

## Original Article

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# Thyroid surgery without drain

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### Abstract:

*Use of surgical drains after thyroid surgery is standard surgical practice to prevent life-threatening complications, arising from post-operative haematoma. There is increasing evidence to suggest that this is an outdated practice. This study determines whether thyroid surgery can be safely performed without the routine use of drains. This cross sectional study was done for two years and one hundred thyroidectomies were performed. No drains were inserted in any patient. Complications of thyroid surgery in this series were seroma formation (5%) cases and minor haematoma was only 1%. Re-exploration for bleeding was not encountered in any cases in this series. There is no evidence to suggest the routine use of surgical drains following uncomplicated thyroid surgery.*

**Key words:** Thyroid Surgery, Drain.

### Introduction:

The prevalence of thyroid swellings (goiter) varies between 4.2% and 51.3%, depending on age, sex and the presence of iodine deficiency<sup>1,2</sup>. Indications for surgical intervention vary but include patients in whom there is a suspicion of malignancy; those who exhibit local pressure

symptoms (dyspnoea, dysphagia); refractory hyperthyroidism and finally, for cosmetic reasons<sup>3</sup>. The extent of thyroid surgery

depends on the surgical indication for intervention. Thyroid gland has one of the highest rates of blood flow per gram of the tissue. Postoperative bleeding can be a devastating complication of thyroid surgery. An unrecognized or rapidly expanding haematoma can cause airway compromise and asphyxiation. Therefore, most thyroid surgeons routinely use drains post-operatively<sup>4</sup>. The development of a cervical haematoma, which necessitates re-exploration, occurs in approximately 0.3-1.5% of patients undergoing thyroid surgery<sup>5-9</sup>. In recent years, a number of arguments against the routine use of drains have been proposed. These include the blockage of drains leading to the development of a collection despite their presence<sup>6-10</sup>; respiratory distress which can occur as a result of other surgical complications<sup>11</sup>; predisposition to the development of infection, increased post-operative pain, prolonged hospital stay and increased cost<sup>10,12,14</sup>. The

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aim of this study was to determine whether the absence of drains post uncomplicated thyroidectomy increased the associated complication rate.

#### Methods:

This was a cross sectional and observational study carried in multiple tertiary level hospitals from 2009 to 2010. Records of patients were reviewed and biographical data, pre-operative medications, thyroid status, indication for surgical intervention, treatment and outcome were recorded. Post-operative haematoma, seroma formation and necessity of re-exploration rates were specifically sought.

#### Results:

Total of 100 thyroid operations were included in this study. There were 87% females and 13% males. Their age ranged between 14 to 67 years with a mean age of 42.7 years.

**Table-I**  
*Pathological diagnosis*

Pathological diagnosis	Number (%)
Thyrotoxic - Nodular and diffuse	03
Non-toxic - Multinodular goiter	47
- Adenoma	27
- Carcinoma	13
- Thyroiditis	10
Total	100

Commonest thyroid surgery were hemithyroidectomy( 45%) and subtotal thyroidectomy( 42 %). One patient with neck node was managed by total thyroidectomy with unilateral modified neck dissection. No drain was applied in this series. Before wound closure haemostasis was done meticulously and Valsalva manoeuvre was performed to ensure that there were no occult bleeding points.

**Table-II**  
*Types of thyroid operation*

Types of operation	Number (%)
Hemithyroidectomy	45
Subtotal thyroidectomy	42
Total thyroidectomy	12
Thyroidectomy + Neck dissection	01
Total	100

Complications of thyroid surgery in this series were shown in following table. Seroma formation was in 5% cases and minor haematoma was only 1%. Reoperation for bleeding was not encounter in any cases in this series. Total complication was 7% only.

**Table-III**  
*Complications*

Complication	Number (%)
Thyroid storm	00
Reoperation for bleeding	00
Airway obstruction	00
Minor haematoma	01
Seroma formation	05
Wound infection	01
Recurrent laryngeal nerve palsy	00
Total	07

#### Discussion:

Thyroidectomy is a common procedure in otolaryngological setup. Use of drain after thyroid surgery is a tradition to avoid grave complication but it is not evidence based<sup>13</sup>. The purpose of inserting a drain is two-fold; to identify post-operative haemorrhage early and to prevent haematoma or seroma formation. The importance of this lies in the ability to prevent associated airway compromise and this complication occurs infrequently, with a documented rate of 0-

1.5%<sup>5-9</sup>. Fluid collection in thyroid bed was measured by USG in a study, the mean collection in drain group is 16.83 ml vs 3.11 ml in non drain group<sup>14</sup>. Theoretically the drain being foreign body may induce reactive fluid formation or negative suction prevents lymphatic sealing off and encourages seroma formation. Some other studies have objectively measured the quantity of fluid in the thyroid bed following surgical intervention<sup>10,15,16</sup>. Those that have did not demonstrate a significant post-operative collection despite the presence or absence of a surgical drain.

Drains after thyroidectomy can be avoided in most of the cases and should be used sparingly when indicated. In a large meta-analysis of eight series from 1980 till 2005 consisting of 944 patients, there was no statistically significant difference between the rates of post-thyroidectomy haematoma whether or not suction drains were used<sup>17</sup>. So after complicated thyroid surgery routine use of drain is unjustified. Drain itself causes a number of specific complications include a separate surgical scar and increased discomfort at the drain site. A significant disadvantage of the routine use of drains, in the current healthcare system, is that they have been shown to be associated with prolonged hospital stay<sup>16</sup>. In this series hospital stay was not determined. Each patient stayed for an extra day which in turn will obviously increased the costs associated with thyroid surgery. The absence of drains may facilitate earlier discharge of patients, thereby reducing the healthcare cost of the procedure.

#### **Conclusion:**

Use of drain after thyroidectomy is common practice and learning to avoid some grave complications. Drain may causes over stay in hospital, scar and wound infection. So use

of drain after thyroid surgery is in debate. This study and other support literature discourage routine use of drain after thyroid surgery. It is also very important to mention that drain can not replace meticulous dissection and per-operative haemostasis.

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