No drain (38)	1	3	0	1
Our study	ND	1	0	4	1

Most of the surgeons place drain after thyroidectomy to avoid formation of hematoma in post-operative period. Hematoma formation in the thyroid bed can result in potentially life threatening airway compromise and requires urgent re-exploration.

Earlier studies showed that usage of drain in thyroid surgery increases the risk of surgical site infection, causes higher post-operative pain and prolonged hospital stay. In addition to this it was also observed that usage of drain in thyroid surgery does not decrease re operation rate, hematoma formation and seroma formation.

The findings from our study are found to be consistent with previous studies as shown in above table. In our study formation of hematoma after thyroidectomy was minimal and occurred in 1 patient which was comparably similar to other studies. Surgical site infection was noted in 4 of the operated patients.

CONCLUSION

With this study we can conclude that usage of drains in thyroid surgery does not show any decrease in hematoma and seroma formation and is associated with increased hospital stay and postoperative pain.

Abbreviations: USG= Ultrasound scanning, HT= Hemi thyroidectomy, STT= Subtotal Thyroidectomy, TT= Total Thyroidectomy, CND= Central Neck Dissection, FNAC= Fine Needle Aspiration Cytology

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