Short Communication

THYROIDECTOMY UNDER KETAMINE ANAESTHESIA IN A SEMI URBAN HOSPITAL IN NIGERIA

SO. Elusoji[1], PE Iribhogbe[2], Osime OC[3]

ABSTRACT

Objective: To evaluate the efficacy and safety of ketamine hydrochloride anaesthesia without endotracheal intubation in thyroidectomy.

Methodology: Patients with goitres fulfilling selected criteria had thyroidectomy under ketamine over an 11 year period. The data was pooled and analyzed.

Results: Fifty five patients all females were included in the study. The average gland weight was 80±19g. Emergence response was the commonest complication. One patient developed respiratory obstruction for which she had tracheostomy. There was no mortality.

Conclusions: Thyroidectomy in selected cases under ketamine anaesthesia is safe and economical with minimal morbidity and mortality. We recommend the technique in our sub region where there is a dearth of anaesthetic machines and equipment.

KEY WORDS: Thyroidectomy, Ketamine anaesthesia.

Pak J Med Sci July - September 2009 Vol. 25 No. 4 695-697

How to cite this article:

Elusoji SO, Iribhogbe PE, Osime OC. Thyroidectomy under ketamine anaesthesia in a semi urban hospital in Nigeria. Pak J Med Sci 2009;25(4):695-697.

INTRODUCTION

In many parts of Nigeria it is common to see patients with neglected goitres. A major reason for not seeking orthodox medical treatment is poverty. Poverty is an established cause of high patronage of trado-medical doctors in Africa.[1-6] In the management of goitres they apply herbs over scarification marks in the neck to no avail. To encourage patients to seek orthodox medical management it is necessary to deliver optimum surgical services within the limits of affordability for most patients. A significant proportion of the cost of surgery is due to anaesthesia. In addition owing to the high cost of anaesthetic machines they are not widely available outside tertiary medical centres in Nigeria, where patients with goitres stay on a waiting queue for surgery for many years. In University teaching hospitals thyroidectomy is usually carried out under general anaesthesia with endotrachael intubation regardless of the size of the gland.[7-9]

In view of the above we feel that some cases of goitres could be managed in smaller hospitals using ketamine with a good surgical technique. Ketamine is cheap (an ampoule costs only N200.00 ($1.5) and only a small fraction of it is needed in thyroidectomy). However, there have been concerns on the safety of the airway during ketamine anaesthesia.

1. SO. Elusoji, MBBS, FMCS,
2. PE Iribhogbe, MBBS, FWACS, C.
3. OC Osime, MBBS, FMCS
1-3: Department of Surgery,
College of Medical Sciences,
University of Benin,
Benin City, Nigeria.

Correspondence

Dr. SO Elusoji,
Department of Surgery,
University of Benin Teaching Hospital,
P. M. B 1111,
Benin City, Nigeria.
E-mail: clementosime@yahoo.com

* Received for Publication: February 2, 2009

* Accepted: June 5, 2009

The objective of this study was to evaluate the efficacy and safety of ketamine hydrochloride anaesthesia without endotrachael intubation in thyroidectomy.

METHODOLOGY

This was a prospective study involving patients who presented to a private surgical hospital with goitres over an 11-year period (January 1998 and December 2008). Our hospital is a 40 bed private surgical outfit located in Ikpoba Hill-a suburb community in Benin City, Nigeria. The inclusion criteria were goitre of less than 15cm in size, absence of toxicity, intra thoracic extension, obstructive symptoms or suspicion of malignancy as well as preoperative assessment of American Association of Anesthesiologist classification (ASA) 1.

All the cases were operated upon by qualified general surgeons. An anesthetist was present in some but not all cases. With the patients in supine position, the neck was extended with chest on a sand bag and head rest with lateral supports. Blood pressure, heart and respiratory rates were monitored throughout the procedure. Premedication was given by intravenous administration of 10 mg of diazepam, a few minutes before ketamine. Ketamine hydrochloride in a dose of 2mg/kg was administered intravenously, half of the dose being titrated as required depending on response until the surgery was completed. Thyroidectomy was carried out in each case through the standard skin collar incision with meticulous haemostasis. Closed passive drains were used as indicated. In all cases tracheostomy tubes were available in the operating room for use if necessary.

RESULTS

Fifty five patients were included in the study. All the patients were females with various degrees of euthyroid diffuse or nodular goitres for which they had subtotal thyroidectomy. Thirty (54.5%) of the patients were within the age range of 31-40 years (Table-I) The mean operating time was 52 ± 15.3mins. The mean weight of the glands was 80 ± 19 grams. Two patients had malignant goitres and were referred to other centre's for further management.

The commonest complication was emergence response in eleven (20%) vomiting in two (3.6%) and one patient had respiratory difficulty, which responded to tracheostomy. The patient was weaned off the tracheostomy and extubated two weeks later. None of the patients had blood transfusion. There was no intra or peri-operative mortality.

DISCUSSION

Most of the patients in this study were of middle age group and all of them are females which is similar with some other reports.[10,11] It appears that the hormonal changes that occur in middle aged women encourage the development of goitres. Thyroxin plays a central role in metabolism. Increased metabolic demand at puberty and in middle aged women may produce changes in the structure of the gland that finally lead to its enlargement (goitre).

In our series there was no mortality. This compares favourably with standard general anaesthetic procedure with endotracheal intubation. Even in highly equipped centres deaths in thyroidectomy patients have occurred. Some workers have documented in literature that ketamine hydrochloride anaesthesia without endotrachael intubation may be safer than the standard general anaesthetic procedure.[12-14]

Table-I: Age, Number and Sex Distribution

Age in Years	*Number (%)*
21-30	4(7.3)
31-40	30(54.5)
41-50	9(16.36)
51-60	4 (7.3)
61-70	4(7.3)
71-80	4(7.3)
Total	55(100)

Several workers have reported using local and regional anaesthesia for thyroidectomy.[15-18] However these techniques are rather unpopular because they present unique challenges.

The commonest complication in this study was emergence response after surgery which responded well to tranquilizers like chlorpromazine, diazepam or paraldehyde. In the emergence response to ketamine patients become restless as a result of bizarre dreams and hallucination. Ketamine causes functional dissociation between the thalamocortical and limbic systems.[19] This response can easily be attenuated by the use of benzodiazepine, chlorpromazine or paraldehyde. The prevalence is reduced when these agents are administered to the patients some minutes before ketamine administration which we practice on regular basis. The complications and sequelae of ketamine anaesthesia reported in the literature include increased intracracranial pressure, increased cerebral blood flow, increased cerebral metabolic rate, increased intraocular pressure, increase in skeletal muscle tone, convulsions and purposeless movements.[19] These untoward effects were not major issues in our study.

In conclusion ketamine anaesthesia is economical and safe for thyroidectomy in selected patients in the presence of good surgical technique. Its use in developing nations such as Nigeria could help reduce the incidence of neglected goitres and the waiting list in tertiary medical centers.

REFERENCES

1. Odum CU, Akinkugbe A. The causes of maternal deaths in eclampsia in Lagos, Nigeria. West Afr J Med 1991;371-6.
2. Ohanaka EC. Discharge against medical advice. Trop Doct 2002;32:149-51.
3. Okonkwo JEN, Ngene O. Determinants of poor utilization of orthodox health facilities in a rural community. Nigerian J Clinical Practice 2004;7:74.
4. Onuba O. Management of civilian gunshot wounds in a Nigeria Hospital. Archives Emergency Med 1987;4:73-6.
5. Onuminya JE. Misadventure in traditional medicine. J Pak Med Assoc 2005;97:824-5.
6. Thanni LO. Factors influencing patronage of traditional bonesetters. West Afr J Med 2000;19:220-4.
7. Alufohai EF. Odusanya OO, Augmented local anaesthesia in selected cases of thyroidectomy in rural practice. Nig J Clinical Practice 2004;7:31-2.
8. Alufohai EF. Coping with rural surgery. Sam Bookman Publishers Ibadan 2000;14.
9. Famuyiwa OO, Bella AF. Thyrotocicosis in Nigeria. Analysis of a five years experience. Trop Geogr Med 1990;42(3):248-54.
10. Obekpa PO. Thyroidectomy without intubation: A personal experience. Nig Med Pract 1999;37(2):12-14.
11. 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.
12. Hochiman M, Fee WE, Jr: Thyoidectomy under local anaesthesia, Arch Otolaryngol Head Neck Surg 1991;117:405-7.
13. Soyanwo OA, Ajao OG, Agbejule OA, Amanor-Boadoa SD. Anaesthesia and Surgery aspects of thyroid swelling: the Ibandan Experience. East Afri Med J 1995;7:675-7.
14. Hirshman AN, Aina EN. A reappraisal of thyroid surgery under local Anaesthesia: Back to the future? ANZJ Surg 2002;72:287-9.
15. Hodges AM. Excision of a 1.9kg goiter under local anaesthetic. Trop Doct 2005;35:43.
16. Stephen E, Nayak S, Salins SR. Thyroidectomy under local anaesthesia in India. Trop Doct 2008;38:20-1.
17. Misauno MA, Yilkudi MG, Akwaras AL, Embu HY, Ojo EO, Dakum NK, et al. Thyroidectomy under local anaesthesia. How safe? Nig J Clin Practice 2008;11:37-40.
18. Rahman GA, Kolawole IK. Cervical plexus block for thyroidectomy: experience with a giant goiter. Nig J Clin Practice 2008;11:158-61.
19. Foulkes-Crabble DJO. Anaesthesia In; Principles and Practice of Surgery including Pathology in the Tropics. Ghana Publishing Corporation 2003;1126-68.