A THREE-YEAR EXPERIENCE WITH CONVENTIONAL THYROIDECTOMY (SUBTOTAL THYROIDECTOMY) IN THE MANAGEMENT OF SIMPLE GOITRES IN BINGHAM UNIVERSITY TEACHING HOSPITAL JOS.

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Abstract: -

Introduction:-*Thyroidectomy is the surgical procedure for the reduction or total removal of the thyroid gland – to achieve aesthesis or functional changes resulting from enlargement and pressure on the trachea or hyper function of the gland.*

Thyroidectomy as a procedure has developed significantly due to more understanding of the anatomy of the neck and the surgical technique.Thyroidectomy has common complications related to the procedure which include – haematoma formation, laryngeal nerve palsy and hypocalcaemia, depending on the nature of the procedure, the expertise of the surgeon involved and the technique.

Method:-*A retrospective study over a three year period (Jan 2018-Dec 2020). Case notes were retrieved and the gender, age, indications, outcome of surgeries noted and analysed with the aim of highlighting the complications observed with conventional thyroidectomy in line with the expertise of the surgeon, the use of nerve monitor, pre/post operative vocal cord assessment and the use of suction drain to eliminate or reduce the complications.*

Results: *- 48cases were included in the study, 42 females(87.5%) and 6 males (12.5%);male: female=1:7. Age range is 17to 60 years (mean age-39.48). Patients were all euthyroid before surgery, all were FNAC negative for malignant features, subtotal thyroidectomy was performed for all patients, no permanent laryngeal nerve palsy or permanent hypocalcaemia and no haematoma formation in this study.*

Conclusion:- *Conventional thyroidectomy in a less technologically advanced environment with less prospects of replacement therapy can be practiced safely with minimal complications.*

Keywords: - *Subtotal thyroidectomy, Head and Neck Surgeon, Minimal Complications.*

INTRODUCTION:

Thyroidectomy is the surgical procedure performed on the thyroid gland in order to reduce or remove the thyroid gland (partial, subtotal or total) to achieve aesthesis or functional changes resulting from enlargement and pressure on the trachea or hyper function of the gland. It is a common procedure in modern medicine, that may be used to treat thyroid diseases that are not responsive to medical management [1,5].

The surgical management of thyroid disease has markedly improved during the past century.[3]In the last 20 years; total thyroidectomy has become the preferred option for managing bilateral benign goitre, Graves' disease and some thyroid cancers[16,17].

More specific thyroid operations were developed in Saleno in the twelfth and thirteenth centuries which accounts were published by Roger Frugardi in 1170 with fatal results[2]. Technical improvement did not occur until the middle of the nineteenth century [2].

In the 1870s, Billroth and Kocher pioneered the classic thyroidectomy and reported a mortality rate of 8%, a significant success at the time. By the time Theodor Kocher was awarded the Nobel Prize in 1909, mortality rates had fallen to less than 1% for his development of the surgery [2].

The delicate anatomy of the anterior neck, and its surrounding critical structures, make thyroidectomy a challenging procedure to perform safely and effectively. Thyroidectomy, as a procedure, has developed significantly as the anatomic understanding and surgical approaches have evolved and as early as the sixth century AD, the effect of recurrent laryngeal nerve damage on the voice after surgical intervention were recognized [2].

There have been limited studies on the surgical management of goitre in the middle belt region of Nigeria; therefore our study is relevant in this regard.Endemic goitre is of serious public health concern in our setting and lots of people affected live in communities where there are challenges to surgical treatment; due to ignorance, financial constraints, lack of surgical and anaesthetic expertise amongst others. The reported prevalence rates of endemic goitre ranges from 1 to 90% depending on the area of study [4].

Rahman et al in an observational study in Ilorin, Nigeria to determine the possible risk factors for respiratory complications after thyroidectomy found a prevalence of respiratory complications of 7.6%. The identified predictive factors for respiratory complication were giant goitres with tracheal narrowing or deviation, retrosternal goitres, duration of the goitre before presentation, malignant goitres and preoperative recurrent laryngeal nerves status [6].

In view of the improved surgical and anaesthetic techniques, there is a need to review the current trend and outcome in the surgical management of goitres.

As related to the mortality and morbidity from thyroid surgery, this study aims at reviewing the surgeries performed by the Otorhinolaryngologist, head and neck surgeons in our institution relating to the common complications (haematoma formation, recurrent laryngeal nerve palsy, hypo function of the parathyroid gland etc). It is therefore noted in many literature that adequate knowledge of the anatomy of the neck region, the surgical dissection technique during surgery, the use of nerve monitor and suction drains regularly can mitigate the complications usually seen [8, 9,10,12], (*dissection method, haemostasis maintenance and nerve identification with preservation*).

Methodology:

A Retrospective study from surgeries performed over a 3yr period (Jan 2018 – Dec 2020) in the Bingham University Teaching Hospital Jos, by Otorhinolaryngologist, head and neck surgeons. Case notes of patients were retrieved and the age, sex, indications and the outcome of the surgery were noted, analysed and discussed with the aim of high lighting the complications commonly seen with conventional thyroidectomy.

Inclusion criteria – Pre-operative vocal cord assessment, the surgeon (Otorhinolaryngologist, Head and Neck Surgeon), use of nerve monitor, suction drain usage, post-operative vocal cord assessment, Fine Needle Aspiration Cytology (FNAC), euthyroid status before surgery and subtotal thyroidectomy.

Surgeries performed by Resident Doctors and General Practitioners were excluded.

Results:

A total of 48 cases were seen within the period under review that met the inclusion criteria for the study. 42 females = 87.5% and 6 males = 12.5%. Age range: - 17 – 60yrs (mean age = 39.48) Male: Female = 1: 7. FNAC showed no malignant features, all patients were euthyroid before surgery, all had subtotal thyroidectomy, nerve monitor was used and pre/post operative recurrent laryngeal nerve assessment was done on all patients. Suction drain was used in the patients for 24-48hrs and discontinued when the drainage was less than 10mls. There was no haematoma formation, Transient recurrent Laryngeal nerve palsy was noticed in

16 cases=(33.33%), no permanent palsy and Transient hypoparathyroidism (hypocalcaemia) in 8 cases=(16.67%), no permanent hypoparathyroidism (hypocalcaemia).

Discussion:-

This research work is aimed at enlightening readers and clinical practitioners in our environment that conventional thyroidectomy can be practiced with a wide margin of success without much complications.

The methodology shows that the process starts with adequate evaluation of the patient at presentation to ensure safety.

All patients were adequately evaluated clinically and those found to be thyrotoxic were managed until they are euthyroid before surgery. Subtotal thyroidectomy was performed on the patients in this study because there are challenges with replacement therapy in our environment. All surgeries were performed by Otorhinolaryngologist, Head and Neck Surgeons with adequate knowledge of the anatomy of the thyroid gland and the Head & Neck region.

All patients had adequate laboratory evaluation- TFT, X-ray soft tissue neck, FNAC of the thyroid gland, vocal cord evaluation with a flexible naso-laryngoscope pre-operatively ascertaining the mobility of the vocal cords.
Surgeries were performed in theatre under General anaesthesia with a nerve monitor in all cases aiming at identification and preservation of the laryngeal nerves (recurrent/superior).
Meticulous haemostasis was maintained during surgery and an active drain was left insitu post-operatively in all cases for about 24-48hrs, discontinued when the drainage was less than 10mls and the patient discharged.
The above measure ensures that no haematoma was formed as seen in this study. Haematoma following thyroidectomy has been known to be deadly due to respiratory compromise and even death if not manage properly.
The other complication of Transient recurrent laryngeal nerve palsy was noticed in 16 patients (33.33%) of our cases which resolved within 3-5weeks and no permanent palsy was observed due largely to the operative technique employed by the surgeons in this study.
The parathyroid glands were all preserved in all our patients; however transient hypoparathyrotism was noticed in 8 patients (16.67%) which could be due to surgical manipulation and some temporary disruption of blood supply to the glands but recovered promptly within 8 weeks during the follow-up period.
Thus with meticulous evaluation of the patient at presentation, the experience of the surgeon with adequate knowledge of the anatomy of the neck, good and proper technique ensured during surgery; the use of nerve monitor during surgery, subtotal thyroid surgery preserve the parathyroid glands, use of suction drain prevent haematoma formation, the major complications associated with conventional thyroidectomy were virtually avoided or minimally observed in this study.

Conclusion:-

Conventional thyroidectomy (subtotal thyroidectomy in this study) in the hands of well trained surgeons with adequate knowledge of the anatomy of the neck, in a less technologically advanced environment with less or challenging prospect of replacement therapy can be practised safely with minimal or no complications.

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