ORIGINAL ARTICLE

EFFECTIVENESS OF DRAINLESS THYROIDECTOMY IN TERMS OF POSTOPERATIVE BLEEDING-A RANDOMIZED CONTROLLED TRIAL

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ABSTRACT

Objective: To determine the effectiveness of drainless thyroidectomy in terms of postoperative bleeding.

Material & Methods: This randomized controlled trial was conducted in Khyber Teaching Hospital on 40 patients from January 2019 to December 2019 after getting ethical approval from the hospital ethical committee. Two groups were allocated consisting of 20 patients, one with drainage and one without drainage, and were observed for bleeding during their stay in the hospital postoperatively. Data was collected using SPSS-21 to compare the effectiveness of both the procedures and the results were described in the form of tables.

Results: The difference in complication rates was not significant in the two groups. In the drainless group, two cases of seroma (5%) were noted in both groups. One case of hematoma was observed in the drain group. No case of hematoma was reported in the drainless group.

Conclusion: The use of drainless thyroidectomy can be justified based on the available data in this study where no bleeding was observed in the intervention group.

Keywords: Thyroidectomy, drains, post-operative complications

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INTRODUCTION

Thyroidectomy, a commonly performed surgical procedure, has many possible complications if not performed by expert surgeons. A notable complication is a postoperative hemorrhage that may prove lethal by causing acute upper airway obstruction.[1]

In anticipation of a hematoma resulting in compression of the airway and respiratory distress, surgeons have conventionally used drains post-operatively. Many research reports provide no rationale for the use of drains however to prevent major bleeding, the majority of surgeons favor placing a drain.[2-4]

Most randomized clinical trials recommend drainage only in patients undergoing major thyroid surgeries like those with large goiters, thyroid carcinomas, any evidence of coagulopathy, or thyroidectomy with neck dissection. Benign thyroid diseases require less extensive operations and placing drains has not been proven to be productive.[1-3]

Most studies propose that the use of drains worsens patient discomfort, increases the rate of surgical site infections, and prolongs hospital stay thus increasing expenses, with unsatisfactory cosmetic results. Various randomized clinical trials have given little indication for the habitual use of drains after thyroid surgery.[5,6]

In contrast to this, a study suggests that even extensive thyroid surgeries can be performed without using drains safely and with the additional advantage of reducing hospital stay and eventual cost reduction for the patients. [7] Larger number of procedures which leave a huge dead space such as colorectal, plastic surgery, vascular, and orthopedics are now not frequently drained, thus raising doubts about the use of drains in thyroid surgeries.[8]

Previous reports also outline how a drain can play a role in initiating fluid formation rather than putting a stop to it owing to its foreign body property.[9] A European study showed that in terms of efficacy no hematoma was found in 99% of the drain group while 92% in the no drain group.[10]

The current study is aimed to find the effectiveness

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of drain after thyroid surgery in our local population after comparing it with the non-drain group. The rationale behind doing this study is that there is a great need of developing local statistics in our population about the effectiveness of routine drainage after thyroidectomy.

MATERIAL AND METHODS

After informed written consent from patients and ethical approval from the ethical committee, we conducted this trial in Surgery Department, Khyber Teaching Hospital, from January 2019 to December 2019 on 40 patients with a 6 months follow-up. Patients befitting inclusion criteria presenting in OPD were recruited in the study which included either gender and age 18-60 with goiters needing surgery.

Detailed history followed by a thorough clinical examination was performed and appropriate investigations were ordered. The lottery method was used to allocate patients into two groups. Patients in whom drain was kept were allocated to group A and those in whom drain was not kept were allocated to group B. Surgical procedures were conducted as per general surgery protocols and were conducted by a surgeon having a minimum of 10 years of post-fellowship experience. Before wound closure, closed suction drains were placed in group A.Using SPSS version 21, the student t-test was used to find the differences between the two groups.

RESULTS

Among the 20 in the drained group, 7 were men and 13 women with a mean age of (43.8±9.3) years. On the other hand, 8 out of 20 in the non-drained group were men and the remaining 12 were women with a mean age of (45.1±11) years. The difference in gender distribution was reported to be non-significant between the two groups (P=0.42). The results are plotted in the tables below.

In the drainless group, 9 patients (45%) were discharged before 48 hours, half of the group (10 patients, 50%) were discharged on 3nd day while 5% (1 patient) were discharged 4th day. However, in the drained group, two patients were discharged before 48 hours while the rest of them were discharged on the 3rd day and 4th day. The mean stay for the drainless group was quite shorter as compared to the drained group (P=0.00005).

DISCUSSION

Throughout the world, surgeons rely on the use of drains routinely in thyroid surgery, not because of comprehensive evidence present, but rather owing to their own experience and customs.[11] The idea of placing a drain is the belief that it is going to suck out and evacuate the existing hematoma and the reactionary fluid collected, hence its role in preventing one of the disastrous complications of thyroid surgery and making surgeons watchful for any major bleed.[12] However, the use of a drain might be totally useless in straightforward easy cases owing to adequate hemostasis and perhaps the only salvage for prevention of hematoma formation which cannot be rightly replaced by a drain. Hence no guarantee of fluid/hematoma collection in drained patients.[13] Moreover, infections are amenable to the placement of drains.[14] The practices in thyroid surgeries had considerably improved over the past decade with a major decline in morbidity and mortality. Multiple complications which were grave enough to cause death including major bleeds, and hematoma formation leading to dyspnea and apnea have been cut down due to smart improvisation.[11] Such trends have put a question mark on the use of drain in thyroid surgery. So far, many trials failed to answer this question satisfactorily. While the majority of the surgeons are of the opinion that drainage might be completely unnecessary in thyroid surgery.[12]

Patients who underwent total thyroidectomy or lobectomy for benign thyroidal diseases were included in our study. Khanna et al demonstrated that in the drainless group, 4% of their patients developed seroma, 7% had hypoparathyroidism and no case was reported of wound infection and hematoma formation. In the drained group, 5% suffered seroma formation, 5% went through the suffering of wound infection, and 3% developed hy-

Table 1: Comparison of time, weight, VAS score, Amount of analgesia, and hospital stay between 2 groups.

Parameters		Drained	Non-Drained	P-Value
Operating Time (min)		146.10±28.16	131.20±29.09	0.52
Weight of Specimen (g)		224.88±232.85	220.21±205.27	0.72
VAS Score	POD 0	5.10±0.89	4.05±1.11	0.0014
	POD 1	2.45±1.01	1.75±0.69	0.0095
		47.05±12.4	28.40±13.85	0.00005

Table 2: Comparison of Post-operative complications between the 2 groups.

Complications	Drained (group A)	Non-Drained (group B)
Hematoma	0 (0%)	0 (0%)
Seroma	2 (5%)	2 (5%)

poparathyroidism with no hematoma formation.[12] Our study demonstrated similar results to that of Khanna et al. The complication rates were not significantly different in the two groups in our study. one case of seroma (5%) occurred in the non-drained group, whereas one case of seroma (5%), and 1 case of wound infections (5%) occurred in the drained group. No case of hematoma was reported in either group. Adequate and meticulous hemostasis is the cornerstone of such results.

There were no patients requiring a surgical revision or re-operation for the complications encountered. Successful management of all complications with palliative care was reported which is similar to the literature worldwide.[15-18]

Nevertheless, wound complications that likely occurred in the drained group in our study cannot be ignored, owing to the drain placement. Hence drains predispose wounds to the development of infections.[19] A study conducted by Schietroma et al. suggested that VAS was almost half in the drainless group which clearly points toward the association of pain with the placement of drains.[20]

Whether patients can be sent home depends not only on the collection at the wound site but also on their post-operative pain status, and their will of returning to daily life activities which are markedly influenced by their surgery satisfaction and ease. The study suggested that hematoma formation with respiratory symptoms occurs within the 1st 6 hours of surgery, hence routinely, patients must be observed on 1st postoperative day.[9] In the present study, no hematoma was formed in any of our groups.

This study is limited because a small number of patients are included. Also, a single-center study is a limitation too. Hence, a larger number with multiple center data would be required to enhance the results.

CONCLUSION

The use of drainless thyroidectomy can be justified based on the available data in this study. Moreover, collection in the form of seroma/hematoma cannot be prevented with drain if meticulous hemostasis is not achieved during surgery. Thus, drainless thyroidectomy is an option in patients undergoing the procedure.

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AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under

Naeem M: Concept, design, data collection

Mian Q: Data collection, writing, review

Arshad W: Data collection, review

Ahmad M: Concept, review

Hakim Y: Concept, review

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.