

## THYROIDECTOMY UNDER LOCAL ANAESTHESIA: HOW SAFE?

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### ABSTRACT

**Background:** In order to compliment the inadequate health facilities in the rural areas in Nigeria, non-governmental organisations provide adhoc outreach health camps that offer treatment in various medical specialties including surgery.

**Setting:** Rural outreach health camps.

**Objective:** To evaluate the safety of thyroidectomy under local anaesthesia at rural outreach setting with inadequate facilities for general anaesthesia.

**Patients and Methods:** This was a prospective descriptive study of 33 consecutive cases of thyroidectomy performed using field block with 1% lignocaine and adrenaline 1: 200,000 dilution during two free medical outreaches that held at Jos, Nigeria in March and October 2005 respectively, lasting two weeks each.

**Results:** A total of 33 primary thyroid operations were performed consisting of 30 subtotal thyroidectomies (91%), 2 lobectomies (6%) and one total thyroidectomy (3%), The patients were aged between 23 and 62 years with a mean age of 45.8years. There were 3males and 30 females with a male: female ratio of 1:10. There was no mortality but morbidity was 2/33 (6%) Two complications were recorded in 2 patients and were superficial surgical site infection (3%) and reactionary haemorrhage (3%).

**Conclusion:** We conclude that thyroidectomy under local anaesthesia is a safe procedure in experienced hands at rural settings with inadequate facilities for general anaesthesia.

**Keywords:** Thyroidectomy, Local anaesthesia, Safety, Rural outreach, Nigeria. (Accepted 14 March 2007)

### INTRODUCTION

The practice in this environment is to do thyroidectomy under general anaesthesia while thyroidectomy under local anaesthesia is reserved for patients considered to be of poor anaesthetic risk due to critical illness<sup>1,2</sup>.

Performing thyroidectomy under local anaesthesia has been reported by various researchers under different hospital settings. The growing health needs of patients in a developing country like Nigeria and the inability of government to meet these needs has led to the emergence of complementary health based non-governmental organisations which provide adhoc free health care programmes to meet the needs of the less privileged in society. The inavailability and relatively high cost of general anaesthesia for thyroidectomy in a developing country like Nigeria

limits the number of patients that can benefit from this procedure at these rural health outreaches.

At these free medical outreaches which usually last a few days to weeks, surgery is offered for various pathologies including patients with simple goitres. General anaesthesia is not usually available and these patients are operated upon under local anaesthesia after they have been carefully evaluated to prevent an unnecessarily high morbidity and mortality<sup>2,3</sup>. Since it has been shown that there is no difference in morbidity profile when compared to thyroidectomy performed under general anaesthesia,<sup>4</sup> it makes local anaesthesia a useful option at free medical outreaches in developing countries.

We therefore studied all the cases of simple goitres operated upon in March and October 2005 in order to evaluate the safety of thyroidectomy under local anaesthesia in a rural medical outreach setting in North central Nigeria.

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## PATIENTS AND METHODS

**Study area.** This is a prospective descriptive study of 33 consecutive cases presenting at two medical outreaches that held at Cottage Hospital Angware in Jos East Local Government Area and Vom Christian Hospital in Jos South Local Government Area all of Plateau State Nigeria. These two separate outreaches held for two weeks each in the months of March and October 2005 respectively and were organized by Christian Medical Fellowship based in the United States of America.

**Method.** The patients were evaluated clinically to exclude toxicity, recurrence, advanced malignant goiters, presence of obstructive symptoms and comorbidities like uncontrolled diabetes and hypertension. The presence of any of these conditions constituted exclusion criterion. The investigations included x-rays of the neck and chest, electrocardiography, packed cell volume, blood grouping and cross matching. For patients that have had prior evaluation in hospital in the last three months, their investigations were not repeated except for the packed cell volume. A slight modification to patient draping was necessary to facilitate this mode of anaesthesia and this includes the use of a perineal sheath with the opening placed in such a way as to expose the eyes, nose and mouth of the patient while keeping the drape out of the operative field by folding it over the chin (Fig.1) in order to facilitate monitoring, enhance respiration and encourage communication with the patient.

Anaesthesia was via a field block using 30 to 40 mls. of 1% lignocaine with adrenaline administered thus; 15-20mls of anaesthetic agent was infiltrated subcutaneously along the posterior borders of both sternocleidomastoid muscles while the incision line was infiltrated with additional 10-15mls anaesthetic agent. 2-5mls of local anaesthetic agent was infiltrated at the upper poles of the thyroid gland prior to mobilisation to abolish the discomfort associated with mobilization of these parts of the gland<sup>5,6</sup>. Sedation was with 30mg pentazocine and 5-10mg diazepam given intravenously as stat doses and re-administered when deemed necessary to reduce patient discomfort. The patient's head was stabilized on a ring fashioned from a folded trolley cover while neck extension was achieved by a pillow placed under the patient's upper back. All other parts of the procedure were as described for thyroidectomy performed under general anaesthesia<sup>7</sup> with the strap muscles retracted to gain access to the thyroid gland, vascular pedicles were identified and ligated in continuity while the recurrent laryngeal nerves were not routinely identified.

Patients were followed up for four weeks by

members of the team resident in Jos.

**Outcome indices.** Information obtained included personal data, diagnosis, type of surgery, duration of surgery, complications, size of goitre.

**Statistical analysis.** Analysis was for means, standard deviation and percentages using Epi-info version 3.2.2

## RESULTS

Thirty three patients were studied aged between 23 and 62 years with a mean age of 45.8 years. There were 3males and 30 females with a male: female ratio of 1:10 Thirty (91%) patients had subtotal thyroidectomy, 2(6%) patients had Lobectomy while one (3%) patient had a total thyroidectomy. (Fig 2). The average size of glands removed was 348g with a range of 150-800g

The mean operating time was 86.8 minutes with a range of 60-120 minutes. Twenty two (66.7%) patients had only local anaesthesia while the remaining 11 (33.3%) had sedation/ analgesia in addition to local anaesthesia. One patient had reactionary haemorrhage (3%) while one (3%) other patient had superficial surgical site infection. Thirty two (96.9%) of the patients commenced oral fluid intake within six hours of surgery while one (3.1%) patient commenced oral intake after 24 hours. The mean hospital stay was 4 days with a range of 3 to 7 days.

Table 1 shows the types of thyroid surgeries performed in this study.

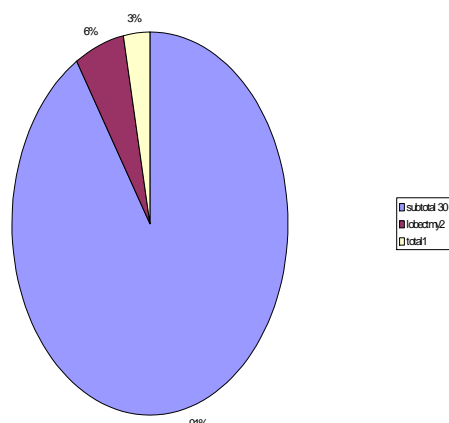
Table 1: Types of Thyroid Surgery Performed

Type of Surgery	Frequency	Percentage(%)
Subtotal Thyroidectomy	30	91
Thyroid Lobectomy	2	6
Total Thyroidectomy	1	3

Figure 1: Modified Draping For Thyroidectomy Under Local Anaesthesia



Fig. 2 Types of goitres operated



## DISCUSSION

The medical field has no doubt recorded some advances in thyroid surgeries performed under local anaesthesia and these include suture less thyroidectomy, video assisted thyroidectomy and thyroidectomy as a day case procedure with excellent results.<sup>2,3</sup> It is however curious to note that surgeons in resource scarce countries like Nigeria and other African countries have been left behind in adopting this practice of thyroidectomy under local anaesthesia which is cost effective despite vast experiences with rural practice even though it offers a safety profile comparable to thyroidectomy performed under general anaesthesia.<sup>7</sup> The story is not completely gloomy for African surgeons as Hodges in Uganda has reported excision of a 1.9kg goitre under local anaesthesia<sup>8</sup> while Ajao in Nigeria has documented his experience with the procedure<sup>9</sup>. Even though African patients usually present with very large goitres, it is heartwarming to note that in the experience of these authors, large goiters are more easily amenable to resection than smaller goiters. Safe as this practice appears, it is advisable that patients be carefully selected<sup>7,10,11</sup> with facilities for general anaesthesia made available for patients that require conversion and the procedure should only be carried out by surgeons that are well conversant with it.

The main finding of this study is a complication rate of 6% occurring in two patients; these were wound infection in one patient (3%) and wound haematoma in one other patient (3%). These are usual complications that result from thyroidectomy irrespective of the mode of anaesthesia<sup>2</sup> and compares favourably to 14.3% shown by Ignjatovic et al<sup>3</sup> in their study. While Hisham and co-workers had a complication rate of 3.1% in their study.<sup>4</sup> The wound infection encountered in this study could

have resulted from the use of Penrose drains<sup>5</sup> in this study coupled with the setting in which the study was carried out. The complications are generally acceptable and should therefore not deter surgeons from performing this procedure at mission outreaches. Moreover the outcome in our patients was satisfactory with no mortality recorded. It is also noticed that 24 out of the 33 (72.7%) patients in this study had been seen and evaluated in hospitals preparatory to thyroidectomy but could not afford the cost of surgery since it was routinely done under general anaesthesia which makes it much more expensive. This underscores the poverty level in the population and highlights the need for governments and well meaning individuals to partner with credible non-governmental organisations in providing free thyroid surgeries to the needy populace.

The rather long hospital stay in this study (table 1) though avoidable was deliberate to give room for better monitoring and to remove drains and stitches before discharge for those living far from the outreach treatment centre since the programmes lasted only 2 weeks each.

Thyroidectomy under local anaesthesia in Nigeria and the rest of Africa holds a promising future and should probably soon be included in the routine operation itinerary of the African surgeon.

**Recommendation:** We recommend that this procedure should only be performed by surgeons that are already conversant with thyroidectomy and facilities should be made available for general anaesthesia in high risk patients. The surgeon practicing in Africa is encouraged to include this procedure in his routine operation list.

With this we conclude that thyroidectomy can safely be performed under local anaesthesia at health care rural outreaches where facilities may not be optimum.

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