An Audit Of Reproductive Surgery Among Infertile Women In Northern Nigeria

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Abstract

BACKGROUND: Reproductive surgeries are not uncommon surgical procedures in sub-Saharan Africa where infertility cases are highest and its effect on the patient, family and society are enormous. These procedures are either done for diagnostic or therapeutic purposes to conserve, correct and improve reproductive function. Determining the pattern of reproductive surgery in a resource constrained setting like ours would help plan public enlightenment educative program on prevention, early detection and surveillance for common pathologies mostly associated with infertility in our environment. OBJECTIVE: To analyse the pattern of reproductive surgeries performed among patients that presented with infertility. METHODS: A retrospective analysis of reproductive surgeries performed in infertile women between year 2006 and 2009 at Ahmadu Bello University Teaching Hospital, Zaria, Nigeria. RESULTS: Over a 4 years period, a total of 235 reproductive surgeries were performed on women desirous of pregnancy. During same period, 826 gynaecologic surgeries were done giving reproductive surgery rate of 28.5%. Reproductive organs operated on are; uterus 141 (60.0%), fallopian tube 78 (33.2%), vagina / external genitalia 9 (3.8%) and ovary in 7 (3.0%) patients. Of the 235 reproductive surgical procedures, 74 (31.5) were diagnostic procedures while the remaining 161 (68.5%) were therapeutic surgeries to conserve, correct or improve reproduction. All procedures were done on in-patient basis. There were no therapeutic laparoscopic operative surgery neither was there hysteroscopic procedures for diagnostic or therapeutic purposes.CONCLUSION: Diagnostic laparoscopy / dye hydrotubation, intrauterine adhesiolysis and myomectomy are the three most common types of reproductive surgery performed and they account for about eighty five percent of all reproductive surgeries done withinthe study period.

INTRODUCTION

The revised glossary of Assisted Reproductive Technology (ART) defined reproductive surgery (RS) as surgical procedures performed to diagnose, conserve, correct and or improve reproductive function (1). In sub-Saharan Africa where the highest percentage of infertility is recorded, RS is an important aspect in the management of infertility for both diagnostic and therapeutic purposes. However in the developed countries that have witnessed the increasing use of ART, the role of RS is becoming less clear and the use of RS is on a downward trend(2,3). However, the same cannot be said in sub Saharan Africa due to limited accessibility to ART in terms of availability and affordability(4). Reproductive surgeries are mainly complimentary procedures in the management of infertility. In Africa, the most prevalent aetiological factor of female infertility is tubal factor due to pelvic infections from sexually transmitted infection and pregnancy complication related infections(5). Other equally important aetiology are ovulatory disorders mainly as a result of increasing obesity prevalence (6) and uterine factors notably from uterine leiomyomata.

With the persistent high rate of infertility in Africa and the WHO declaration that it's a public health issue, emphasis should now be directed towards preventive infertility programs. It was against this background that we performed an audit of RS performed amongst women desirous of pregnancy. The result will reveal the common RS performed among infertile women. This may ultimately be helpful in the formulation of preventive health policies, early detection and early treatment strategies towards decreasing the prevalence of infertility.

MATERIALS AND METHODS

A retrospective analysis of RS performed among infertile women between January 2006 and December 2009, at Ahmadu Bello University Teaching Hospital, Zaria, Nigeria. The study setting is an academic tertiary hospital in Kaduna

state, Northern Nigeria and it receives referrals from neighbouring states. Procedures were categorised based on diagnostic or therapeutic, reproductive organ the surgery was directed at, endoscopic or non-endoscopic, and in-patient or out-patient procedures. The descriptive results are represented in numbers and percentages.

RESULTS

Over a 4 years period, a total of 235 reproductive surgeries were performed on women desirous of pregnancy. During same period, 826 gynaecologic surgeries were done giving reproductive surgery rate of 28.5%. Reproductive organs operated on are; uterus 141 (60.0%), fallopian tube 78 (33.2%), vagina / external genitalia 9 (3.8%) and ovary in 7 (3.0%) patients. Of the 235 reproductive surgical procedures, 74 (31.5) were diagnostic procedures while the remaining 161 (68.5%) were therapeutic surgeries to conserve, correct or improve reproduction. The 74 diagnostic procedures are laparoscopy / dye hydrotubation in 68 (91.9%) patients and biopsy of adenomyosis in 6 (8.1%). The 161 therapeutic procedures are intrauterine adhesiolysis 68 (42.3%), myomectomy 67 (41.6%), tuboplasty 10 (6.2%), feminizing genitoplasty for female intersex 5 (3.1%), ovarian cystectomy 4 (2.5%), wedge excision / ovarian drilling for polycystic ovary syndrome 5 (3.1%) and 2 (1.2%) patients with excision of transverse vaginal septum. All the procedures were in-patient procedures and there was no operative endoscopic procedure

Figure 1

Table I: indication, route and type of management

	N = 235	%
INDICATION		
Diagnostic	74	31.5
Therapeutic	161	65.5
ROUTE		
Diagnostic laparoscopy	68	28.9
Diagnostic hysteroscopy	0	0
Therapeutic laparoscopy	0	0
Therapeutic hysteroscopy	0	0
Diagnostic non endoscopic	6	2.6
Therapeutic non endoscopic	161	68.5
MANAGEMENT TYPE		
Out – patient	0	0
In - patient	235	100

Figure 2

Table II: types of reproductive surgery and organs involved

TYPES		
DIAGNOSIS	**74**	**%**
• Laparoscopy and dye hydrotubation	68	91.9
• Biospsy of adenomyosis	6	8.1
THERAPEUTIC	**161**	**%**
• Intrauterine adhesiolysis	68	42.3
• Myomectomy	67	41.6
• Tuboplasty	10	6.2
• Feminising genitoplasty	5	3.1
• Ovarian cystectomy	4	2.5
• Wedge excision of ovary	3	1.9
• Ovarian drilling	2	1.2
• Excision of transverse vaginal septum	2	1.2
ORGANS	**235**	**%**
• Uterus	141	60.0
• Fallopian tube	78	33.2
• Vagina and external genitalia	9	3.8
• Ovary	7	3.0

DISCUSSION

In this audit, the RS rate recorded among infertile women is significant when compared to the total number of gynaecological surgeries performed during the same period. However on the contrary, similar study that reported the trend in the use of RS recorded a 79 percent decrease in the number of surgeries performed with a diagnosis of infertility (7). In this study, infertility diagnostic procedures accounted for one-third of the total number of RS and about 90 percent were laparoscopy and dye hydrotubation for evaluation of tubal infertility. Tubo-peritoneal factors is responsible for about 30 to 40 percent of infertility (8, 9). In this series, there is a wide disparity in the percentage of laparoscopic evaluation of tubal infertility and the percentage of corrective tubal surgeries, mainly as a result of lack of facilities for operative laparoscopic tubal surgery and the low success rate attributed with such procedures especially in low resource setting .The patients that had tubal surgery in this study had open abdominal adhesiolysis and cuff salpingostomy. The low rate of corrective tubal surgery could not be linked to high uptake rate of ART as reported amongst white population in developed countries (7).The number of tubal surgery performed in African American women in the United States has not decreased, mainly due to limited access to ART (7). In this series, about 33% of the total procedures were on the fallopian tube, mainly for diagnostic purposes. Conspicuously absent from this audit is non-ablative surgical treatment of ectopic pregnancy. This is

because all the patients presented late with ruptured ectopic pregnancy and extirpative surgical treatment contrary to what obtain in most developed countries was the treatment option.

The uterus was the most common reproductive organ operated on in this audit and this was mainly in the category of therapeutic surgery for IUA and uterine fibroids. Intrauterine adhesion prevalence rate of 1.5% was reported in the general population while a rate of 13.% was found among women with infertility undergoing transvaginal ultrasonography (10, 11).Diagnostic hysteroscopic procedures which is the gold standard in the diagnosis of IUA was absent from this study also was therapeutic hysteroscopic adhesiolysis for treatment of IUA (12). Instead all the patients with IUA were diagnosed with hysterography and treatment effected through blind adhesiolysis. Aetiologic risk factor commonly implicated in patients with IUA is uterine curettage to the gravid uterus, especially in situation of unsafe abortion which is common in most African setting (13). Reproductive future of patients with IUA may be complicated with infertility, miscarriages, preterm deliveries, and morbidly adherent placenta among others (14). Treatment of IUA is known to improve the chances of conception and decreases pregnancy loss.. Live birth rate of 33% was reported following hysteroscopic adhesiolysis in infertile women (15).

In this series, myomectomy was the second most common therapeutic surgery performed and all the myomectomies were by open abdominal route. Though a good number of uterine fibroids in blacks are huge and multiple and may not be operable endoscopically (16). The benefits of laparoscopic myomectomy viz-a-viz future fertility is well documented . Laparoscopic myomectomy is associated with less post operative adhesion; 51.1% against 89.6% for abdominal myomectomy(17). Study have shown that approximately 5 to 10 percent of infertile women have at least one myoma and in 1 to 2.4 percent of infertile women myoma was solely responsible for their infertility (18). The link between myoma and infertility could be due to occlusion of the fallopian tubes, chronic endometrial inflammation, abnormal vascularisation, increased uterine contractility and abnormal local endocrine mileu(12). Myomectomy is the treatment option for purposes of fertility preservation and or enhancement. Authors have reported an increase in reproductive surgeries among African- American women mainly due to conservative treatment of uterine myoma (7).Pregnancy rate following abdominal myomectomy is comparable to laparoscopic myomectomy (12).

Remarkably conspicuous in this series is absence of out-patient operative procedures, operative laparoscopic surgeries and hysteroscopic procedures for both diagnostic and therapeutic purposes. Introduction of these facilities would help improve management, that will ultimately translate into increase fertility rate and better reproductive outcome in patients with involuntary childlessness . Equally important and useful from this audit, is the extrapolation of strategies and policies that may be employed in the prevention of tubal infertility and IUA, surveillance and early treatment of uterine fibroid, which were the three most common pathologies in this study.

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