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Anaesthesia for minilaparotomy female sterilization in JUTH, Nigeria: A fourteen-year review

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Summary

This is a retrospective study aimed at evaluating the various anaesthetic methods used for minilaparotomy female sterilization. During the fourteen-year period, 2913 clients had minilaparotomy female sterilization. Their mean age was 36.35 ± 4.19 years. Mean number of living children was 6.82 ± 1.64. 74.87% of the clients did not have any formal education, but were aware of other contraceptive options. In all 98.42% of the clients were married and in a stable relationships. Local anaesthesia with 1% xylocaine (10-20 mls) was used in 83.69% of the cases. Local anaesthesia with sedation in 13.53% and general anaesthesia in only 2.78%. Above 93.55% (2725) of the sterilization was carried out as an interval procedure, while 6.45% (188) were done postpartum. Pomeroy's technique was used in 96.98% of the tubal ligation. There was no mortality. The morbidity was vomiting and hallucination and it occurred in 0.20% amongst the clients who had sedation or general anaesthesia.

Minilaparotomy under local anaesthesia for female sterilization has been found to be safe an effective outpatient procedure, and it is currently and established family planning option in our institution. The use of local anaesthesia alone gradually rose from 1987 up to date. The successful outcome was attributable to psychological and emotional preparation of the clients who also had to learn abdominal breathing exercises (for easy access to the fallopian tubes) from the trained personnel before the procedure.

Keywords: *Anaesthesia, minilaparotomy, female sterilization*

Résumé

Ceci est une etude retrospective pour evaluer les differentes methoes d'anesthesie utilisees pour la ligature les trompes par minilaparotomie. Pendant la periode de quatorze ans 2913 clientes out en une minilaparotomie pour ligature des tronpes. Leur age moyen etait de 36.35 ± 4.19 ans. Le number mon d'enfants vivants etait de 6.82 ± 1.64. 74.87% n'etaient pas instruites, mais ont été informe sur l'option contraceptive. 98.42% etaient marie, avec un foyer stable. L'anesthes locale avec la xylocainse 1% (10 – 20 ml) avait été utilise dans 83.69% des cas, l'anesthesie locale avec sedation dans 13.53% et une anesthesrie generale dans 2.78% des cas seuement. 93.55% (2725) des ligatures etaient faites par procedure intervallaire, et 6.45% (188) etraunt faites en post-partum. La technique de POMEROY a été utilise dans 96.98% des ligature de trompe. Le n ya eu aucun deces. 0.20% des clientes sous sedation, ou anesthesie generale ont presente une morbidité marquéé pardes vomissements, est des hallucinations.

La minilaparotomie sous anesthesie locale pour la ligativie des taounpes appasait tre une procedure benigne pour les clientes ambulentes. L'utilisation de l'anesthesie locale fut progressivement introduite depuis 1987, jurqu' aujourd'hui. Le taux de reussite etait lié a la preparation psychologique et emmotionnelle qui devient en plus apprendre des exercices de respiration abdominale (pour l'acces facile aux trompes), des personnel forme, avant la procedure.

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Introduction

Voluntary female sterilization is the world's most widely used family planning method. An estimated 138 million women of reproductive age use this method [1]. The minilaparotomy developed in 1960 has transformed female sterilization into a quick safe and outpatient procedure [2-3].

General anaesthesia for minilaparotomy provides excellent analgesia and amnesia with preservation of a quiet operative field and optimal muscle relaxation. The chief disadvantage is that, specially trained personnel must be available, resulting in increased cost. In addition expensive defribillators and electronic monitors should be available if general anaesthesia is used to make for quality in service delivery. Recovery may be prolonged, and the risk of anaesthetic-related complications are responsible for as many as one-third of deaths associated with female sterilization [4].

Minilaparotomy under local anaesthesia has however proved to be safer for the patients, less costly, simpler to administer, shorter in procedure and recovery time and appropriate for minilaparotomy. It is indeed recommended for women with severe medical problems such as cardiovascular disease, thyroid irregularities and diabetes [5-8]. The most common complication associated with local anaesthesia is overdose of systemic sedatives that are given to relax the patient to make her more comfortable. Because of this risk, many programs have eliminated the use of heavy sedation. Local anaesthesia is used alone or with light sedation [1]. We present, in this study, our experience of anaesthetic methods used for minilaparotomy female sterilization over the last fourteen years.

Subjects and methods

The case notes of the 2913 clients who had minilaparotomy female sterilization were retrieved and analyzed for socio-demographic characteristics, the timing, technique of minilaparotomy and the anaesthetic methods used for the procedure.

The clients were counselled on the type of analgesia to be used and in addition they were taught abdominal

exercises to aid in the delivery of the fallopian tubes. All the patients signed informed consents.

The anaesthetic methods used were classified into local anaesthesia, using 10-20ml of 1% xylocaine, local anaesthesia with intravenous sedation which could be any of the following: pethidine 50mg, phenergan 25mg, largatil 25mg or valium 10mg and general anaesthesia. Thiopentone was administered for induction of general anaesthesia and the patient intubated with suxamethonium. Anaesthesia was maintained with nitrous oxide, oxygen, halothane and muscle relaxant. Intravenous 0.6mg atropine was administered to all the clients just before infiltration of the anaesthetic solution.

Results

Socio-demographic characteristics:

The mean age at sterilization was 36.35 ± 4.19 years. Mean number of living children at the time of the procedure was 6.82 ± 1.64. The age and parity distribution are displayed in Tables 1 and 2. About 78.87% of the clients did not have formal education, 16.68% had primary education while 8.45% had secondary or higher education. In all 98.42% were married and in a stable relationship.

Table 1: Age distribution of clients undergoing minilaparotomy sterilization

Age (years)	Number	Percentage (%)
20-24	3	0.10
25-29	96	3.30
30-34	705	24.20
35-39	1278	43.87
40-44	736	25.27
≥45	95	100.00
Total	2913	100.00

Table 2. Parity distribution of clients.

Parity	Number	Percentage (%)
2	3	0.10
3	30	1.03
4	68	2.33
5	198	6.80
6	370	12.70
7	512	17.58
8	1732	59.46
Total	2913	100.00

The anaesthetic methods:

83.69% of the procedure was done under local anaesthesia. 13.53% under local anaesthesia with sedation while only 2.78% had minilaparotomy under general anaesthesia (Table 3). The trend in the anaesthetic techniques over the fourteen-year period is shown in Figure 1. About 93.55% of the sterilization was carried out as an interval procedure. 6.45% of the clients were sterilized postpartum (Table 4). Pomeroy's technique was mainly used in 96.98% of the procedure for tubal ligation (Table 5).

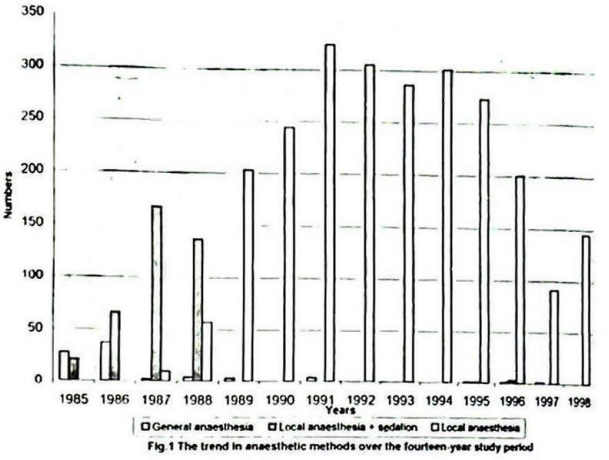

Fig.1 The trend in anaesthetic methods over the fourteen-year study period

Table 3: The anaesthetic methods

Anaesthesia	Number	Percentage (%)
Local anaesthesia	2438	83.69
Local anaesthesia + sedation	394	13.53
General anaesthesia	81	2.78
Total	2913	100.00

Table 4: Timing of female sterilization

Timing	Number	Percentage (%)
Interval	2725	93.55
Postpartum	188	6.45
Total	2913	100.00

Table 5: Technique of tubal occlusion

Technique	Number	Percentage (%)
Pomeroy	2825	96.98
Fimbriectomy	56	1.92
Falope ring	27	0.93
Filshie clip	5	0.37
Total	2913	100.00

Discussion

Voluntary female sterilization is fast gaining acceptance in many African countries as a contraceptive option for women who have completed their desired family size [1]. The socio-demographic characteristics of the clients in the study have shown them to be older grandmultiparous women, which is similar to other studies [9-12]. This is however not the trend in developed countries, Asia and far East were couples are choosing to have fewer children and limiting their families at younger ages [13].

At the initial stage of voluntary surgical contraception in the department, general anaesthesia was mainly used. This

was however followed by the use of local anaesthesia with sedation [14]. The Association of Voluntary Surgical Contraception assisted the department in 1985 to establish a minilaparotomy under the local anaesthetic program The goal of the program is to make minilaparotomy female sterilization available, affordable and accessible to clients. The program trained personnel who provided the skill and quality assurance in the service. This gradually saw the growth of minilaparotomy under local anaesthesia from 1987 as depicted in Figure 1. Most of the clients had interval procedure because the survival of the last child born was crucial to acceptability of postpartum sterilization in view of the high perinatal outcome amongst the populace [15]. The predominant technique of tubal occlusion was Pomeroy in 96.98% of the acceptors. There was no mortality and the morbidity, limited to vomiting and hallucination during the study period was 0.20%. In conclusion, minilaparotomy under local anaesthesia has become an established, safe and effective family planning service in our institution made possible by trained doctors and counsellors.

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