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A FIVE YEAR AUDIT OF GYNAECOLOGICAL LAPAROSCOPY AT USMANU DANFODIYO UNIVERSITY TEACHING HOSPITAL, SOKOTO, NIGERIA.

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ABSTRACT

Gynaecological laparoscopy is a trans-peritoneal endoscopic technique that provides excellent visualisation of the pelvic structures and often permits the diagnosis of gynaecologic disorders and pelvic surgery without laparotomy. It is one of the most common surgical procedures performed by gynaecologists and the most important investigative tool for the evaluation of tubal disease in developed countries. In developing countries particularly sub-Saharan Africa, gynaecological laparoscopy, is still evolving and is mainly diagnostic. This study aimed to determine the incidence, indications and complications of gynaecological laparoscopy and to outline the common findings at laparoscopy in Usmanu Danfodiyo University Teaching Hospital, Sokoto. Materials and Methods: It was a 5-year retrospective study. Records of patients, who had gynaecological laparoscopy from 1st January 2008 to 31st December, 2012 were retrieved and relevant data extracted and analyzed using the SPSS for windows version 20.0. Results: There were 1047 gynaecological surgeries within the period under review with 92 laparoscopies giving an incidence of 8.8% or 87.9 per 1000. All the procedures were diagnostic and infertility, (58.3%) was the common indication followed by amenorrhea (13.1%). Common findings at laparoscopy were pelvic adhesions 38(45.2%), bilateral tubal block 35 (41.7%) and bilateral patent tubes 11(13.1%). Majority of the patients, 54(64.2%) did not have any complication. Vomiting, 11(13.1%) was the most common complication followed by abdominal pain 8(9.9%). Only 32 (38.1%) were discharged one day post laparoscopy. Conclusion: This incidence is low and shows limited skills, logistics and manpower. Efforts should be intensified towards training and provision of up to date facilities for endoscopic surgery especially in North-western Nigeria.

KEYWORDS: Gynaecological, Diagnostic, Laparoscopy, UDUTH, Sokoto.

INTRODUCTION

Endoscopy is a minimally invasive procedure and entails the examination of the interior of a canal or hollow viscus with a specialised instrument called endoscope.[1] Gynaecological laparoscopy is a trans-peritoneal endoscopic technique that provides excellent visualisation of the pelvic structures and often permits the diagnosis of gynaecologic disorders and pelvic surgery without laparotomy.[2] It is one of the most common surgical procedures performed by gynaecologists and the most important investigative tool for the evaluation of tubal disease in developed countries. [2, 3] Approximately 80% of all gynaecological surgical procedures can be done laparoscopically.[4]

The frequency of laparoscopy varies widely across the globe. In the USA, approximately, 350,000 tubal ligations and 200,000 laparoscopically-assisted vaginal hysterectomies are carried out annually [1, 2] while in the United Kingdom (UK), about 250,000 gynaecologic laparoscopic surgeries are done annually.[5] On the other hand, in developing countries particularly sub-Saharan Africa, gynaecological laparoscopy, introduced in the 1970's through collaboration with donor agencies, is still evolving and is mainly diagnostic.[6]

The advantages of laparoscopy over laparotomy are a small incision, excellent visualisation of operative site, reduced postoperative pain, shorter hospital stay, early return to full activities, cosmetic advantages and less wound complication.[1, 2] Some of the disadvantages of laparoscopy are difficulty in stopping bleeding, longer operative time, danger of visceral and vascular injury, expensive and specialised equipments, technically difficult and special training requirement.[1]

The indications for laparoscopy are either diagnostic or therapeutic.[2] Some of the diagnostic indications are pelvic pain, infertility, pelvic masses, genital track anomalies, pelvic injuries, endometriosis and pelvic inflammatory disease while the therapeutic indications include tubal sterilisation, adhesiolysis, missing intrauterine device, unruptured ectopic pregnancy, myomectomy, ova collection in IVF, ovarian drilling for polycystic ovaries, oophorectomy, hysterectomy and reconstructive surgery for pelvic organ prolapse.[1, 2, 7]

The contraindications for laparoscopy maybe absolute or relative. The absolute contraindications are intestinal obstruction, generalised peritonitis and intra-peritoneal haemorrhage while the relative contraindications include severe cardiac or pulmonary disease, previous peri-umbilical surgery, shock and cancer involving the anterior abdominal wall.[2, 8] Other relative contraindications are morbid obesity, advanced intrauterine pregnancy, presence of a large mass, inflammatory bowel disease and a known severe peritoneal adhesions.[1]

Despite the widespread utilisation of laparoscopy, there are limitations to its use in developing countries and they include lack of the equipment and skilled personnel, increased cost, increased duration of surgery and unstable power supply.[6]

Recent advances in laparoscopy include mini-laparoscopy and gasless laparoscopy.[3] Mini-laparoscopy although not widely accepted may be helpful in reducing the long waiting list for diagnostic laparoscopy especially in developing countries. Another variant is gasless laparoscopy otherwise called lift-laparoscopy. It was developed in order to avoid the inherent cardio-respiratory problems associated with CO_2 pneumoperitoneum.[3] It may also eliminate shoulder tip pain caused by diaphragmatic irritation by CO_2, may be safer for pregnant patients and may also reduce trocar site metastasis in patients with intra-peritoneal carcinomas.[9] This, however, is not widely used but it could find relevance in resource-poor settings. Furthermore, three key innovations have generated a lot of interest in laparoscopy. These are robotic surgery (Da Vinci surgery), natural orifice trans-luminal surgery (NOTES), and single incision laparoscopic surgery (SILS).[9] All three have their own corresponding advantages and disadvantages compared to traditional laparoscopy, however, robotic surgery appears to be gaining more relevance in clinical practice.

The complications of laparoscopy are significantly lower than conventional surgery though some may not be recognised during the procedure and are mainly entry-related.[10] The reported rates of these complications are 1.0-12.5/1,000, 3.6/1,000 and 5.7/1,000 in the UK, Finland and Netherlands respectively.[5] Major laparoscopic procedures are associated with a higher rate of complications (0.6%-18%) compared with minor procedures (0.06%-7.0%).[11] Other complications of laparoscopy are shoulder tip pain, chest and abdominal pain, subcutaneous emphysema, urinary tract injury, failed laparoscopy and mortality especially with general anaesthesia.[12] Shoulder tip pain is the most common reported complication and can be reduced by pulmonary recruitment manoeuvre or intra-peritoneal normal saline infusion.[13]

Laparoscopy was started in UDUTH, Sokoto, in 1992, and room air was used to achieve pneumo-peritoneum at that time. However, in 2008 new equipment with video monitors were procured and are now used. Apart from work published in 1999, justifying the use of room air to achieve pneumo-peritoneum in our centre, [12] no other audit has been carried out. Thus, this study aimed to determine the incidence, indications and complications of gynaecological laparoscopy and to outline the common findings at laparoscopy in UDUTH, Sokoto in recent times.

METHODOLOGY

This is a 5-year retrospective descriptive study of all gynaecological laparoscopies performed at Usmanu Danfodiyo University Teaching Hospital, Sokoto, from 1st January 2008 to 31st December 2012. Information was obtained from patients' case notes, gynaecological ward registers, gynaecological clinic records and theatre records. Data relating to age, parity, indications, type of gas used, procedure, findings, complications, and duration of hospital stay were extracted and analyzed using the SPSS for Windows version 20.0. Ethical approval for the study was from the Hospital Ethics Committee.

RESULTS

There were 1047 gynaecological surgeries within the period under review with 92 laparoscopies. This gave an incidence of 8.8% or 87.9 per 1000 gynaecological surgeries. However only 84 case files were available for analysis giving a retrieval rate of 91.3%.

The age of the patients ranged between 15 to 56 years with a mean of 28.7 ± 8.1 years and majority (46.6%) of the laparoscopies were carried out among the 20-29 years age group. Most, 64(76.3%) were unemployed and 43(51.2%) had only primary level of education. The Hausa/Fulani, 65(77%) were the dominant tribe and Muslims, 71(84.5%) were the majority while 73(86.9%) were married. Also most, 46(54.8%) of the patients were nulliparous. (Table 1)

TABLE 1: SOCIODEMOGRAPHIC CHARACTERISTICS OF THE PATIENTS

Characteristic	Frequency	%
Age		
10-19	7	8.4
20-29	39	46.6
30-39	30	35.9
40-49	6	7.2
50-59	2	2.4
Occupation		
Unemployed	64	76.2
Student	9	10.7
Civil servant	8	9.5
Business woman	3	3.6
Level of formal Education		
No formal education	5	6.0
Primary education	43	51.2
Secondary education	21	25.0
Tertiary education	15	17.9
Religion		
Islam	71	84.5
Christianity	13	15.5
Marital status		
Married	73	86.9
Single	7	8.3
Divorcee	2	2.4
Separated	1	1.2
Widow	1	1.2
Parity		
Nulliparous	46	54.8
Multiparous	34	40.5
Grandmultiparous	4	4.7

Infertility (58.3%) was the common indication for gynaecological laparoscopy followed by amenorrhea in 13.1%. Other indications included chronic pelvic pain, suspected unruptured ectopic pregnancy, ambiguous genitalia, adnexal mass, endometriosis and acute PID.

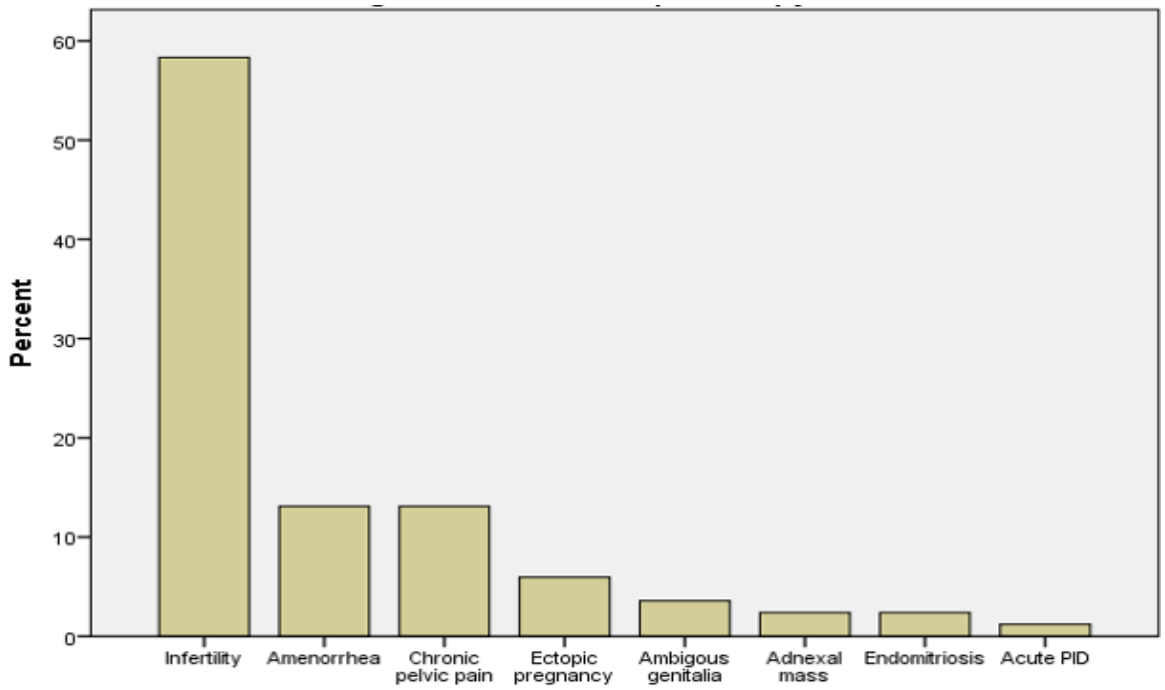

FIGURE 1: INDICATIONS FOR LAPAROSCOPY

Carbon dioxide gas (76.3%) was used more than room air (27.4%)

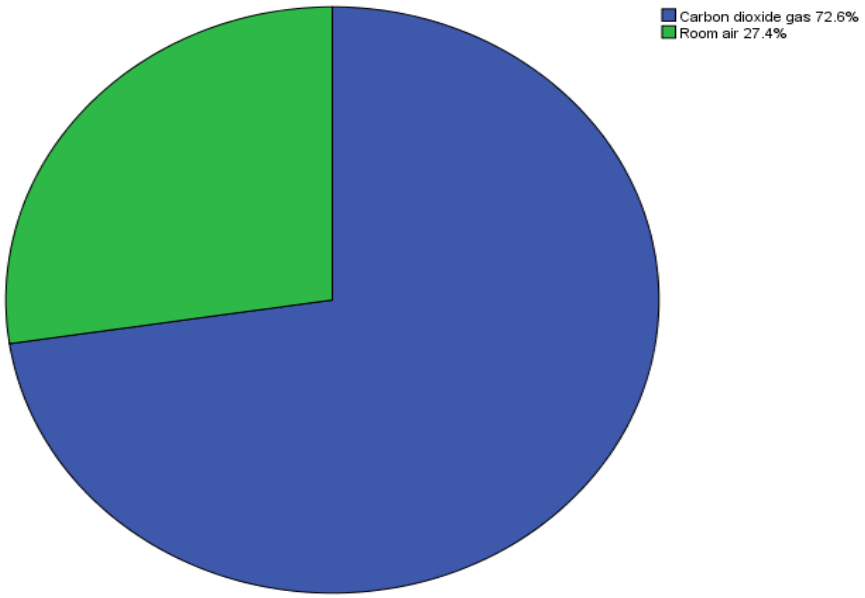

FIGURE 2: TYPE OF GAS USED FOR INSUFFLATION

All the procedures were carried out for diagnostic purposes. Laparoscopy and dye test was the procedure performed in most cases, 60(71.4%) while laparoscopy only and laparoscopy + biopsy were performed in 26.2% and 2.4% of patients respectively. Common findings at laparoscopy were pelvic adhesions 38(45.2%), bilateral tubal block 35 (41.7%) and bilateral patent tubes 11(13.1%). Other findings are as shown in Table 2.

TABLE 2: TYPE OF AND FINDINGS AT LAPAROSCOPY

Variable	Frequency	%
Type of laparoscopy		
Laparoscopy and dye test	60	71.4
Laparoscopy only	22	26.2
Laparoscopy and biopsy	2	2.4
Findings at laparoscopy		
Bilateral tubal block	35	41.7
Bilateral patent tubes	11	13.1
Unilateral tubal block	8	9.5
Pelvic adhesions	38	45.2
Polycystic ovaries	10	11.9
Bilateral hydrosalpinx	9	10.7
Unilateral hydrosalpinx	6	7.2
Perihepatic adhesions	10	11.9
Beaded tubes	9	10.7
Endometriotic deposits	8	9.5
Streak gonads	7	8.3
Ectopic pregnancy	5	6.0
Uterine Fibroid	5	6.0
Congenital absence of uterus	3	3.6
Fluid in the pouch of Douglas	1	1.2

Majority of the patients, 54(64.2%) did not have any complication. Vomiting, 11(13.1%) was the most common complication followed by abdominal pain 8(9.9%). Only 32 (38.1%) patients', were discharged one day post laparoscopy. (Table 3)

TABLE 3: COMPLICATIONS OF LAPAROSCOPY

Variable	Frequency	%
Complication		
No complication	54	64.2
Vomiting	11	13.1
Abdominal pain	8	9.9
Fever	7	8.3
Pelvic pain	3	3.6
Shoulder tip pain	3	3.6
Difficult insufflation	3	3.6
Abdominal distension	1	1.2
Emphysema	1	1.0
Duration of hospital stay (Days)		
1	32	38.1
2	28	33.3
3	13	15.5
4	3	3.6
5	2	2.4
6	2	2.4
7	4	4.8
Total	84	100.0

DISCUSSION

The prevalence of gynaecological laparoscopy from this study is 8.8% or 87.9/1000 gynaecological surgeries and it was wholly diagnostic.[13] This is lower than the 12% in Kano [14] and 28.7/1000 in Abuja [13] but higher than the 6.9% reported in Yaounde, Cameroon.[15] This low rate may be due to few trained specialists to perform the procedures and the availability of only one laparoscope in our centre.

The mean age of the patients was 28.7 ± 8.1 years and most of the patients were within the age group of 20-29 years. The is similar to findings in Kano [13] while lower than 31.6 years in Yaounde.[10] This may be due to the fact that the most common indication for laparoscopy was infertility [13, 16] which is commoner in this age group.

Nulliparous women constituted 54.8% of the patients and this finding is similar to what was reported from Cameroon.[10] This may be because most of the patients had laparoscopy for either infertility or amenorrhea while most of the multiparous women had it for either infertility or chronic pelvic pain.

The most common indication for gynaecological laparoscopy was infertility evaluation in 58.3% followed by amenorrhoea (3.1%). A previous study from this centre in 1999 also showed infertility to be the most common indication for laparoscopy followed by amenorrhea.[12] In similar studies from Abuja, Kano, Nnewi and Cameroon, infertility was the most common indication followed by amenorrhea and chronic pelvic pain.[13-16]

All the procedures in this study were carried out under general anaesthesia as was similarly reported from Abuja.[13] Carbon dioxide gas was used to create pneumoperitoneum in 72.6% of the procedures while room air was used in 27.4%. Room air was used only when carbon dioxide gas was not available. This has been shown to be safe with minimal complications especially in low resource settings like ours.[12, 17, 18] Other gases that can be used are Nitrous oxide, Helium, Xenon and Argon.[17] Nitrous oxide gas has an added advantage of providing analgesia especially in day case laparoscopy.[17] These were not used because they were not available in our environment.

In this study, laparoscopy and dye test (71.4%) was the most common procedure performed. This is not surprising since infertility was the most common indication for diagnostic laparoscopy in this centre. Only 6.0% had conversion to laparotomy and this is similar to the report by Golash (7%) [19] but in contrast to 0.7% and 1.96% in Kano and Kenya respectively.[13, 20] The common pathologic findings at laparoscopy were pelvic adhesions (45.2%) and bilateral tubal blockage (41.7%). This is similar to findings from Kano [14] but lower than 69.6% reported from Cameroon.[15]

Majority (64.2%) did not have any complication while among those that had complications, vomiting was the most common complication followed by abdominal pain. This is contrary to bladder and bowel injury found in a study in Kenya.[20] Other complications could be anaesthetic complications, ureteric and vessels injuries and postoperative wound infections.[21] There could be complications from the gas used for insufflations such as embolism and emphysema and mortality.[22] No mortality was recorded in this study compared to the previous study from this centre.[12]

Less than 50% of the patients were discharged 24 hours after surgery. This is lower than the study from Kenya where 64.5% spent 1 night after the procedure. This is

one advantage of laparoscopy over laparotomy. The mean hospital stay was 2.3 days ± 1.8 unlike 3.4 ± 1.8 days from Cameroon.

CONCLUSION

Laparoscopy in UDUTH, Sokoto accounted for 8.8 percent of gynaecologic surgeries and was mainly diagnostic in nature. The most common indication was infertility evaluation and amenorrhea. This incidence is low and this shows limited skills, logistics and manpower such that we are unable to utilize the immense benefits of laparoscopy in contemporary gynaecological practice in Nigeria. Efforts should be intensified in training and provision of up to date facilities for endoscopic surgery especially in North-western Nigeria.

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