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OUTCOME OF TUBAL SURGERIES AT THE UNIVERSITY OF NIGERIA TEACHING HOSPITAL, ENUGU, NIGERIA

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ABSTRACT

Objective: To determine the outcome of tubal surgeries at the University of Nigeria Teaching Hospital, Enugu, Nigeria over a 15 year period (1990 – 2004).

Method: A retrospective case series review.

Results: Sixty-four women underwent tubal surgery in the hospital within the 15 year period. Hydrosalpinx was the most frequent tubal pathology occurring in 35 (54.7%) of the women followed by peritubal adhesions in 13 (20.3%) women and cornual block in 11 (17.2%) women. The surgical access was through laparotomy in 59 (92.2%) women and laparoscopy in 5 (7.8%) women. Fifty-seven (89.1%) of the cases had macrotubal surgery while 7 (10.9%) women had microtubal surgery. Twenty-four (37.5%) women had cuff salpingostomy, 16 (25%) had peritubal adhesiolysis, 12 (18.8%) had linear salpingostomy while 10 (15.6%) had tubo-cornual anastomosis. The most frequently used suture for tuboplasty was chromicised catgut No 2/0 which was used in 46 (71.9%) of the women. Twenty-five (39.1%) women were followed up for more than 6 months while the rest were lost to follow-up after 6 months. Three of the 25 women followed-up for more than 6 months became pregnant giving a pregnancy rate of 12.0% for this sub-group and an overall pregnancy rate of 3/64 or 4.7%.

Conclusions: Tubal surgery as seen at the University of Nigeria Teaching Hospital Enugu has a low pregnancy rate similar to ones reported from other Nigerian centres. If attention is paid to the currently recommended microsurgical techniques, the pregnancy rates following tubal surgery are likely to be better than has been documented in this study.

Key words: Tubal surgery, outcome, Enugu, Nigeria

INTRODUCTION

Infertility is a major global problem and is regarded as a social stigma in Nigeria. About two out of every five patients attending the gynaecology clinic in Nigeria complain of infertility[1, 2]. Tubo-peritoneal factor has been shown to be the commonest cause of infertility in Nigeria contributing to as much as 63.6% in some series[1,2]. In developed countries, tubal factor is the cause of infertility in approximately 25% of cases[3]. In Africa the incidence of tubal damage is increasing, partially due to increasing prevalence of sexually transmitted diseases[4]. Damage to the fimbriae may reduce or eliminate their ability to pick up the egg and direct it into the tube. Damage to the cells lining the tube may prevent or greatly reduce the chance of fertilization. Blockage in the tube can prevent the fertilized egg from moving to the uterus, increasing the incidence of ectopic pregnancy.

Thus, the fallopian tubes play an important role in the process of fertilization and pregnancy.

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Tubal surgery and assisted reproductive technologies such as in-vitro fertilization (IVF) are the usual treatment modalities for tubal infertility. Surgical success depends primarily on the extent of the tubal damage. Success may be limited because scar tissue frequently returns despite the surgeon's best efforts. If the damage is slight and the surgeon only needs to remove mild adhesions around the tubes, pregnancy rates can be as high as 50 to 60 percent especially if performed laparoscopically[5]. If the fimbriae have been significantly damaged, pregnancy rates are much lower. Opening a blocked tube which is closed at the distal end (hydro-salpinx) produces a crude pregnancy rate between 20 to 35 percent for moderate to severe disease[6]. Opening a tube which is blocked at the proximal end generally produces lower rates[6]. The poor success achieved with surgical treatment of moderate to severe tubal disease may make IVF the primary choice of therapy in many patients[3,7,8]. Most tubal surgeries require skills in microsurgical techniques including the use of magnification and fine suture materials, atraumatic tissue handling and haemostasis, reperitonealization of raw surfaces and adjuvant treatment to minimize

adhesion formation[6]. Access to the fallopian tubes during tubal surgery may be through laparoscopy or laparotomy[8]. Available data show that laparoscopic tubal surgery and tubal microsurgery performed via laparotomy give comparable pregnancy rates[5].

Overall, IVF-ET/ICSI and tubal microsurgery have comparable pregnancy rates (26-30%[9] versus 27.7 - 40%[5,10]). The two ought to be considered complementary rather than competitive procedures and intelligent patient selection is the key in making the therapeutic choice[5]. However, IVF-ET/ICSI may not be affordable or available to many couples with tubal infertility. Thus Nigerian gynaecologists are still under pressure to perform tubal surgeries even in cases where IVF/ICSI would have been preferred. This has been the practice at the University of Nigeria Teaching Hospital (UNTH), Enugu, which is a tertiary care centre without Assisted Reproductive Technology (ART) facilities. Such a practice requires an audit so as to highlight areas that require improvement. Hence the objective of this study was to evaluate the outcome of tubal surgeries at the UNTH, Enugu, over a 15-year period.

Materials and Methods

The study was a retrospective review of the medical records of all the patients who had tubal surgeries at the University of Nigeria Teaching Hospital from 1990 to 2004. Using a Case Record Form, the following variables were abstracted from the case notes: age of patient, educational level, marital status, occupation, history of induced abortion and if there was (were) any associated complication(s). Other variables were: duration of infertility, history of sexually transmitted disease, types of investigations done (e.g. HSG, laparoscopy, tubal insufflation or ultrasonography), the type of tubal pathology (e.g. hydro-salpinx or adhesions due to previous abdominal or pelvic surgery etc), the surgical techniques (e.g. laparotomy or operative laparoscopy), cadre of the surgeon and the pregnancy rate after tubal surgery. The data were analyzed using simple percentages and mean± standard deviation as appropriate with the statistical software SPSS for MS Windows Version 10.0.

RESULTS

A total of 64 women underwent tubal surgery at the University of Nigeria Teaching Hospital within the 15 year period (1990-2004). Their mean age was 32.4 ± 5.1 (range: 23 – 43) years. The mean parity was 1.7 ± 0.9 (range: 0 – 4). Nine (14.1%) of the women had primary education, 20 (31.3%) had secondary education and 13 (20.3%) tertiary education. The educational status of 22 (34.4%) women was not recorded. Fifty-seven (89.1%) of the women were married, 3 (4.7%) of them were single, 1 (1.6%) was divorced, 1 (1.6%) was separated from husband while 2 (3.1%) were cohabiting. Thirty-two (50.0%) of the women were employed, 28 (43.8%) women were unemployed, 2 (3.1%) were students while the occupations of 2 (3.1%) women were unknown.

With respect to the type of infertility, 51 (79.7%) of the women presented with secondary infertility while 13 (20.3%) women had primary infertility. Of the 51 women with secondary infertility, 28 (54.9%) had had one or more previous induced abortion(s) while 23 (45.1%) women had not. The husbands/sexual consorts of 58 (90.7%) of the women had normal seminal fluid parameters while the remaining 6 husbands/sexual consorts had abnormal seminal fluid characteristics. There was documented evidence of ovulation in 61 (95.3%) of the women while 3 (4.7%) women had anovulation. Thirty-eight (59.4%) women had normal uteri. Five women had intrauterine adhesions while 21 (32.8%) had associated uterine fibroids necessitating myomectomy in addition to tubal surgery.

The methods used in diagnosing tubal disease in the patients are shown in Table 1. Hysterosalpingography was the most commonly employed mode of diagnosis (76.6%), followed by a combination of hysterosalpingography and laparoscopy and dye test (14.1%).

The types of tubal pathology seen in the women are shown in Table 2. Hydrosalpinx was the most frequent tubal pathology occurring in 35 (54.7%) of the women followed by peritubal adhesions in 13 (20.3%) women and cornual block in 11 (17.2%) women.

The surgical access was by means of laparotomy in 59 (92.2%) women and by laparoscopy in 5 (7.8) percent of the women. Ten (16.9%) of the 59 women who underwent laparotomy had Pfannenstiel incision while 49 (83.1%) had a midline incision. Fifty-seven (89.1%) of the 64 cases had macrotubal surgery while 7 (10.9%) had microtubal surgery.

The types of tubal surgery the patients underwent are shown in Table 3. Twenty-four (37.5%) women had cuff salpingostomy, 16 (25%) had peritubal adhesiolysis, 12 (18.8%) had linear salpingostomy while 10 (15.6%) had tubo-cornual anastomosis. The types of sutures used for tubal repair are shown in Table 4. The most frequently used suture was chromicised catgut No 2/0, which was used in 46 (71.9%) of the women. Fifty-six (87.5%) of the tubal surgeries were carried out by consultants while 8 (12.5%) were done by senior registrars.

Twenty-five (39.1%) women were followed up for more than 6 months while the rest were lost to follow-up after 6 months. While the overall pregnancy rate was 3/64 or 4.7% for all 64 women, it was 3/25 or 12% for the 25 women followed-up for more than 6 months. The three patients who became pregnant had cuff salpingostomy (1 woman), peritubal adhesiolysis (1) and tubo-cornual anastomosis (1). No major complications were recorded amongst the women studied.

Table 1 **Modes of Diagnosing Tubal Disease in 64 Women in Enugu, Nigeria**

Mode of diagnosis	No	Percent
Hysterosalpingography	49	76.6
Laparoscopy and dye test	6	9.4
HSG + Laparoscopy and dye test	9	14.1
Sonohysterosalpingography	0	0.0
Total	**64**	**100.0**

Table 2 **Tubal Pathology seen in 64 women Undergoing Tubal Surgery in Enugu, Nigeria**

Tubal pathology	No	Percent
Hydrosalpinx	35	54.7
Peritubal adhesions	13	20.3
Cornual block	11	17.2
Hydrosalpinx and peritubal adhesion	2	3.1
Tubal rupture	2	3.1
Endometriosis	1	1.6
Total	**64**	**100.0**

Table 3 **Types of Tubal Surgery in 64 women in Enugu, Nigeria**

Type of surgery	No	Percent
Linear salpingostomy	12	18.8
Cuff salpingostomy	24	37.5
Peritubal adhesiolysis	16	25.0
Tubo-cornual anastomosis	10	15.6
Tubo-cornual anastomosis and linear salpingostomy	1	1.6
Salpingostomy and peritubal adhesiolysis	1	1.6
Total	**64**	**100.0**

Table 4 **Types of sutures used for Tubal surgery in 64 women in Enugu, Nigeria**

Type of suture	No	Percent
Chromic catgut No 2/0	46	71.9
Nylon 3/0	4	6.3
Prolene 5/0, 4/0, 6/0	5	7.8
Not recorded	9	14.1
Total	**64**	**100.0**

DISCUSSION

The pattern of tubal surgery documented in the current study reflects the type of tubal disease seen with the majority being salpingostomy for hydrosalpinges. This is similar to reports from other Nigerian centres[1,2]. In the current era of Assisted Reproductive Technology, the necessity for tubal surgery in women with tubal infertility has been questioned[3,4,11]. This is because women with tubal pathologies can achieve pregnancies through IVF or ICSI and with a higher pregnancy rate[5,7,8] per treatment cycle than the 12% obtained in this study. However, the higher pregnancy rate obtained with IVF/ICSI must be balanced against the expensive nature of these ART procedures, which the majority of the patients with tubal disease may not be able to afford. Hence despite the lower success rate, the easier affordability of tubal surgery may make it a first line therapy where the patient cannot afford ART. Again, it is established that women with hydrosalpinges who undergo in-vitro fertilization and embryo transfer have lower pregnancy rates than comparable women without tubal disease[12]. For this reason, it is recommended that women with hydrosalpinges should have these removed or opened before undergoing IVF or ICSI[11,12]. This again emphasizes the current place of tubal surgery in the management of tubal infertility.

It is possible that the pregnancy rate obtained in the present study might have been higher if certain currently recommended principles of tubal surgery had been adhered to by the surgeons. First is the issue of macrosurgery versus microsurgery. The latter is the currently recommended mode of tubal surgery. Yet it was disheartening that the majority of the patients had tubal macrosurgery which might have jeopardized their chances of success. The second issue concerns the type of suture material used. Fine non-reactive suture materials such as prolene and nylon are the ones currently recommended for tubal surgery since they produce less postoperative tissue inflammation. Yet only in a minority of the patients in this study were such sutures used. Such a wrong choice of suture materials might also have jeopardized their chances of success.

Although previous studies have documented higher pregnancy rates following peritubal adhesiolysis than other types of tubal surgery[2,3,12], this was not observed in the current study probably because the majority of the patients were lost to follow up.

The fact that the majority of the cases were due to secondary infertility following induced abortions emphasizes the need for safe abortion practices.

We conclude that tubal surgery as seen at the University of Nigeria Teaching Hospital Enugu has

a low pregnancy rate similar to ones reported from other Nigerian centres. Tubal surgery may be considered as a first line therapy in situations where the woman cannot afford IVF/ICSI or where hydrosalpinges have to be dealt before proceeding to IVF/ICSI. If attention is paid to the currently recommended microsurgical techniques, the pregnancy rates following tubal surgery are likely to be better than has been documented in this and other studies.

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