Uptake of Bilateral Tubal Ligation as a Contraceptive Option at Alex Ekwueme Federal University Teaching Hospital Abakaliki over a Four Year Period

Darlington-Peter Chibuzor UGOJI[1*], Fidelis Agwu ONU[1], Obiora Godfrey ASIEGBU[1], Uzoma Maryrose AGWU[1], Ugochi Chimerem UGOJI[2], Chibueze Haggai NJOKU[3]

[1]*Department of Obstetrics and Gynaecology, Alex Ekwueme Federal University Teaching Hospital Abakaliki, Ebonyi State*
[2]*School of Nursing, Alex Ekwueme Federal University Teaching Hospital Abakaliki, Ebonyi State*
[3]*Department of Internal Medicine, University of Calabar Teaching Hospital, Cross Rivers State*
**Corresponding Author*

Abstract:-

Background: **Family planning is one of the 12 pillars of reproductive health and bilateral tubal ligation(BTL) is a permanent method of family planning among females with low acceptance rate in Africa. It results in mechanical blocking or interruption of the fallopian tubes to prevent sperm from fertilizing the egg. This study aimed to document bilateral tubal ligation rates, indications and methods used at Alex Ekwueme Federal University Teaching Hospital Abakaliki.**

Methodology: **This was a retrospective review of records from January 2012 to December 2015. The case files of all women who had bilateral tubal ligation were retrieved and reviewed. Data were retrieved, entered into a study proforma, reviewed and analyzed. The results were expressed using descriptive statistics.**

Results: **There was a total of 31 cases of bilateral tubal ligations(2.1%) out of the 1460 new acceptors of contraception within the study period. It were commonest among parturient aged 20–29years (41.4%), grandmultipara (72.4%), rural dwellers (75.9%), farmers (51.7%) and those with no formal education (38.1%). The commonest indication for bilateral tubal ligation was ruptured uterus (79.3%). Modified Pomeroy's technique (75.9%) was the commonest method of tubal sterilization and majorly (79.3%) bilateral tubal ligation was done during laparotomy as a component of management of ruptured uterus. No complication specific to tubal ligation was noted.**

Conclusion: **Most of the bilateral tubal ligations were medically (Obstetrics) indicated and uptake was low compared to other forms of contraception.**

Keywords: **Family planning, female sterilization, permanent contraception, tubal ligation.**

I. INTRODUCTION

Bilateral tubal ligation (BTL) is a form of female sterilization which results in mechanical blocking or interruption of the fallopian tubes to prevent sperm from fertilizing the egg.[1-4] It is a permanent, safe and effective method of contraception. It is one of the methods of family planning[1]. Family planning is one of the twelve pillars of reproductive health with important benefit for both maternal and child health [1].More than two hundred women in the developing world would like to delay there next pregnancy or even stop bearing children altogether, but many still rely on traditional and less effective methods of contraception or no method at all [5]. Unplanned pregnancy possess a major public health challenge for women of reproductive age, especially in developing nations[5]. Eighty million of the two hundred and ten million pregnancies (38%) that occurs annually worldwide are unplanned[5]. Nigeria is worse off with 6.8 million pregnancies annually; 4% of which are unwanted, 7% of which are mistimed and an estimated maternal mortality rate of 576 per 100,000 live births[5-9].

Bilateral tubal ligation has been said to be one of the best and effective method of contraception for women who have completed their family size or for whom there is medical indication[2,3,5]. Yet the acceptance rate is low because of lack of awareness and deep rooted socio-cultural and religious barriers[2,5]. Worldwide, 190 million couple accept surgical sterilization as a safe and reliable method of contraception [3]. Fifthly percent of couples aged 35-44 years in Britain are using either male or female sterilization as their method of contraception [10]. The story is not different in the United States of America where eleven million women between the age of 15 and 44 rely on tubal sterilization for contraceptive [10]. Seven hundred thousand tubal sterilization are performed annually in the USA [3]. The rate in Mexico is 42.2% [10]. In Nigeria, the rate is variable; from 0.1% in Kano North West Nigeria[2], to 1.0-3.2% in the south east Nigeria [11,12] to 5.8% in Markudi in North Central state of Benue [6].

Tubal sterilization is indicated for women who want a permanent method of contraception or for women in whom pregnancy could represent a significant socio/medical risk [2,3]. The commonest indication for tubal ligation during caesarean section was repeat cesarean section[13].The procedure can be carried out either on an outpatient or inpatient basis during the post-partum (usually within 48hours after delivery) or interval (done six weeks or more after delivery)[9]. In 1960s, age

multiplied by parity, had to be greater than or equal to 120 before elective sterilization could be considered, but in the 1970s, the protocol was liberalized, partly by population control policies[2-4].Methods of tubal ligation includes Pomeroy, Modified Pomeroy, Parkland, Uchida and Irving[3,9,14]. The fallopian tube can be approached through laparotomy, minilaparotomy, culdotomy, culdoscopy and laparoscopy using different anaesthetic techniques[1]. Failure after surgical ligation is rare and crude failure rate ranges from 0.2%-1.3% with highest failure rate in tubal ligation done at caesarean section or immediate post-partum [7].

Certain factors that militate the use of tubal ligation as a contraceptive option includes lack of awareness, lack of access, cultural factors, religious factors, opposition to use by partner or family members, fear of risk, low educational level, poor socio-economic status, poverty, inadequate counselling, limited facilities and trained personnel [2,5]. With the population boom in Nigeria close to 160million, an estimated growth rate of 3.2% and a total fertility rate of 5.72% and 6.3% in the urban and rural areas respectively, [5-9]one would wonder why the uptake of bilateral tubal ligationas a contraceptive option is on the low side [2,6,11,12]. Ebonyi state belongs to the educationally less developed states in Nigeria[15]. The health seeking behavior in this environment is low and there is a high incidence of maternal mortality[16,17]. Despite that, there is no available data on the uptake of bilateral tubal ligation as a contraceptive option irrespective of its numerous benefit in reproductive health. Hence this study.

II. MATERIALS AND METHOD

This study was carried out in the department of obstetrics and gynaecology of Federal Teaching Hospital Abakaliki Ebonyi State, Nigeria. The hospital is a product of the merger of two hospitals: Ebonyi state teaching hospital and federal medical centre Abakaliki. It is the only tertiary hospital in the state. It draws its patients primarily from Ebonyi state and neighbouring states Enugu, Benue, Abia and Cross Rivers. Majority of the patients are drawn from referrals from maternity homes, mission hospitals, state general hospital and private clinics. A good number of patients come as self-referrals.

This study is a retrospective descriptive study of bilateral tubal ligation at the obstetrics and gynaecology department of the hospital. The case files of all women who had bilateral tubal ligation between January 2012 to December 2015 were retrieved and reviewed. The files were retrieved from the medical records department and family planning department. To ensure that all case were included, the delivery register, labour wardregister, gynaecological ward register, post natal wardregister and operating theatre record were cross checked. Data was extracted and entered into the study proforma focusing on socio-demographic and obstetrics characteristic, indications for BTL, methods of BTL, associated procedures when BTL was/was not the primary procedure. The complications following BTL were ascertained.

Data was analyzed using SPSS version 20.0 software. The results were expressed as frequency tables, percentages, mean and standard deviation. P-value of ≥0.05 was considered statistically significant.

III. RESULTS

There was a total of 31 cases of bilateral tubal ligations (2.1%) out of the 1460 new acceptors of contraception within the study period but only 29 files were seen. Table 1 showed that it were commonest among parturient aged 20–29years (41.4%), grandmultipara (72.4%), rural dwellers (75.9%), farmers (51.7%) and those with no formal education (55.2%). Table 2 identified modified Pomeroy's technique (75.9%) as the commonest method of tubal sterilization. Table 3 showed that majority (65.5%) were aware of other contraceptive options but none have used either. Table 4 noted majorly that 79.3% bilateral tubal ligation was done during laparotomy as a component of management of ruptured uterus. Table 5 showed that the commonest indication for bilateral tubal ligation was ruptured uterus (79.3%) with contraception contributing only 20.7%. No complication specific to tubal ligation was noted.

Table 1: Socio-Demographic and Baseline Characteristics

Variable	Frequency	Percentage
Age (year)		
<20	0	0
20 – 29	12	41.4
30 - 34	7	24.1
≥35	10	34.5
Parity		
1	1	**3.4**
2 – 4	**7**	**24.1**
>= 5	**21**	**72.4**
Educational level		
No formal education	**16**	**55.2**
Primary education	10	34.5
Secondary education	**2**	6.9
Higher education	**1**	3.4
Occupation		
Teacher	**1**	**3.4**
Farmer	**15**	51.7
Trader	**6**	20.7
House wife	**7**	24.1
Residence		
Rural	**22**	**75.9**
Urban	**7**	**24.1**

TABLE 2: METHODS OF BILATERAL TUBAL LIGATION (BTL)

Variable	Frequency	Percentage
POMEROY	**7**	**24.1**
MODIFIED POMEROY	**22**	**75.9**

TABLE 3: PREVIOUS AWARENESS/UPTAKE OF OTHER CONTRACEPTIVE OPTIONS

Variable	Frequency	Percentage
Previous awareness		
Yes	**19**	65.5
No	**10**	34.5
Previous uptake		
Yes	**0**	0
No	**29**	100

TABLE 4: ASSOCIATED PROCEDURES

Variable	Frequency	Percentage
BTL as primary		
Caesarean section	6	20.7
None	23	79.3
BTL not primary		
EX LAP + RU	23	**79.3**
EX LAP + RU + RB	**1**	**3.4**

EX LAP – exploratory laparotomy , RU – ruptured uterus , RB – ruptured bladder

TABLE 5: INDICATIONS ANDCOMPLICATIONSOF BTL

Variable	Frequency	Percentage
Indications		
Contraceptive	6	20.7
Obstetrics (ruptured uterus)	23	79.3
Complications		
None	**29**	100.0

IV. DISCUSSION

The study showed that the total number of acceptors of bilateral tubal ligation within the four year study period was 31 and total number of new acceptors of contraception within the study period was 1460, giving a prevalence rate of 2.1%. This is within the 1.0% - 3.2% prevalence rate seen in studies from South-Eastern Nigeria [9, 11, 12]. This maybe that they are neighbouring states to Ebonyi State sharing same socio-cultural and religious characteristics. However, this was very low to study done at Mexico that showed tubal ligation rate of 42.2% [10]. This may be because of higher rate of contraceptive awareness and acceptance in the developed world.Majority of the clients that had BTL was aged 20–29years (41.4%) and none was less than 20 year old. This falls within the age range of both international and local studies of 14 – 44 years having high rate of uptake of tubal sterilization for contraception[2, 10]. The mean age was 35 year old. The clients were majorly farmers (51.7%) and rural dwellers (75.9%). This may be because majority of Ebonyi state population are predominantly farmers and live in the villages. This may also be the reason why most BTLs were done following rupture uterus as they were referred cases from the rural communities.

The commonest indication for BTL in the study was ruptured uterus (79.3%), with contraceptive option forming a small group of the clients (20.7%). This is similar to studies by Adekanle et al[18] and Omole-Ohonsi et al[2] that noted completion of family size with ruptured uterus and Ruptured uterus alone as commonest indications for bilateral tubal ligation respectively. This differs from studies done by Chigbu et al[11] and Mutihir et al[13] that noted child spacing with limitation of family size and repeat caesarean section respectively as commonest indications for contraceptive options. It was also in line with studies that noted that it was indicated for women who want a permanent method of contraception[2, 3, 6, 9, 10-13, 18-20]or for women in whom a pregnancy could represent a significant medical risk [2,3].

Alanna et al[10] in their study attributed younger age, high literacy, use of other contraceptive options and high parity as to affect women's decision to accept bilateral tubal sterilization. This study showed that majority of the clients aged 20–29years (41.4%) and 72.4% were grandmultipara with only a case representing 3.4% being a primipara that had BTL as a component of management of rupture uterus. However, contrary to the above study most had no formal education (55.5%) had no formal education and 34.5% had only primary education. This however was noted by Egede et al[5] and Omole-Ohonsi et al[2]as what militates against the use of more effective modern contraceptive options like tubal ligation. There was high awareness rate (65.5%) of other contraceptive methods but none was on any at time of the procedure. This lack of awareness was also noted by Egede et al[5] and Omole-Ohonsi et al[2] to militate against the use of modern contraceptive.

Only modified Pomeroy's technique (75.9%) and Pomeroy's technique (24.1%) was identified to have been used among the subjects. This was similar to study by Swend et al[6] which showed that 97.3% of his study subjects had sterilization using the modified Pomeroy's technique but differed from study by Omole-Ohonsi et al[2] which noted Pomeroy's method as commonest. This variation may be ascribed to different preferences by different surgeons as most in our centre prefer modified Pomeroy's method. About 79.3% of BTL was done during laparotomy as a component of management of ruptured uterus while 20.7% had BTL as a primary indication for the caesarean section. This is similar to a study that noted 82.1% of BTL were done during caesarean section/laparotomy[2] and

also Adekanle et al[18]that documented that a greater percentage of the patients had tubal ligation in conjunction with another surgical procedure. Caesarean section/laparotomy was the only root for BTL in the study. This is in line with majority of the studies that noted caesarean section/laparotomy as the commonest root for BTL [2, 3, 6, 9, 10-13, 18-20]. There were no documentations of failure or regret during the case review. Also no complication was linked to BTL failure. This is in line with a study that noted that failure after surgical tubal ligation is rare and the crude failure rate ranges from 0.2%-1.3% [7]. Also Swende et al[6], Mutihir et al[13]and Omole-Ohonsi et al [2]noted that the contraceptive effectiveness of tubal ligation was perfect and no complication specific to tubal ligation was noted.

V. CONCLUSION

Most of the bilateral tubal ligations were medically indicated and uptake was low compared to other forms of contraception. So there is need for increased enlightenment and advocacy for uptake of tubal ligation as a contraceptive option since it failure rate is negligible.

REFERENCES

[1]. Mutihir JT, Nyango DD. Quarter of a Century of Female Sterilization in Jos, Central Nigeria. Afri J of Rep Health. 2011; 15(1): 101-106

[2]. Omole-Ohonsi A ,Attah RA, Umoru UJ. Bilateral Tubal Ligation at Aminu Kano Teaching Hospital: A Five Year Review. Pioneer Med Journal. 2014; 4(7):1-17

[3]. Zurawin RK, Rivlin ME. Tubal sterilization. Medscape. Updated Jan 22, 2015. accessed sep 14,2016

[4]. Braaten KP, Steinauer J, Falk SJ. Overview of female sterilization. Uptodate. last updated sep 12, 2016. accessed sep 14,2016

[5]. Egede JO, Onoh RC, Umeora OUJ, Iyoke CA, Dimejesi IBO, Lawani LO. Contraceptive prevalence and preference in a cohort of south–east Nigerian women Patient Prefer Adherence. Dovepress. 2015; 9: 707–714.

[6]. Swende TZ, Hwande TS. Female sterilization by tubal ligation at caesarean section in Makurdi, Nigeria. Annals of Afri Med. 2010; 9(4): 246-50.

[7]. Geidam AD, Kanem KS. Failed bilateral tubal ligation; a rare but real phenomenon – Case report. Journal of Med Sci. 2013;(7): 27-30

[8]. Adeyemi AS, Adekanle DA, Komolafe JO. Pattern of Contraceptives Choice among the Married Women Attending the Family Planning Clinic of a Tertiary Health Institution. Nig J of Med. 2008; 17(1): 67-70.

[9]. Nwogu-Ikojo EE, Ezegwui HU, Nweze SO. Sterilization by Minilaparotomy in South-Eastern Nigeria. Afri J of Rep Health. 2009; 13(4): 105-112

[10]. Rudzik AEF, Leonard SH, Sievert LL. Determinants of Tubal Ligation in Puebla,Mexico. Women & Health.2011; 51(4): 365-382.

[11]. Chigbu B, Onwere S, Aluka C, Kamanu C, Okoro O, Feyi-Waboso P. Contraceptive choices of women in rural south-eastern Nigeria. Nig J of Clinical Practice. 2010; 13(2): 195-199

[12]. Udigwe GO, Udigwe BI, Ikechebelu JI. Contraceptive practice in a teaching hospital in south-east Nigeria. J of Obstet & Gynaeco. 2002; 22(3): 308-311

[13]. Mutihir JT , Aisien AO , Ujah IA . A review of bilateral tubal ligation at caesarean section in Jos, Nigeria. The Nigerian Postgraduate Medical Journal. 2007; 14(3): 252-255.

[14]. Hudson CN, Setchell ME. Sterilisation operation. In: Howkins J (ed) Shaws's textbook of operative gynaecology 6th edition. India: Elsevier, a division of reed Elsevier, Ltd 2004, pp. 181 – 186.

[15]. A Musari. Much ado about educationally less developed states, Abuja. The Guardian Nigeria, https://guardian.ng/features/much-ado-about-educationally-less-developed-states/, 2016

[16]. Ezegwui HU,Onoh RC, Ikeako LC, Onyebuchi A, Umeorah J, Ezeonu P, Ibekwe P. Investigating Maternal Mortality in a Public Teaching Hospital, Abakaliki, Ebonyi State, Nigeria. Ann Med Health Sci Res 2013;3:77 - 80

[17]. Umeora OU, Esike CO, Egwuatu VE. Maternal mortality in rural Nigeria. Int J Gyneco Obstet 2005;88(3):321-322.

[18]. Adekanle DA, Afolabi AF, Adeyemi AS. Terminal fertility control: Clients' own reason for the choice of the contraceptive method. Open J of Obstet & Gynecol. 2013; 3: 706-709

[19]. Mahadevappa K, Prasanna N, Channabasappa RA. Trends of Various Techniques of Tubectomy: A Five Year Study in a Tertiary Institute. Journal of Clinical and Diagnostic Research. 2016; 10(1): 4-74.

[20]. Roberts AO, Obajimi GO. An audit of interval female sterilisation by minilaparotomy at the University College Hospital, Ibadan, Nigeria. Journal of Obstet & Gynaecol. 2013; 33(4) : 403-405 .