ORIGINAL ARTICLE

# Bilateral tubal ligation in a rural hospital in the Niger Delta, Nigeria

GO Igberase, PN Ebeigbe, OUJ Umeora[1], HO Abedi

Department of Obstetrics and Gynecology, College of Health Sciences, Delta State University, Abraka, Delta state, [1]Ebonyi State University Abakaliki, Abakaliki, Nigeria

## Abstract

**Background and Objective:** To document bilateral tubal ligation (BTL) rates and highlight the need to improve on the rates.

**Materials and Methods:** A retrospective review of BTLs done in a five-year period from January 2000 to December 2004 constituted the study group.

**Results:** There were a total of 103 BTLs, 58 were Caesarean BTLs, six were cases of BTL with repair of uterine rupture and 39 had BTL from mini-laparotomy. There were 937 Caesarean sections and 2,356 deliveries during the study period. BTL therefore constituted 0.044% of the total deliveries. The majority (51.7%) were above 35 years of age and grandmultiparity constituted 60.4% of BTL cases. The majority was in the low social Class 4 and 5 (41.3%). Grandmultiparity was the most common indication (60.4%). Previous Caesarean sections were more in the highest social class with a mean of 2.9 ± 1.21 while ruptured uterus had the lowest. Unbooked cases of BTL constituted 62.1% of BTL.

**Conclusions:** Bilateral tubal ligation rate was low in this study with grandmultiparity being the commonest indication, the majority of patients were elderly parturient and largely unbooked. Social class was highest among those with previous Caesarean section.

**Key words:** Bilateral tubal ligation, booking status, Caesarean section, maternal mortality, social class

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## Introduction

Bilateral tubal ligation is the commonest mode of contraception worldwide[1] but is yet to gain wide acceptance in Nigeria as a result of many factors such as ignorance, illiteracy, superstitious beliefs and some myths surrounding it. In this region, women believe that procreation will be impossible after a bilateral tubal ligation (BTL). Aversion to Caesarean section is still very high[2] here because of similar factors mentioned earlier for BTL. This definitely will be reflected on the Caesarean BTL rate. Incidence of BTL worldwide *is* rising and in New South Wales, a study revealed that 70% of sterilization operations were performed for contraceptive management only while 11% were concurrent with Caesarean section.[3] Incidenta1 findings in this study were increase in Caesarean section and proportion of women having concurrent sterilization.[3]

**Address for correspondence:**
Dr. G. O. Igberase,
P.O. Box 4246, Warri, Delta State, Nigeria.
E-mail: gabosaa@yahoo.com

Few reports have been documented on BTL in Nigeria and no study has been done in this region. A study in a Western Nigeria hospital revealed that sterilization was the least selected method of contraception (5.8%).[4] In a study in Jos, Nigeria the acceptance rate of BTL by the clients was (21.7%) amongst the contraceptive methods.[5]

Common indications for BTL are grandmultiparity, two or more previous Caesarean sections, ruptured uterus and medical disorders of pregnancy.

The maternal mortality figure in Nigeria is very high[6] and there is therefore a need for a reliable contraception such as

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bilateral tubal ligation. This is more important in a setting such as ours where the majority of women deliver in homes of traditional birth attendants and maternities where skilled attendants at delivery and emergency obstetric care are unavailable.[6] It is against this background that this study was conceived.

## Materials and Methods

This study was done at the Baptist Medical Centre, Eku, Delta State, Mission Hospital situated in a rural community. It has served as a major referral hospital in the Niger Delta for over 50 years. It provides specialist outpatient and in-patient medica1 care in Obstetrics and Gynecology, Pediatrics, General and Orthopedic Surgery and Internal Medicine. It gets referrals from private clinics, maternities and traditional birth attendants.

A retrospective review of bilateral tubal ligations done in a five-year period from January 2000 to December 2004 constituted the study group. Booked patients are those who received antenatal care and delivered in the hospital while unbooked patients are the ones who did not receive antenatal care but came to deliver in the hospital. The patients were also grouped into various social classes using the classification by Olusanya and Okpere.[7] The consultant or senior registrar made the decision for Caesarean section and bilateral tubal ligation after obtaining an informed consent from the couple.

## Results

There were a total of 103 BTLs, 58 were Caesarean BTLs, six were cases of BTL with repair of uterine rupture and 39 had BTL from mini-laparotomy. There were 937 Caesarean sections and 2,356 deliveries during the study period. BTL therefore constituted 0.044% of the total deliveries.

Table 1 shows that the majority (51.7%) were above 35 years of age and grandmultiparity constituted 60.4% of the BTL cases. The majority were Christians (89.7%) and in the low social Class 4 and 5 (41.3%).

In Table 2 there was no definite trend in BTL cases over the years but 2004 recorded the highest number of cases.

Table 3 shows that grandmultiparity was the most common indication (60.4%) followed by previous Caesarean section (39.7%) and ruptured uterus (6). Previous Caesarean sections were more in the highest social class with a mean of 2.9 ± 1.21 while ruptured uterus had the lowest social class with a mean of 4.3 ± 0.82.

Unbooked cases of BTL constituted 62.1% of BTL.

**Table 1: Sociodemographic status of patients**

| Parameter | *N* = 58 | Percentage |
|---|---|---|
| Age (years) | | |
| 20-24 | 1 | 1.7 |
| 25-29 | 3 | 5.2 |
| 30-34 | 24 | 41.4 |
| >35 | 30 | 51.7 |
| Parity | | |
| 3 | 8 | 13.8 |
| 4 | 15 | 25.9 |
| 5 | 12 | 20.7 |
| >5 | 23 | 39.7 |
| Religion | | |
| Christianity | 52 | 89.7 |
| African traditional religion | 3 | 5.2 |
| Others | 3 | 5.2 |
| Social Status by class | | |
| 1 | 10 | 17.2 |
| 2 | 13 | 22.4 |
| 3 | 11 | 20.0 |
| 4 | 14 | 24.1 |
| 5 | 10 | 17.2 |

**Table 2: Total deliveries and Caesarean BTL trend**

| Parameter | Year | | | | | |
|---|---|---|---|---|---|---|
| | 2000 | 2001 | 2002 | 2003 | 2004 | Total |
| Total deliveries | 600 | 541 | 424 | 410 | 381 | 2,356 |
| Caesarean section (CS) | 207 | 262 | 164 | 176 | 128 | 937 |
| Bilateral tubal ligation | 9 | 12 | 12 | 11 | 14 | 58 |

**Table 3: Mean of social class and indications for Caesarean BTL and BTL following ruptured uterus**

| Parameter | *N* = 58 | Mean of social class | Percentage |
|---|---|---|---|
| Indications | | | |
| Grandmultiparity | 35 | 3.7 ± 1.08 | 60.4 |
| Previous caesarean section | 22 | 2.9 ± 1.21 | 38.0 |
| Two previous Caesarean sections | | | |
| And congenital malformation | 1 | - | 1.7 |
| Total | 58 | | 100 |
| Ruptured uterus | 6 | 4.3 ± 0.82 | |

## Discussion

The study shows that overall delivery rates and BTL rates are low in this study. The high cost of maternity care in this centre may partly be responsible and this rose in the early 1990s following the withdrawal of the Southern Baptist convention of America who hitherto were subsidizing healthcare.

The majority (51.7%) of patients were elderly (above 35 years) and this may also be related to the fact that the majority of the

patients were grandmultiparous as this was the commonest indication for BTL. This is similar to findings in other studies.[8,9] Social Class 4 and 5 constitutes 41.4% of Caesarean BTL. This may be a due to the fact that complication rates in pregnancy and delivery are higher in the low social class when compared to the higher social class.[10,11] Those in the low social class are more likely to book late and present late in hospitals since the cost of obstetric care is high in a private hospital such as ours and this is also complicated by illiteracy and ignorance that is common in this group of patients.[6]

Previous Caesarean section was the next most common indication for BTL. An earlier study in Jos, Nigeria showed that repeat Caesarean section accounted for 55.5% of Caesarean BTL.[12]

This study also found that the mean social class of 2.9 ± 1.21 was the highest and this constituted those in the previous Caesarean section group. This may imply that in our setting those in the higher social class are likely to agree for a Caesarean section to be performed on them. Aversions to Cesarean section by Nigerian women in many centers have been documented by some authors and factors responsible are low socioeconomic status, illiteracy, ignorance, and various myths existing in the society among others.[2]

Patients who presented with ruptured uterus had the lowest social class with a mean of 4.3 ± 0.82. This again may be due to the fact that the poor are likely to be unbooked and to visit maternities and homes of traditional birth attendants and then present late in labor with prolonged obstructed labor and its complications such as ruptured uterus.[10]

Unbooked cases of BTL constituted 62.1% of BTL. Unbooked status is a common finding amongst Nigerian patients in most Nigerian studies.[6,10,13]

The modern method of performing BTL is by laparoscopy. It may be used at anytime other than the postpartum period and involves either a single umbilical 10-mm port or a smaller umbilical camera port and a secondary suprapubic port through which the various devices are introduced. Knots, diathermy and clips are used in ligation.[14,15]

For postpartum procedures, although some studies describe successful use of laparoscopy, the sub-umbilical mini-laparotomy is used most commonly in the US and worldwide.[14,15] Surgical skills for this technique are still lacking in most centers in Nigeria.

In conclusion, the BTL rate was low in this study with grandmultiparity being the commonest indication, the majority of patients were elderly parturient and largely unbooked.

Social class was highest among those with previous Caesarean section followed by grandmultiparity and ruptured uterus.

Concerted efforts should be made to educate our women on the benefits of BTL and maternity services should be subsidized or made free. Governmental and non-governmental agencies should assist in establishing these as it will impact the rural masses.

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