EARLY POST-OPERATIVE COMPLICATIONS AFTER THYROIDECTOMY FOR BEING GOITERS

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ABSTRACT

Objective: To find frequency of early complications after thyroid surgery for benign thyroid conditions.

Study design: Quasi-experimental study.

Place and Duration of study: Combined Military Hospital (CMH) Lahore, from March 2005 to Sep 2007.

Patients and Methods: Early complications after thyroid surgery for benign thyroid conditions were studied. One hundred patients with FNAC confirmed benign goiter or follicular growth admitted for elective thyroidectomies were included in the study.

Data was collected in the pre-designed proforma and entered in SPSS-10 version. Descriptive statistics was used to calculate frequency of each complication in the early post-thyroidectomy period.

Results: The frequency of complications after thyroidectomy was 27%. Out of them 8 patients (8%) developed subcutaneous haematoma, 5 patients (5%) wound infection, 4 patients (4%) tension haematoma, 4 patients (4%) hypocalcaemia, 3 patients (3%) respiratory obstruction and 3 patients (3%) developed recurrent laryngeal nerve paralysis.

Conclusions: Surgery for benign thyroid enlargement but may be associated with significant numbers of post operative complications including wound haematoma, wound infection and hypocalcaemia.

Key words: Thyroidectomy, heamatoma, hypocalcaemia.

INTRODUCTION

Goiter can be simple, toxic, inflammatory, or neoplastic. Various modes of treatment including medicines, surgery, and radioiodine are available and indications of each treatment are individualized on the type of goiter [1, 2]. Antithyroid medicines are limited to toxic goiter and in their pre-operative preparation. Similarly radioiodine is indicated in Graves disease but its facilities are not available freely and prolonged follow up to detect hypothyroidism is mandatory. Moreover it is also not suitable for young patients and during child bearing age group [2, 3].

Surgery is the mainstay of treatment for benign thyroid enlargement. Different types of resections are being individualized on the basis of disease. Surgery is most widely used with the advantage of being freely available and rapid cure rates, but at the same time it has the disadvantages of post-operative mortality, morbidity and recurrence of goiter [4-6]. The mortality from the thyroid surgery during 18th century was approximately 40%. Most deaths were caused by infection and hemorrahage. Kocher, Theodor Billroth, and William S Halsted are just few of the names intimately associated with the development and refinement of thyroid surgery. Their contributions helped to make thyroid surgery a less-feared and better-understood procedure [7]. Sterile operative areas, general anesthesia and improved surgical techniques have made deaths due to thyroid surgery extremely rare today [8].

While complication rate of thyroid surgery has certainly decreased, but they still exist with variable frequency. The frequency of commonly observed complications associated with thyroidectomy for benign goiter in various studies includes tension haematoma 5-7%, subcutaneous haematoma 2-10%, respiratory obstruction 5-10%, recurrent laryngeal nerve paralysis 1-3%, parathyroid insufficiency 3-15%, wound

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infection 1-5%, stitch granuloma 2-5% and thyrotoxic crisis as a rare occurrence if the patient is prepared pre-operatively [9-11].

Goitre is a common ailment seen in various regions of Pakistan like northern areas and Azad Kashmir [11]. To determine incidence of thyroidectomy associated complications in our population a few studies are available. In view of common occurrence of goiter in our endemic area and surgery being the frequently used option for treatment, this descriptive study is designed to detect frequency of early post-operative complications in procedures performed for benign thyroid enlargement.

PATIENTS AND METHOD

This was a quasi-experimental study of two and a half year duration carried out from March 2005 to Sep 2007. The data was collected randomly from adult patients of all ages admitted at CMH Lahore with thyroid swelling for elective thyroidectomy.These swilling were confirmed benign on FNAC carried out on out door basis before admission. A detailed clinical examination, indirect laryngoscopy and lab investigations including thyroid profile, serum corrected calcium levels and complete blood picture were carried out in all patients. Patients with recurrent laryngeal nerve paralysis, lab evidence of hypoparathyroidism or recurrent goiter were excluded from the study. A total of 100 admitted patients with goiter due for elective thyroidectomy were included in the study. A consultant histopathologist did all cytological and histopathological studies. In all patients thyroid surgery was performed; 40 were operated for total thyroidectomy, 40 for sub- total and 20 for lobectomy with isthmustectomy and operative techniques were noted. Patients were followed for initial ten post-operative days for early complications like thyrotoxic crisis, recurrent laryngeal nerve paralysis, tension heamatoma, subcutaneous haematoma, respiratory obstruction, hypocalcemia and wound infection. All findings were recorded in the preformed proforma designed for this study. Histopathology reports of all resected thyroid specimens were noted and compared with the initial FNAC reports. Data was entered in SPSS Version 10. Descriptive statistics was used to calculate frequency of each complication in the early post-thyroidectomy period.

RESULTS

In this study thyroidectomy was performed in 100 patients with benign thyroid swellings at CMH Lahore. The mean age was 36 years (SD=6.07). Female to male ratio was 8:2. Out of 100 patients total thyroidectomy was done in 40 (40%) patients, subtotal thyroidectomy in 40 (40%) patients, and in 20 (20%) patients lobectomy with isthmusectomy was performed (Fig. I).These procedures were carried out without any per operative complications. Among those 100 patients 20(20%) were discharged within 3 days while in 33 (33%) the hospital stay post-operatively was up to 4 days and the stay

Table: Distribution of complications in different procedures of thyroidectomy

Procedures	Number of procedures	Subcutaneous Haematoma	Wound Infection	Tension Haematoma	Hypocalcaemia	Respiratory Obstruction	Recurrent laryngeal nerve paralysis
Total Thyroidectomy	40	4	2	2	4	3	3
Sub Total Thyroidectomy	40	4	2	2	-	-	-
Lobectomy with Isthmusectomy	20	-	1	-	-	-	-
	100	8	5	4	4	3	3

was extended up to 5 days in 36 (36%) patients. These patients were directed to report at OPD for further follow up. There were 11 (11%) patients who had stayed in hospital for more than10 days.

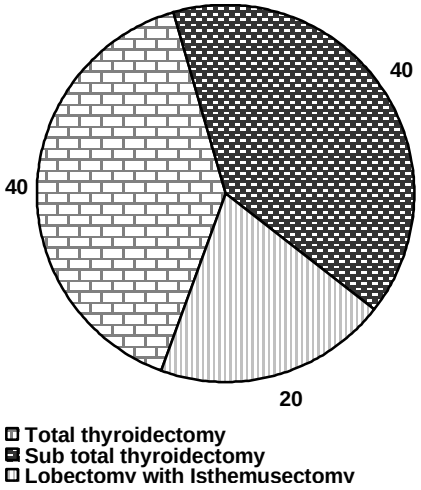

Figure: Operative procedures.

Out of 100 operated patients 27% developed complications. 8 (8%) patients developed subcutaneous haematoma, 5 (5%) wound infection, 4 (4%) tension haematoma, 4 (4%) hypocalcaemia, 3 (3%) respiratory obstruction and unilateral laryngeal nerve paralysis occurred in 3 (3%) patients (Table).

DISCUSSION

Complications of thyroid surgery continue to be a significant source of morbidity in benign thyroid disorders 8, 12]. Surgery is the mainstay of treatment most widely used with the advantage of being freely available and rapid cure rates, but at the same time it has the disadvantage of post-operative morbidity and recurrence of goiter [13, 14]. The mortality from thyroid surgery during 18th century was approximately 40%. Most deaths were caused by infection and hemorrhage [7]. Sterile operative areas, improved general anesthesia and improved surgical techniques have made deaths rare but other major and minor complications still occur [8].

It is documented in literature that the most common cause for multinodular goiter is dietary deficiency of iodine. The most common symptom is swelling in front of the neck. This cosmetic defect present in 100% of the patients. Dyspnoea was found in 76%, dysphagia in 3% and 26% patients had pain in the neck [1, 2].

Different surgical options available for treatment of benign thyroid enlargement are total thyroidectomy, subtotal, near-total thyroidectomy and lobectomy with isthmusectomy [4, 15].

Patients undergoing total thyroidectomy require life long replacement of thyroxin, while recurrence of goiter is frequently observed after subtotal resection. The surgery for recurrence is difficult and carries more morbidity and for this reason many thyroid surgeons favour total thyroidectomy for goiter. Total thyroidectomy, however, is more frequently associated with damage to recurrent laryngeal nerve and parathyroid gland than with other procedures [12, 14, 16]. So it still remains a matter of debate whether to subject the patient to total thyroidectomy with lifelong replacement therapies and a higher chance of complications or to perform subtotal resections with more incidence of recurrence of goiter that requires a difficult re-operation with higher complication rate.

We performed total thyroidectomy in 40 patients, subtotal thyroidectomy in 40 and lobectomy with isthumusectomy in 20 patients. In all patients two wound drains were placed. In most of the cases wound drains were removed on 3rd post-op day. It is proved that properly working suction wound drains decrease the haematoma formation.Regular checking of the patency and vaccum suction of the drain can prevent this complication. Drainage tubes can be kinked, blocked or dislodged and if not checked regularly may lead to haematoma formation [17].

The postoperative hospital stay was from 3 days to 10 days. The mean stay was about 4 days. The stay was prolonged in some of the patients due to complications which were managed accordingly. This is comparable to a study carried out by Kabebew E and a study carried out at a local hospital [17, 18].

Frequency of complications was 27% in our study while it was 40% in a local study [14]. The most common complication in our study was subcutaneous haematoma which occurred in 8 patients(8%), out of them 4 patients were operated for total thyroidectomy and 4 for subtotal thyroidectomy. In an international study subcutaneous haematoma occurred in 10% of patients and in a study done at a local hospital the incidence was 10.6%. Hypocalcaemia occurred in 4 patients(4%), all of them were operated for total thyroidectomy, whereas 6% in a study by Montagnes et al and 1.6% in a local study [8, 12], Respiratory obstruction occurred in 3 patients(3%) and recurrent laryngeal nerve paralysis also in 3 patients (3%) all of them were operated for total thyroidectomy. Tension haematoma was in 4(4%) out of them 2 were operated for total and 2 for sub total thyroidectomy, wound infection developed in 5(5%), among them 2 were operated for total 2 for sub total thyroidectomy 1 for lobectomy. A comparable international study shows respiratory obstruction in 6%, transient unilateral recurrent laryngeal nerve paralysis in 3%, while in a local study it was 4% and 3% respectively [9, 11], the incidence of tension haematoma was 10% and wound infection was 6% in a similar study [11]. It was found that massive goiter, short neck and difficult intubations increase the chances of developing respiratory obstruction [19]. Recurrent laryngeal nerve paralysis was more frequent with total thyroidectomy. Our results are comparable to contemporary studies of Qureshi (11), Bergamaschi (8) and colleagues, and Delbridge [4].

While the complication rate of thyroid surgery has certainly decreased, surgeons must nevertheless maintain a healthy respect for the possibility of such complications. They should be able to anticipate the risk of complications associated with surgical procedures to be carried out and hence can avoid worse consequences.

CONCLUSION

Although surgery is the most widely used management for benign thyroid enlargement but it is associated with significant numbers of post operative complications including wound haematoma, wound infection and hypocalcemia.

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