Thyroidectomy under local anaesthesia: experience with giant goitres

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Introduction

The first successful thyroidectomy on record appears to have been performed in about 952 A.D. in Zahra, an Arab city of Spain by a Moorish physician, Albucassis. The extirpation of thyroid gland for goiter typifies, perhaps better than any operation, the supreme triumph of the surgeon's art. More than 80% of thyroid swellings are operated upon primarily for cosmetic reasons.

Thyroidectomy is usually performed with general endotracheal anaesthesia. However, in many developing countries, because of the severe shortage of anaesthetists, anaesthetic drugs and equipment it can be done under local anaesthesia with acceptable results. Giant goiter is an enlargement of the thyroid gland not less than 10gm/kilogram body weight.

Previous reports of thyroidectomy under local anaesthesia were not for giant goiters. Ajao in 1979 wrote: "up to a certain limit the more prominent the thyroid gland is, the easier it is to remove under local anaesthesia". This is a prospective study of thyroidectomy done for giant goiters in a semi-urban hospital (Nakowa Hospital, Yauri, Kebbi State, Nigeria). The aim of this study was to determine the feasibility, safety, effectiveness and acceptability of local anaesthesia for thyroidectomy. It was also meant to assess any difficulty or complication specifically associated with the procedure.

Materials and methods

All cases of thyroidectomy done for giant goiters under local anaesthesia in Nakowa Hospital, Yauri between January 1990 and December 1994 were included in this prospective study. Only cases of simple goiter without retrosternal extension were included. Toxic goiters and malignant goiters were excluded. After giving informed consent, the patients received premedication of intramuscular pentazocine and diazepam. They had an intravenous infusion in place and had at least three units of blood crossmatched. On the operating table, the patients were placed in the typical position for thyroidectomy, with sandbags behind the shoulders to extend the neck and a head ring to stabilize the head. Local infiltration was done using 1% lignocaine hydrochloride with adrenaline, up to a maximum dose of 7mg/kg body weight. The site of the collar incision was usually chosen as the site of local infiltration. This is usually slightly higher than the conventional site because of the possibility of burrowed skin from the upper part of the chest in patients with giant goiters. After deepening the incision down to the platysma, the upper flap is raised as far as the thyroid notch and the lower flap down to the suprasternal notch. The investing fascia is then incised vertically in the midline which can sometimes be difficult to identify because of the distorted anatomy. After separating the strap muscles at the midline, traction has to be done with care. Mobilization of the thyroid gland may not be difficult in these giant goiters but sometimes difficulty is encountered and the strap muscles may have to be divided, and repaired later. Extra care is required in thyroid gland mobilization especially when done under local anaesthesia and traction on the trachea should be gentle to avoid laryngeal spasm. Routine identification of the blood vessels (including new unusual vessels in some of these giant goiters), ligation and division is done before excision of the gland. Usually the superior thyroid vessels were ligated close to the thyroid gland to avoid injury to the superior laryngeal nerve and the inferior thyroid vessels away from the thyroid gland to avoid injury to the recurrent laryngeal nerves.

There was continuous conversation with the patients during the procedure. This encouraged phonation and ensured the integrity of the recurrent laryngeal nerve. After securing haemostasis, drain was left insitu and wound closed, using subcuticular nylon for the skin.

Results

Over a period of five years (1990-1994), ten patients with giant goiters who gave consent for their thyroidectomy to be done under local anaesthesia were included in this study. One of them had to be augmented using ketamine; the remaining 9 were done under local anaesthesia. They were all females aged between 40 and 62 years (mean 50.8 years). Table 1 shows the clinical details. Figs 1 and 2 show one of the patients pre- and post-op. The weight of the gland removed ranged from 700g to 3,500g and the weight of the patients ranged from 60 to 72kg. They all tolerated subtotal thyroidectomy under local anaesthesia satisfactorily. One of them had to be converted to general anaesthesia hence only nine form the basis of this communication. Out of the nine patients one had intramuscular Tramal 100mg intraoperatively for postural pain. The duration of the procedure lasted between 60 and 120 mins. Only one patient required blood transfusion and she had 3 units of whole blood. Intravenous fluid was discontinued 6 hours after the operation and patients had postoperative analgesia. One patient had a transient hoarseness of the voice and redundant skin that had to be excised later. There was no mortality. Histologically all of them were colloid goitres.

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Figure 1

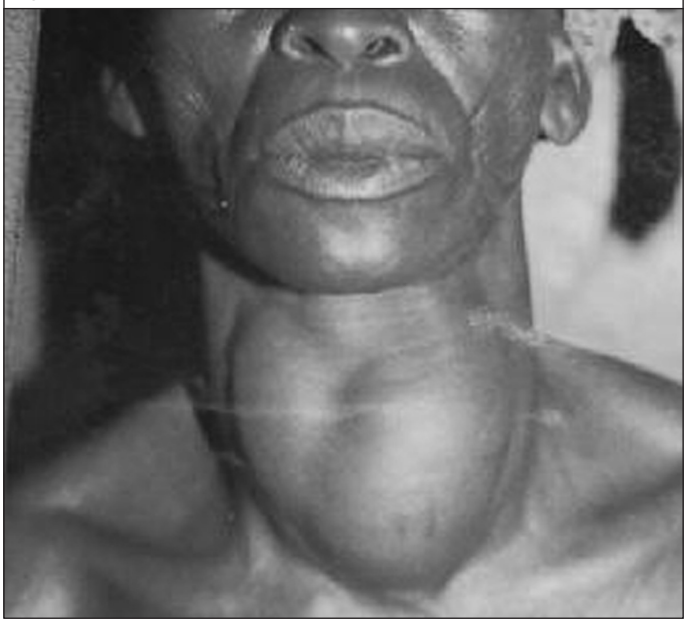

TABLE 1: SUBTOTAL THYROIDECTOMY DONE UNDER LOCAL ANAESTHESIA: EXPERIENCE WITH GIANT GOITRE – CLINICAL DATA

	CLINICAL DATA	RESULT
1.	- Total Number of Patients	10
	-Number who had procedure completed under Local Anaethesia	9
2.	Age (years) range	40 -62
	mean	50.8
3.	Duration of Neck Swelling (year) range	10-15 years
	mode	10 years
4.	Duration of Procedure (minutes.)	60-120
5.	Weight of Glands Removed (grams) range	700-3,500g

Discussion

Simple non-toxic goitre constitutes the commonest type of thyroid gland disease.[1,2,3] In 1959 Thomas published the first report from Ibadan on "The large Goitres". Over 60% of his 100 cases had "massive goiters".[4] Many years later, Olurin in the same institution in Ibadan published the findings of a prospective study that identified the clinico-pathophysiological problems of surgically managing patients with simple goitre not less than 10gm per kilogram body weight. This he called the Simple Giant Goitre Syndrome (SGGS).[5] These patients have simple goiters weighing not less than 10gm/kilo body weight, with a history usually of not less than 10 years duration and predominantly in peasant woman of about 41 to 50 years of age who live in rural goitre endemic area.[5] Thyroidectomy is usually performed with general endotracheal anaesthesia. In most cases this reflects both surgeon's preference and the patient's choice. However, local and regional anaesthesia remains useful alternatives for selected patients.[6] This is particularly so, in many developing countries because of the severe shortage of anaesthetists, anaesthetic drugs and equipment.[7] Previous reports of thyriodectomy under local anaesthesia[7,8] were not for giant goiters. Ajao in his series of thyroidectomy under local anaesthesia[7] wrote: "…. Up to a certain limit the more prominent the thyroid gland is, the easier it is to remove under local anaesthesia". This present study reports nine cases of giant goitre that had successful subtotal thyroidectomy under local anaesthesia in a Semi-urban Community (Yelwa-Yauri) in Kebbi State of Northern Nigeria. It highlights the technique of local infiltration and some areas of difficulty as well as the extra care required when doing thyroidectomy under local anaesthesia. With meticulous and careful dissection, bleeding will be minimized and the need for blood transfusion avoided. There must be less traction on the trachea during manipulation to avoid excessive coughing and laryngeal spasm. Sometimes infiltration of the preteacheal fascia with local anaesthesia before mobilization of the thyroid gland could be useful.

Surgeons in training in developing countries should be encouraged to have adequate exposure and training in local anaesthesia and regional techniques. This is to avoid a situation where surgeons in peripheral hospitals are reluctant to perform thyroidectomy, with the excuse that there is no anaesthetist. These patients will then be left with these alternatives[7]: (a) to travel over long distances, in many cases, to teaching hospitals where the waiting period may be over six months (b) to live with the social stigma if the patient cannot afford the expenses of traveling to a teaching hospital. This procedure is safe, simple, acceptable and cost-effective in our experience.

The more prominent the thyroid gland is, the easier it is to remove under local anaesthesia provided the surgeon is meticulous, and understands that with giant goiters, the normal anatomy is distorted and numerous new vascular channels are always present. This procedure is recommended for carefully selected patients to be handled by experienced surgeons in peripheral hospitals.

Figure 2

References

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