

AUGMENTED LOCAL ANAESTHESIA IN SELECTED CASES OF THYROIDECTOMY IN RURAL PRACTICE.

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SUMMARY

An augmentation of local anaesthesia in 12 selected cases of thyroidectomy in a rural practice is presented. The cases were selected according to well defined criteria. The augmentation involved the use of general anaesthesia with Ketamine hydrochloride and diazepam, at the state of mobilizing the superior poles of the gland. This method was adopted following the observation that this stage of surgery under local infiltration, elicited severe coughing and occasional stridor, which were immediately relieved after the administration of general anaesthesia. The result was satisfactory in all cases done. The procedure is therefore, recommended especially in rural practice where anaesthetic expertise and other facilities are inadequate and access to immediate assistance may not be readily available.

KEY WORDS: Thyroidectomy, local anaesthesia, augmentation.

INTRODUCTION

Thyroidectomy either total or partial is associated with some severe complications such as haemorrhage, recurrent laryngeal nerve damage and thyrotoxic crisis. To reduce these risks, the operation is preferably done under general anaesthesia¹⁻³. However, for selected cases, thyroidectomy has also been done under local anaesthesia combined with good sedation and strong analgesics.^{2,7} The reasons for this option include: patients' co-operation in pre-emptying recurrent laryngeal nerve injury, no added anaesthetic expertise, quick post-operative recovery, quick patient discharge from hospital, low morbidity and overall low cost of surgery.^{2,3} Thus it is beneficial to patients especially in rural communities where anaesthetic expertise and other supportive medical personnel and laboratory facilities are inadequate.

This paper reports cases of thyroidectomy performed using augmented local anaesthesia in a rural practice in Nigeria. The hospital is located in Sabongida-Ora headquarters of Owan West Local government of Edo State, where thyroid enlargement, like in other areas in Southern Nigeria, is relatively common.² Patients in this locality hitherto, have to travel about 120 km to the nearest teaching hospital in Benin City, where they may also have to wait for long periods before the surgery is done.

PATIENTS AND METHODS

Eligibility Criteria

Twenty-eight patients who had goiter and were willing to have surgery in the practice between 1988 and 2000 formed the study population. To be eligible for thyroidectomy under augmented local anaesthesia, the following inclusion criteria were used: small to moderate size goiter (4 - 10cm), no clinical evidence of hyperthyroidism adjudged by the absence of

ocular changes, high sleeping pulse rate, fine silky smooth skin and thin short scanty hair.⁸ The exclusion criteria included the presence of obstructive symptoms, suspected malignancy, intra-thoracic extension or any associated medical disease such as diabetes and hypertension. Chest X-ray and X-ray of the neck were done as well as the packed cell volume and grouping and cross matching of blood.

Twelve patients (43%) fulfilled the selection criteria for surgery, while those (n=16) who did not were referred to bigger centres for management.

Surgery:

All patients received a pre-operative intravenous injection of morphia (15mg) or pethidine (100mg), atropine (0.6mg) and diazepam (10mg) via a reliable intravenous line. Surgery was along the line of a standard thyroidectomy viz: supine position, extended neck with chest on a sandbag and head rest with lateral supports. It commenced with skin and platysma infiltration of 30 ml (300mg) to 40 ml (400 mg) of 1% lidocaine hydrochloride with adrenaline acid tartrate BP in 1:100,000; from the angles of the jaw and the mente above to the infraclavicular skin below, then to the middle of the sternomastoid muscles laterally. No further infiltration either to the strap muscles or capsule of the gland was done (vide infra). Skin collar incision was made and flaps of skin and platysma raised.

The inferior and middle portions of the gland were then mobilized with the patient still awake but well sedated to ensure the preservation of the recurrent laryngeal nerve. At the stage of mobilizing the superior poles of the gland with the vessels, the local anaesthesia was converted to general anaesthesia with ketamine hydrochloride (150mg) and diazepam (5mg) as a loading dose and 50mg and 5mg respectively as titrated doses as required until surgery was completed. These drugs are easily available and safe in non-expert hands^{6,8}. The duration of surgery was recorded in all cases, including the weight of the excised gland.

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RESULTS

The mean age of the 12 patients who had surgery was 38.0 years (SD±11.3) years with a female to male ratio of 5:1. The age and sex distribution of the patients are shown on table 1. Six (50%) of the patients are within the age-group of 30-39 years. The average operative time was 74 minutes with a range of 65-135 minutes. (SD±20.2)mins. The mean weight of the thyroid gland removed at surgery was 78.4gms (SD±26.0) gms with a range of 55-150gms. Histopathology of the gland was not done, as there were no facilities for such, nonetheless, we believe that the chances of a missed malignant thyroid gland was slim because of our selection criteria. There were no complications such as hoarseness and wound infection in all patients. The patients had full voice 48 hours post operatively and all stitches were removed on the fifth day post surgery. Two (16.7%) had blood transfusions. The indications were post-operative bleeding and pre-operative anaemia. The later had pre-operative blood transfusion to correct the anaemia.

DISCUSSION

Thyroidectomy under local anaesthesia or regional block has been advocated by several workers¹⁻⁶ and has good results when compared with general anaesthesia.⁴ This series shows a female preponderance, which has been confirmed by other workers.^{1,4} Local anaesthetic infiltration of the skin and platysma was done without further infiltration of the strap muscles at their origin and insertion as well as the capsule of the gland for fear of inadvertently anaesthetising the recurrent laryngeal nerve with its immediate sequelae as reported by Ajao.¹ Moreover we found that the infiltration was adequate for the early stages of the surgery. The mean operative time of 74 minutes is comparable to the 80 minutes reported by Hisham and Aim,² although the local anaesthesia was later converted to general anaesthesia.

The need to convert to general anaesthesia was informed by the disturbing cough reflex, which resulted from traction on the superior pole of the gland during mobilization. This is most likely due to irritation of the external branch of the superior laryngeal nerve, which is closely related to the upper poles, and in a hyper extended neck.

Though the number of cases in this series was small, the results show that all patients did well without any serious complications, which is similar to reports by other workers^{1,2,4,5}. This is probably related to the strict inclusion criteria. Like other workers^{1,2,4,5} we advocate the use of strong intravenous analgesics and sedatives with the local infiltration. In addition, it reduces the total amount of general anaesthesia subsequently needed. The procedure offers an effective and practical solution to an important rural health problem. With careful selection of patients, it is possible to perform thyroidectomy in a rural practice where facilities are minimal without recourse to anaesthetic expertise that is not readily available. However, the selection criteria must emphasise a good clinical judgement as done in this report especially in this environment where the incidence of toxic goiter is about 5%.¹ Nevertheless, limitations, to the procedure include large obstructive goiters though clinically non-toxic, suspected malignant cases, retro-sternal or retro-oesophageal extensions.¹

In conclusion, thyroidectomy under augmented local anaesthesia is recommended for patients living in the goiter-endemic belt of rural Nigeria. It is also associated with a high level of patient satisfaction.

Table 1: Age and sex Distribution of patients

Age group (years)	N	%
>20	0	0.00
20-24	1	8.33
25-29	1	8.33
30-34	3	25.00
35-39	3	25.00
40-44	1	8.33
45-49	2	16.66
50-54	0	0.00
55-59	1	8.33
Total	12	99.98

Gender	N	%
Female	10	83.3
Male	2	16.7
Total	12	100

REFERENCES:

1. **Ajao O. G:** Thyroidectomy under local Anaesthesia Trop. Doct., 1979. .9 .73 - 75.
2. **Hirshman A. N., Aina E. N:** A reappraisal of thyroid surgery under local Anaesthesia: Back to the future? ANZJ. Surg. 2002; 72: 287 - 9.
3. **Soyanwo O. A, Ajao O. G, Agbejule O.A, Amanor-Boadue S.D:** Anaesthesia and Surgery aspects of thyroid swelling: the Ibadan Experience. East Afr. Med J. 1995, 7: 675-7.
4. **Hochiman M., Fee W.E. Jr:** Thyroidectomy under local anaesthesia, Arch. Otolaryngol. Head Neck Surg. 1991 117: 405-7.
5. **Carditello A., Barresi P., Mondello B. Monaco F., Mule V., De Loe G., et al:** Thyroid surgery in assisted local anaesthesia G., Chir 2000; 21: 303-5.
6. **Obekpa P. O:** Thyroidectomy without intubation: A personal experience. Nig. Med. Pract.r 1999; 37(1 x 2)12 -14.
7. **Famuyiwa O.O., Bella A.F:** Thyrotocicosis in Nigeria. Analysis of a five year experience. Trop. Geogr. Med. 1990. 42 (3): 248-54.
8. **Alufohai E. F:** Coping with rural surgery. Sam Bookman Publishers Ibadan 2000p. 14.
9. **Kulkarni R. S. Braveman L. E:** Pathwardhan M. A. Bilateral cervic al plexus block for thyroidectomy and parathyroidectomy in healthy and high risk patients. J. Endocrinal. Invest. 1996. 19(11): 714-8.