

Outpatient hemi-thyroidectomy: is it safe?

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Abstract

Aim: To compare the safety of hemi-thyroidectomy following the procedure between ambulatory and inpatient surgical regimens.

Methods: 100 patients consecutively submitted to hemi-thyroidectomy (between 2005–08) were selected: Group 1–50 inpatients; Group 2–50 outpatients with discharge on the same day. A retrospective analysis was performed. Clinical features were not factors in the selection of the regimen. Information about gender, age, ASA score, and clinical features, drains, hospital length of stay and post-operative complications was recorded. An additional questionnaire by telephone was performed after the procedure.

Results: The median of age was significantly older in Group 1. No significant differences between groups were found in gender, ASA score or educational level. Drains were kept significantly longer in the inpatient group. The number of major complications was low, consistent with the accepted norms and not statistically different between groups. No life-threatening complications were reported.

Conclusion: An outpatient procedure has well-established advantages. The results suggest that safety is comparable in both regimens. With an increase in surgeons' experience, and an adequate selection and education of the patients, the one day surgery regimen can offer a higher volume of surgery associated with cost reduction.

Key words: Hemi-thyroidectomy, Day case, ambulatory surgery

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Introduction

The current practice for post-operative care of hemi-thyroidectomy patients uses mostly the inpatient setting [1–8], with multiple day hospitalisation. However, while the thyroid is a relatively superficial organ, and mortality rates are extremely low, ambulatory approach to this type of surgery can be explored.

With better healthcare provision in all sectors and with the developments in post-surgical patient care and monitoring, an increasing number of surgical operations can be carried out safely in a day surgery setting [9]. These have resulted in improved patient satisfaction and cost savings [5, 6, 8, 10]. Therefore, accompanying the current trend, there has been a move towards shorter stay for thyroid surgery [1, 5–7, 11].

Since 1991 several reports documented experience with the same day discharge for a range of thyroid surgeries from simple lobectomy to total thyroidectomy [11, 12]. Nonetheless ambulatory thyroidectomy remains a highly controversial approach [4, 8, 11, 12].

In our study concerning thyroid surgery, hemi-thyroidectomy was chosen because of the higher homogeneity of the pathology and its conventionally lower rate of complications [7, 12–14]. This study aimed to validate our current practice, hoping to contribute to the expansion of this programme in our day surgery unit (DSU), increasing patients' accessibility and reducing the waiting surgical lists in this field.

Methods

This is a single centre retrospective study, comparing patients consecutively scheduled for hemi-thyroidectomy as an elective primary procedure between 2005–08. Two groups of patients were compared: Group 1–50 inpatient regimen and Group 2–50 outpatient regimen (with discharge on the same day).

Clinical features of the patients and pathology were not factors in the selection of the regimen. Exclusion criteria for outpatient surgery were: rejection of ambulatory regimen by the patient, lack of motivation for an outpatient procedure, cognitive disability or low educational level that could not permit an early recognition of the alert signs of a major complication, home distance from hospital over 20km, and lack of adequate home facilities. Patients having the previous criteria and organizational reasons were assigned to an inpatient procedure.

Ambulatory patients were monitored in the Day Surgery Unit for at least six hours after surgery and were discharged after having been evaluated by the surgeon. Specific instructions were given to all patients to return to the hospital in the event of neck swelling, excessive drain bottle accumulation, respiratory distress, or signs of infection or hypocalcaemia. Patients were scheduled to return to the clinic for routine assessment in the following day. Cervical drains if present were removed when the drainage was minimal.

All major complications were recorded: wound infection, cervical haematoma compromising airway or causing need of re-intervention, need of re-intervention for any other aetiology, significant haemorrhage and symptomatic hypocalcaemia. Information about gender, age, ASA score, and clinical features, minor complications, drains was collected. An additional questionnaire by telephone was performed after the procedure.

Data was statistically analysed by Mann-Whitney and χ^2 tests (Table 1) and age-adjusted odds ratio test calculated by logistic regression. Continuous variables were expressed as mean \pm SD for symmetric variables and median (25th–75th percentiles) for asymmetric variables. The categorical variables were expressed as relative frequencies. Differences were considered statistically significant when $p < 0.05$.

Results

The median of age was significantly higher in Group 1, and no other demographic differences were observed (Table 1). No significant differences between groups were found in gender, ASA score or educational level. The majority of the patients in both groups had a cervical drain. The length of stay median in the inpatient setting was 5,9 days. All patients in the Group 2 were discharged home in the same day of surgery. The number of major complications was not different between groups (Table 2). Surgical re-intervention occurred in 2 outpatients and in 1 inpatient. Significant haematoma occurred once in both group after discharge (an outpatient reported mild dyspnoea, but no significant respiratory distress occurred). The wound infection rate was not significantly different between groups. In 2 inpatients hoarseness was present at least 2 months after de procedure. No life-threatening complications were reported.

Table 1 Demographic data.

	Inpatients	Outpatients	P
Age*	61 (47–71)	47 (39–58)	<0,01
Females†	36 (72)	40 (80)	0.35
≤9 years completed at school †	38 (76)	34 (68)	0.37
ASA score*	2 (2–2)	2 (2–2)	0.25

* Median (interquartile range), Mann-Whitney test † n (%), χ^2 test

Discussion

There are some studies on safety of ambulatory thyroid surgery [1–3, 5, 10, 15]. The growing number of short stay thyroid surgery is probably due to low rates of significant complications and moderate levels of pain and discomfort, allowing patients to go home once they recovered from general anaesthesia. Additionally, ambulatory thyroid surgery has been proven to be less expensive and cost-effective [1–3, 5, 10, 11, 13, 15].

Hemi-thyroidectomy generally has low complication rates, but if they occur, they may have serious consequences. Neck hematoma and bilateral vocal cord palsy can lead to respiratory compromise. Hypocalcaemia is not likely to occur in hemi-thyroidectomy, but if occurs, it may result in neurological sequelae. [4, 12, 14]

Since most patients with no pre-existing comorbidities can usually be discharged on the first postoperative day, the main reason for performing hemi-thyroidectomy in the inpatient regimen should be to monitor patients for the development of these rare but potentially life-threatening complications [12]. The exclusion criteria for the outpatient hemi-thyroidectomy, besides the logistic reasons, concern safety. Patients in the ambulatory group were younger and capable of understanding the specific risks of the post-operative period and act correctly if any complication occurred. In this study, the observed rate of complications for both groups corresponded to the accepted norms [5, 16, 17]. As expected, there were no cases of symptomatic hypocalcaemia, and, although advocated by some authors [4, 5, 8, 12] calcium supplements were not routinely administered.

Table 2 Outcomes..

	Inpatients	Outpatients	p
Complications (total)†	10 (20)	8 (16)	0.60
Life-threatening complication	0	0	-
Major complications†	4 (8)	4 (8)	1
Haematoma associated to mild dispnea	1 (2)	0	
Haematoma (need to reintervene)	0	1 (2%)	
Re-intervention (partially retained drain)	0	1	
Wound infection	1 (2%)	2 (4%)	
Hoarseness (present at least 2 months after the procedure)	2 (4%)	0	
Other relevant complications reported n (%)	0	2 (4%)	
Haemorrhage (drain kept longer)			
Patients with drains†§	43 (86)	48 (96)	0.08
Nr. of days with drain*	3 (2-4)	2 (1-3)	<0.01
Period of hospital stay (days)*	5.9 (4.0 -6.3)	1	<0.001
Unplanned visit to hospital†	4 (8)	8 (16)	0.22

*Median (interquartile range), Mann-Whitney test † n (%), χ^2 test

Major complication considered: Wound infection, cervical haematoma compromising airway or causing need of re-intervention, need of re-intervention by any other aetiology, significant haemorrhage and symptomatic hypocalcaemia.

§ Data referred to 91 patients

The majority of postoperative haematomas occurs within the first few hours after surgery, or when it occurs later, warning signs can be frequently identified in early post-operative period [5, 10, 11, 12, 18, 19]. However, haematomas can present as late as five days after surgery [12, 18]. Literature indicates that airway obstruction may occur up to 16 hours postoperatively [17]. We found no significant difference in the rate of complications between the ambulatory and inpatient groups. Two of our patients developed haematoma (one in each group). In fact in both cases in our study (one in each group) haematomas occurred late, and no warning signs were identified (both required non-emergent cervical exploration). No significant respiratory distress or acute airway obstruction has occurred, although mild dyspnoea/cervical discomfort was observed in one patient.

For ambulatory hemi-thyroidectomy to become widely accepted the rate of wound haematoma must be low, not greater than one to two percent [6, 8, 18]. Both patients and staff must be aware that serious

and life-threatening postoperative complications can be identified and managed safely. The outpatient model must involve two phases of care, the first takes place in a specially prepared ward and the second involves continued monitoring of the patients after discharge from hospital [12, 13].

Careful preoperative selection and a clearly-defined management protocol are necessary to make ambulatory thyroid surgery a safe and accepted alternative to inpatient care. In our retrospective study, primary hemi-thyroidectomy was carried out safely in the ambulatory setting for a selected group of patients. The incidence of postoperative complications was low and comparable in the ambulatory group and inpatient groups. The management of patients undergoing ambulatory hemi-thyroidectomy should therefore include careful preoperative selection, appropriate patient and caregiver education, optimal immediate postoperative monitoring in an adequately set-up ambulatory care facility, and adequate protocols for management of patients with postoperative difficulties.

References

- Samson PS, Reyes FR, Saldares WN, Angeles RP, Francisco RA, Tagorda ER Jr. Outpatient thyroidectomy. *The American Journal of Surgery* 1997;**173**:499–503.
- McHenry CR. 'Same-day' thyroid surgery: an analysis of safety, cost savings, and outcome. *The American Surgeon* 1997; **63**: 586–9.
- Steckler RM. Outpatient thyroidectomy: a feasibility study. *American Journal of Surgery* 1986; **152**: 417–9.
- Schwartz AE, Clark OH, Ituarte P, Lo Gerfo P. Therapeutic controversy: thyroid surgery – the choice. *Journal of Clinical Endocrinology and Metabolism* 1998; **83**:1097–105.
- Mowschenson PM, Hodin RA. Outpatient thyroid and parathyroid surgery: A prospective study of feasibility, safety, and costs. *Surgery* 1995; **118**(6):1051–1054.
- Spanknebel K, Chabot JA, DiGiorgi M, Cheung K, Lee S, Allendorf J, Logerfo P. Thyroidectomy Using Local Anesthesia: A Report of 1,025 Cases over 16 Years. *Journal of The American College of Surgeons* 2005;**201**:375–385.
- Sahai A, Symes A, Jeddy T. Short-stay thyroid surgery. *British Journal of Surgery* 2005;**92**:58–59.
- Ortega J, Cassinello N, Lledó S. 'Same-day' thyroid surgery. Results after 805 thyroidectomies in a fast-track. *Cirugía Española* 2007;**82**(2):112–6.
- Segerdahl M, Warrén-Stomberg M, Rawal N, Brattwall M, Jakobsson J. Clinical practice and routines for day surgery in Sweden: results from a nation-wide survey. *Acta Anaesthesiologica Scandinavica* 2008;**52**:117–124.
- Teoh AY, Tang YC, Leong HT. Feasibility study of day case thyroidectomy. *ANZ Journal of Surgery* 2008;**78**:864–866.
- Mirnezami R, Sahai A, Symes A, Jeddy T. Day-case and short-stay surgery: the future for thyroidectomy? *International Journal of Clinical Practice* 2007;**61**(7):1216–1222.
- Chin CW, Loh KS, Tan KS. Ambulatory thyroid surgery: an audit of safety and outcomes. *Singapore Medical Journal* 2007;**48**(8):720–724.
- Materazzi G, Dionigi G, Berti P, Rago R, Frustaci G, Docimo G, Puccini M, Miccoli P. One-Day Thyroid Surgery: Retrospective Analysis of Safety and Patient Satisfaction on a Consecutive Series of 1,571 Cases over a Three-Year Period. *European Surgical Research* 2007;**39**:182–188.
- Rosenbaum MA, Haridas M, McHenry CR. Life-threatening neck hematoma complicating thyroid and parathyroid surgery *The American Journal of Surgery* 2008;**195**:339–343.
- Marohn MR, LaCivita KA. Evaluation of total/near-total thyroidectomy in a short-stay hospitalization: Safe and cost-effective. *Surgery* 1995; **118**(6):943–7.
- Abbas G, Dubner S, Heller KS. Re-operation for bleeding after thyroidectomy and parathyroidectomy. *Head and Neck* 2001;**23**:544–6.
- Burkey SH, van Heerden JA, Thompson GB, Grant CS, Schleck CD, Farley DR. Reexploration for symptomatic hematomas after cervical exploration. *Surgery* 2001; **130**:914–20.
- Sánchez-Blanco JM, Recio-Moyano G, Guerola-Delgado A, Gómez-Rubio D, Jurado-Jiménez R, Torres-Arcos C. Tiroidectomía en régimen de cirugía mayor ambulatoria. *Estudio prospectivo Cirugía Española* 2006;**80**(4):206–13.
- LoGerfo P, Gates R, Gazetas P. Outpatient and Short Stay *Thyroid Surgery Head and Neck* 1991(13):97–101.