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A Five-Year Review of Laparoscopic Gynaecological Surgeries in a Private-Owned Teaching Hospital, in Nigeria

Un Examen Quinquennal des Chirurgies Gynécologiques Laparoscopiques dans un Hôpital Universitaire Privé, au Nigéria

¹*J. O. Imaralu, ¹I. F. Ani, ²C. E. Onuoha, ¹E. O. Grillo, ³F. A. Oguntade, ¹C. C. Nwankpa

ABSTRACT

BACKGROUND: Laparoscopic surgery is associated with shorter hospital stay and less post-operative morbidity. Cost, expertise and availability of equipment, however remain limitations to the range of surgeries available in low resource settings.

OBJECTIVES: To determine the indications, the patient characteristics and the surgical outcomes of laparoscopic gynaecological surgeries in a Nigerian private tertiary level hospital.

METHODS: This retrospective observational study included all gynaecologic laparoscopy procedures done between August 2016 and July 2021, at the Babcock University Teaching Hospital (BUTH). Data were extracted from the hospital records with the use of a proforma designed for this purpose and were analyzed using the SPSS version 21.0.

RESULTS: Laparoscopy accounted for 13.5% of gynaecological surgeries. They were majorly in nulliparous women (67.6%) of reproductive age (mean 33.9±10.2 years and median of 32 years). The commonest indication was secondary infertility (27.3%) and operative procedures were more commonly done (59.0%). The mean duration of surgery was 94.8±52.4 min and conversion to laparotomy rate was 8.6%. Operative procedures lasted longer (113.9±58.1 min) and accounted for most conversions, 10/12 (83.3%). Intraoperative complication rate was 2.2% and they were mostly (66.7%) entry related. The mean duration of hospitalization was 2.2± 1.6 days.

CONCLUSION: The prevalence and indications for laparoscopic surgeries were similar to findings from other parts of Nigeria. Operative procedures were however more commonly done. In spite of the sustained increase in procedure rates, a steady decline in the duration of surgery, conversion and complication rates occurred. Private hospitals may have potential for uninterrupted progression of laparoscopic gynaecologic surgeries in Nigeria. **WAJM 2022; 39(2): 111–118.**

Keywords: Audit, endoscopy, laparoscopy, private hospital.

RÉSUMÉ

CONTEXTE: La chirurgie laparoscopique est associée à un séjour hospitalier et moins de morbidité postopératoire. Coût, expertise et la disponibilité de l'équipement restent cependant des limites à la gamme de chirurgies disponibles dans des contextes à faibles ressources.

OBJECTIFS: Pour déterminer les indications, le patient caractéristiques et résultats chirurgicaux de la chirurgies gynécologiques par laparoscopie dans un hôpital privé nigérian de niveau tertiaire.

MÉTHODES: Cette étude observationnelle rétrospective comprenait tous les procédures de laparoscopie gynécologique effectuées entre août 2016 et juillet 2021, au Babcock University Teaching Hospital (BUTH). Les données ont été extraites des dossiers de l'hôpital à l'aide d'un proforma conçu à cet effet et a été analysé à l'aide de version 21.0 du SPSS.

RÉSULTATS: La laparoscopie représentait 13.5 % des gynécologues Chirurgies. Ils étaient principalement chez les femmes nullipares (67.6 %) âge de reproduction (moyenne 33.9±10.2 ans et médiane de 32 ans). L'indication la plus courante était l'infertilité secondaire (27.3 %) et les procédures opératoires étaient plus couramment effectuées (59.0%). La durée moyenne de la chirurgie était de 94.8±52.4 min et la conversion en laparotomie était de 8.6 %. Les procédures opératoires ont duré plus longtemps (113.9±58.1 min) et représentait la plupart des conversions, 10/12 (83.3 %). Le taux de complications intra opérative était de 2.2 % et ils étaient principalement (66.7 %) apparenté. La durée moyenne de l'hospitalisation était de 2.2 ± 1.6 jour.

CONCLUSION: La prévalence et les indications pour les chirurgies par laparoscopie étaient similaires aux résultats d'autres régions du Nigéria. Les procédures opératoires étaient cependant plus courantes. Malgré tout de l'augmentation soutenue des taux d'intervention, une baisse constante de la durée de la chirurgie, la conversion et les taux de complications sont survenus. Les hôpitaux privés peuvent avoir un potentiel de progression interrompue des chirurgies gynécologiques laparoscopiques au Nigeria. **WAJM 2022; 39(2): 111–118.**

Mots-clés: Audit, endoscopie, laparoscopie, hôpital privé.

¹Fertility and Endoscopic Surgery Unit, Department of Obstetrics and Gynaecology, Babcock University Teaching Hospital, Babcock University, Ilesan Remo, Ogun State, Nigeria. ²Department of Surgery, Babcock University Teaching Hospital, Ilesan-Remo, Ogun state, Nigeria. ³Department of Anaesthesia, Babcock University Teaching Hospital, Ilesan-Remo, Ogun state, Nigeria.

*Correspondence: Dr John Imaralu, Fertility and Endoscopy Unit, Department of Obstetrics and Gynaecology, Babcock University Teaching Hospital, Ilesan-Remo, Ogun State, Nigeria. Phone: +2348067857419 E-mail: imaraluj@babcock.edu.ng

Abbreviations: BMI, Body Mass Index; BUHREC, Babcock University Health and Research Ethics Committee; BUTH, Babcock University Teaching Hospital; CO₂, Carbon dioxide; DRC, Democratic Republic of Congo; IVF, In-Vitro-Fertilization; LMIC, Lower Middle-Income Country; L/min, Litre per minute; MAS, Minimal Access Surgery; Min, Minutes; Mm, millimetre; SD, Standard Deviation; SPSS, Statistical Package for the Social Sciences.

INTRODUCTION

Laparoscopic surgery has gained acceptability and popularity in the developed world because of its associated benefits which include, shorter hospital stay, less post-operative pain and reduced infectious morbidity.¹ In spite of these advantages, cost, expertise and availability of equipment have remained deterrents to its widespread global distribution, especially in low resource settings.²⁻⁴ Minimal access surgery (MAS) has been integrated into virtually all surgical fields in developed countries.^{1,3-6} Nigeria is one of the low resource countries of West Africa, with several competing health needs, weak health system, frail economy and unstable political structure; which may contribute to the paucity of minimal access surgical service.^{1,7,8}

In spite of these challenges, the demand for laparoscopic surgery for infertility evaluation and treatment has been on the increase.⁹⁻¹¹ The rising cost of medical tourism abroad may further push this demand higher in our setting.

Low and middle income countries like Nigeria with relatively youthful populations have more potential benefits from laparoscopic surgery as less morbidity and less duration of hospitalization may improve human capital productivity and enhance rapid industrialization of their growing economies.⁸

Earlier audits of laparoscopy experience in Nigeria have been majorly from government-owned hospitals and similar challenges of equipment unavailability and maintenance, staffing, training and bureaucratic bottlenecks causing delays were reported.^{1,4,12-15}

To forestall the bureaucratic and technical challenges of minimal access surgery service delivery, a joint-public private partnership had been suggested since a balance between profit-driven and health-impact delivery may affect availability of technical support, reduce the effect of incessant industrial actions in public hospitals, enhance ease of access and improve payment for this service.^{1,3}

Gynaecologic surgical units have either pioneered or been among the early starters in some centres in Nigeria and

West Africa.^{1,14-16} Minimal access surgery commenced in Babcock University Teaching Hospital (BUTH) in July 2016, making it the first private owned university teaching hospital to start minimal access surgery in south western Nigeria and the gynaecologic endoscopic surgical unit was the first established minimal access surgery unit in the hospital.

The outcomes of laparoscopic gynaecologic surgery have been shown to depend largely on the take-off challenges, the availability of appropriate technology, patient selection, adequate skilled manpower and presence of support services.^{2,3,5}

This practice audit therefore aimed to determine the indications, the patient characteristics and the surgical outcomes of laparoscopic gynaecological surgeries performed in a private owned teaching hospital in Nigeria, within the first five years of inception.

SUBJECTS, MATERIALS AND METHODS

Study Design

Retrospective observational study.

Study Location

The department of Obstetrics and Gynaecology of the Babcock University Teaching Hospital, a private-owned teaching hospital in Ilisan-Remo, south western Nigeria. The hospital receives clients and referrals from neighbouring towns in Ogun state and frequently from the surrounding states of Lagos, Oyo and Ondo.

Study Duration

3 months of data extraction and analysis.

Sample Size and Sampling Technique

Total sampling technique was applied and all cases of gynaecologic laparoscopic surgery done between August 2016 and July 2021 were included in the analysis.

Subjects and Selection Method

This review was conducted in the department of Obstetrics and Gynaecology of the Babcock University Teaching Hospital (BUTH), Ilisan-Remo,

Nigeria. Data were extracted from hospital records, which included the departmental operations booking diary, the gynaecologic appointments log, the gynaecology ward admissions and discharge log book, the operating theatre registers and the patient case files.

All gynaecologic laparoscopic surgeries done from August 2016–July 2021 were included in the review.

Procedure

Data extraction was done by a team of three investigators of senior registrar/consultant level using a proforma, designed by authors for this purpose. The extracted data were then entered into the analysis software by a team of research assistants. All laparoscopic surgeries within the period August 2016–July 2021 were done using the 3-chip HD camera, Insufflator, light source, suction irrigation machine and diathermy machine all from [Karl Storz, Germany, 2008–2012][®]. Insufflation was with carbon dioxide (CO₂) with pre-set pressure at 15mmHg for all diagnostic cases and 15-20mmHg, for all operative surgeries. The CO₂ flow rate during insufflation with Veress needle was initially set at 1.5L/min, and then increased to 2L/min.

Statistical Analysis

Data were analyzed using the SPSS version 21.0 (SPSS Inc., Chicago, IL). Data were presented using frequency distribution tables and figures. Numerical data were expressed as mean ± standard deviation (SD).

Ethical Consideration

Ethical Clearance was obtained from the Babcock University Health and Research Ethics Committee with protocol number BUHREC718/21. Permissions were also obtained from the Babcock University Teaching Hospital to use the records available in the hospital for data generation.

RESULTS

There were 141 planned gynaecologic laparoscopic surgeries in the review period. However, 2 of the patients scheduled for elective diagnostic laparoscopic procedures did not come for their surgery and they never returned

for follow up visit. Thus leaving 139 cases that were done and whose data were analyzed. There were a total 1,027 gynaecologic surgeries in the five-year period. This gives a prevalence for laparoscopic surgeries of 139/1027 (13.5%) of total gynaecologic surgical procedures.

Table 1 highlights the socio-demographic characteristics of the patients that had laparoscopic surgery; they were mainly within the reproductive age bracket, with a mean of 33.9±10.2 years and median of 32 years. The majority 92/139 (66.2%) had tertiary education, were in a paid employment 118/139 (84.9%) and were married 105/139 (75.5%). The majority of the procedures were done for nulliparous women 94/139 (67.6%). Women with history of previous laparotomy and pregnant women accounted for 36/139 (25.9%) and 12/139 (8.6%) respectively.

Table 2 reveals that the common indications for laparoscopy were secondary infertility 38/139 (27.3%), complicated ovarian cyst 26/139 (18.7%) and ectopic pregnancy 11/139 (7.9%).

The Table 3 highlights the type and patterns of laparoscopic procedures. The surgeries were mostly done as elective procedures 108/139 (77.7%). Although the surgical team planned to perform diagnostic procedures in the majority 75/139 (54.0%), operative procedures were the most commonly done 82/139 (59.0%). The commonest operative procedure done was ovarian cystectomy 24/82 (29.3%). Laparoscopic ovarian drilling (LOD) was done in 15/82 (18.3%), while laparoscopic assisted vaginal hysterectomy (LAVH) and total laparoscopic hysterectomy (TLH) accounted for 7/82 (8.5%) and 1/82 (1.2%), respectively. Additional non-gynaecologic surgery was done in 12/139 (8.6%) of the cases and the commonest of such procedures was laparoscopic appendicectomy 7/12 (58.4%). Figure 1 highlights the 5-year trend in the type of laparoscopic surgeries. Notably, a sustained increase in the number of diagnostic procedures was observed from the 2nd to the 5th year. A similar trend was observed for operative procedures from the 1st to the 3rd year; a sharp decline was however observed in the 4th year.

Table 1 Socio-demographic Characteristics of the Patients that Underwent Laparoscopic Gynaecologic Surgery

Characteristic	Frequency (n=139)	Percentage(%)
Age (Mean ± SD)	33.9±10.2 years	
Parity		
0	94	67.6
1	19	13.7
≥2	26	18.7
BMI (Mean ± SD)	26.92±4.18 kg/m ²	
History of Previous Laparotomy		
Yes	36	25.9
No	103	74.1
Highest Educational Attainment		
Primary	4	2.9
Secondary	43	30.9
Tertiary	92	66.2
Employment Status		
Unemployed	21	15.1
Employed	118	84.9
Currently Married		
Yes	105	75.5
No	34	24.5
Pregnant		
Yes	12	8.6
No	127	91.4

Table 2: Indications for Laparoscopic Gynaecologic Surgery

Indication	Frequency	Percentage(%)
Primary amenorrhea	4	2.9
Secondary amenorrhea	6	4.3
Primary infertility	7	5.0
Secondary infertility	38	27.3
Complicated ovarian cyst	26	18.7
Polycystic ovarian disease	7	5.0
Endometriosis	6	4.3
Ectopic pregnancy	11	7.9
Uterine fibroid	7	5.0
Completed family size	4	2.9
Pelvic organ prolapse	4	2.9
Postmenopausal bleeding	2	1.4
Pelvic tumour	4	2.9
Chronic pelvic pain	3	2.2
Hydrosalpinx	2	1.4
Tubo-ovarian abscess	5	3.6
Other pelvic abscess	1	0.7
Acute appendicitis in pregnancy	1	0.7
Total	139	100.0

Figure 2 reveals a peak in the conversion to laparotomy in the 2nd year followed by a sustained drop and then an increase again in the 5th year when operative procedures started to rise again.

The outcomes of the gynaecological laparoscopic surgical procedures highlighted in Table 4 reveal a mean duration of surgery of 94.8±52.4 min. The operative procedures took longer time

Table 3: The Nature and Patterns of Laparoscopic Surgical Procedures

Procedure	Frequency (n=139)	Percentage(%)
Timing of proposed surgery		
Elective	108	77.7
Emergency	31	22.3
Type of planned procedure		
Diagnostic	75	54.0
Operative	64	46.0
Type of procedure done		
Diagnostic	57	41.0
Operative	82	59.0
Type of operative Procedure done (n=82)		
Salpingectomy	9	11.0
Tubal sterilization	3	3.7
Ovarian cystectomy	24	29.3
Myomectomy	6	7.3
LOD	15	18.3
TLH	1	1.2
LAVH	7	8.5
Laparoscopic adhesiolysis	8	9.8
Drainage of incidental pelvic abscess	1	1.2
Appendicectomy	7	8.5
Retrieval of entrapped peritoneal drain	1	1.2
Combined laparoscopy and hysteroscopy		
Yes	38	27.3
No	101	72.7
Combination with non gynaecologic surgery		
Yes	12	8.6
No	127	91.4
Additional non-gynaecologic surgery (n=12)		
Appendicectomy	7	58.4
Adhesiolysis		33.3
Omental biopsy	1	8.3

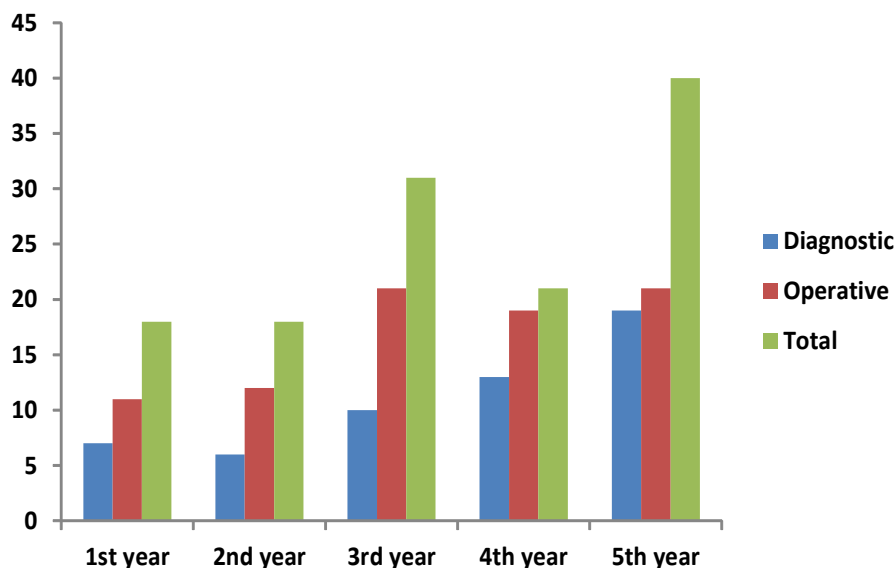


Fig. 1: Trends in Laparoscopic Procedures over 5 years

than the diagnostic procedures, with a mean duration of 113.9±58.1 min against 67.3±23.8 observed for diagnostic procedures. The conversion to laparotomy rate was 12/139 (8.6%) and operative procedures accounted for most 10/12 (83.3%) of the conversions. The commonest reason for conversion to laparotomy was for “appropriateness of abdominal route for the procedure” 9/12 (75%). Intraoperative complications were few, 3/139 (2.2%) and they included vascular injury from the anterior abdominal wall entry points, 2/3 (66.7%). The only postoperative complication observed was port site infection, 2/139 (1.4%).

The mean duration of hospitalisation was 2.2± 1.6 days and the majority, 92/139 (66.2%) spent ≤2 days in the hospital. There were no cases of re-admission or re-exploration for complications and no deaths occurred.

DISCUSSION

The observed prevalence of laparoscopic surgery of 13.5% of the total gynaecologic procedures is similar to 12% in Kano, 11.2% in Ilorin and 11.02% in Sokoto but higher than 4.45% reported from Abakaliki and 1.5% observed in the Democratic Republic of Congo (DRC).^{1,10,14,15,17}

The majority of the planned procedures were diagnostic (54.0%); most of the surgeries were however completed as operative procedures (59.0%). This outcome largely supports the finding of higher proportion of operative procedures in Ilorin, although at a lower rate compared to the 80%; observed in the report¹⁵ but contrasts reports from Abuja and Sokoto where most of the procedures were diagnostic.^{14,18} The benefit of confirming the diagnosis by initial diagnostic laparoscopy before proceeding with the operation is recognised.⁷ Apart from the advantage of ‘see and treat’ for the patient, occurrence of complications may necessitate the transition to operative procedures; consent issues however should be properly addressed. In addition, the initial ‘office only’ diagnostic laparoscopy procedures may not necessarily precede an operative set up; they can start together. Centres

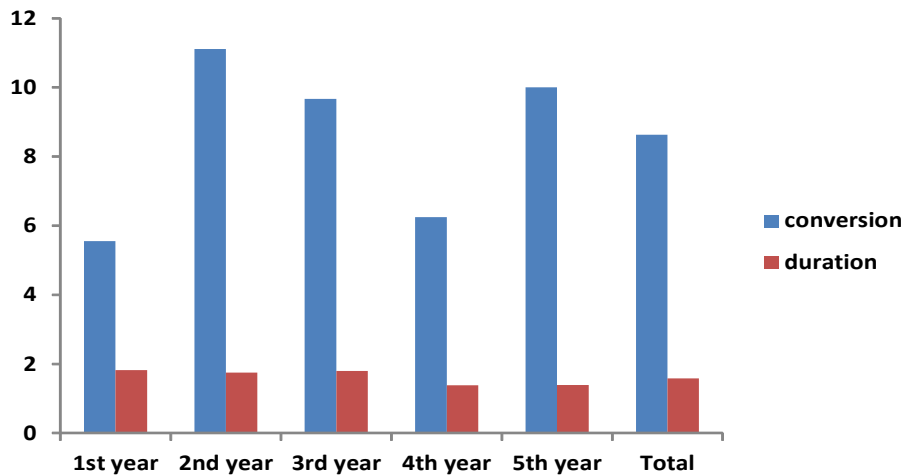


Fig. 2: Trends in the Procedure Duration (hours) and Conversion Rates (%) over 5 years.

Table 4: Outcome of Laparoscopic Procedures Performed

Outcome	Frequency (n=139)	Percentage(%)
Duration of surgery (mean±SD)		
Diagnostic	67.3 ± 23.8 min	
Operative	113.9 ± 58.1 min	
Total	94.8 ± 52.4 min	
Laparoscopic procedure completion		
Completed	127	91.4
Conversion to laparotomy	12	8.6
Conversion rates per type of surgery		
Diagnostic (n=57)	2	3.5
Operative (n=82)	10	12.2
Reason for non-laparoscopic completion		
Equipment malfunction	2	16.7
Anaesthetic concern	1	8.3
Laparotomy more appropriate	9	75.0
Occurrence of Intraoperative complication		
Yes	3	2.2
No	136	97.8
Specific intraoperative complication		
Bleeding from operated tissue	1	33.3
Other minor vascular injury	2	66.7
Occurrence of postoperative complication (port site infection)		
Yes	2	1.4
No	137	98.6
Duration of hospital stay (mean ±SD=2.2±1.6 days)		
≤2 days	92	66.2
>2 days	47	33.8
Patient general outcome		
Alive	139	100
Dead	0	0
Re-exploration		
Yes	0	0
No	139	100
Re-admission		
Yes	0	0
No	139	100
Payment method		
Health insurance	43	30.9
Out-of-pocket	96	69.1

contemplating an initial office (diagnostic) laparoscopy set up should have plans to start full operative setup in the shortest possible time, especially large tertiary level hospitals that are referral centres for a variety of cases. The transition from diagnostic to operative for many obvious reasons may have implications for the location of the office set up within a large unit; the office set up should be in proximity to a main endoscopic theatre or general theatre suite where other specialty surgeries are available and where complications can be promptly handled.

Combined hysteroscopy and laparoscopy were done in (27.3%) of the surgeries. This proportion may be due to the high rate of diagnostic laparoscopies for evaluation of infertility, which could have been higher, considering the fact that hysteroscopy procedures lagged behind laparoscopy for two years because of unavailability of instruments. Combined hysteroscopy has been found to be beneficial in detecting endometrial polyps and uterine anomalies in patients with endometriosis. Hysteroscopy was also beneficial in evaluating patients that were planned for IVF.^{19,20}

The patients were mainly within the reproductive age group as depicted by the mean age of 33.9 ± 10.2 years, which was similar to 33.0 ± 8.0 years observed in Abakaliki, eastern Nigeria.¹ This mean age is however higher than the 28.44 ± 4.99 years observed in a similar review of gynaecological laparoscopic procedures from Sokoto, north western Nigeria.¹⁴ This may be partly due to the laparoscopic procedures being related mainly to infertility care. The mean age at marriage is generally lower in northern Nigeria. Most women undergoing laparoscopy (75.5%) in our centre and 83.3% in Sokoto, were married.¹⁴

The majority of our clients were nulliparous (67.6%), which is comparable to the finding (70.4%) observed in Sokoto. This could be related to another finding of secondary infertility being the commonest indication for laparoscopic surgery in our centre (27.3%), in Abakaliki (63.9%) and in Sokoto (41.1%).^{1,14} Infertility was also the most reported indication for laparoscopy in Nnewi, Abuja, and Cameroon.^{9,16,18} Other

indications for laparoscopic surgery that were similar to the finding in our audit were: primary and secondary amenorrhea, chronic pelvic pain, ectopic pregnancy, ovarian cyst complications and contraception. While the above centres reported amenorrhea and chronic pelvic pain as next in importance after infertility, our findings revealed that ovarian cyst complications and evaluations for ectopic pregnancy were commoner indications for laparoscopy. Emergency surgery was available in our centre at an early stage of commencement of laparoscopic surgeries. The proportion (22.3%) of emergency procedures supports this assertion and this may be the reason for the above observations for the relative preponderance of ovarian cyst complications and ectopic pregnancy as indications. This observation is in agreement with a report from Jordan.²¹

Additional non-gynaecologic surgery was done in 12/139 (8.6%) of the surgeries and the commonest of such procedures was laparoscopic appendectomy 7/12 (58.4%). The diagnosis of appendicitis in young females often poses a dilemma.²² The converse was also reported from Kano, northwestern Nigeria, where an additional consented gynaecologic procedure (tubal sterilization), was done with a planned laparoscopic cholecystectomy.⁷ These findings further buttress the symbiotic association between the gynaecology and the general surgery laparoscopy unit and the need for consideration of these two units during initial setup of MAS facility in any hospital.

The mean duration of surgery 94.8±52.4 min, is longer than the reported 20.3 ± 1.4 min from another gynaecologic endoscopic surgery unit in Abakaliki, eastern Nigeria and the 55.5 ± 41 minutes from Cameroon.^{1,16} The proportion of operative procedures was however higher in our study than in these two centres. The mean duration of operative procedures (113.9±58.1 min) in our audit was comparable with some centres with similarly high rate of operative procedures; these include Kano (150–240 min) and Port Harcourt (40 to 300 min).^{7,13}

The conversion rate of 8.6% for the five year period is similar to 7% observed by Golash, *et al* in a retrospective review

of 1,320 laparoscopic surgeries²³ and the 6.7% observed in a report of 15 laparoscopic surgeries from Port Harcourt, southern Nigeria.¹³ In a 5 year review of 1,654 diagnostic laparoscopic procedures, Ikechebelu, *et al* reported a conversion rate of 0.12%; although lower than the 2/57 (3.51%) observed in our 5 year audit of diagnostic procedures. It is pertinent to note that, just as reported by Ikechebelu, *et al*, these 2 conversions occurred within the first year of laparoscopic surgical procedures.⁹ Other reported conversion rates from Nigeria include: 5.6% (Abakaliki), 4.1% (Jos), 1.9% (Sokoto), 0.7% (Ilorin) and 0.027% (Ile-Ife).^{1,12,15,24} The conversion rates reported from some other African countries are: 4% (DRC) and 1.96% (Kenya).^{17,25} Unlike in most centres above, operative procedures were the most commonly done in our centre 82/139 (59.0%) and operative procedures accounted for most, 10/12 (83.3%), of the conversions to laparotomy. The commonest reason for conversion to laparotomy was for “appropriateness of abdominal route for the procedure”, 9/12 (75%). The finding that women who had undergone previous laparotomy accounted for 25.9% of the population, largely supports the higher conversion rate in operative procedures. Patient selection was thus an important determinant of conversion to laparotomy. Similarly, high proportion of patients with previous laparotomy (26.7%) had been earlier reported.¹⁶

Other reasons for conversion to laparotomy include; equipment malfunctions from failure of the insufflator to display a non-error code for parameters and the inability of the operating theatre table to be set in the head-down position. There was also a sustained trend of reduction in the conversion to laparotomy rates over the 5-year audit period. Similar trend has been observed and described as necessary in the steep learning curve for laparoscopic surgical procedures.^{1,3,13,14}

The sustained increasing trend of our laparoscopic procedures over this 5-year audit period supports the general conclusion that increasing ergonomic and practice proficiency impacts the ability to surmount challenges and take

on increasing number and complexity of cases.^{1,3,7,9,16} However, a sharp decline in operative procedures was observed in the 4th year and that year coincided with the timing of the devastating COVID-19 pandemic, which resulted in a general reduction in surgical procedures globally. This condition led to the postponement of elective procedures and an optimization of emergency care resources to provide effective care to individuals who had the COVID-19.²⁶

The operative complication rate of 2.2% falls within the general complication rate of 0.2–10.3% for laparoscopic surgeries.¹⁵ They were all minor vascular complications and mostly (66.7%) entry-related bleeding from abdominal wall vessels. Operative complications of laparoscopy are mainly entry related.²⁷ Bladder and bowel injury were the most common intraoperative complications observed in a report from Kenya.²⁷ The only postoperative complication observed however, was port site infection [1.4%].

The mean duration of hospitalization of 2.2± 1.6 days is comparable to 3.4 ± 1.8 days and 5.5±2.5 days in reports from 2 different centres in Cameroon^{16,28} but more than the 1.6 ± 0.9 days and 20.3 ± 14.4 hours and observed in reports involving majorly diagnostic procedures from 2 different gynaecologic endoscopic surgery units in Nigeria.^{1,14} However, majority (66.2%) of the patients spent ≤ 2 days in the hospital.

Payment for gynaecologic laparoscopic procedures in our study was mostly out of pocket; this largely corroborates findings from other parts of the country.^{1,4} The association between infertility care and MAS may also be part of the reason why payment for MAS, in low resource settings like Nigeria today are mainly un-subsidised.^{1,4} A large proportion of the laparoscopic gynaecological procedures today are in patients who are being evaluated and managed for infertility.^{1,9–11} A similar trend was observed in other African countries.^{16,17} Advocacy for inclusion of laparoscopic surgical procedures in the health insurance package of care is highly recommended as not all cases are done for ‘fertility’ reasons which have limited

the benefit of this surgery to a wider range of people. Health insurance coverage for fertility care has been highly restrictive in many LMIC because of the paucity of funds and other competing health needs at national and state levels.

To forestall the bureaucratic and technical challenges of minimal access surgery service delivery, a joint-public private partnership has been suggested by many surgeons as a balance between profit-driven and health-impact delivery. This may affect availability of technical support, including maintenance, reduce the effect of incessant industrial actions in public hospitals, enhance ease of access and improve ease of payment for this service.^{1,3}

Collaboration with surgeons from developed countries have been shown to be of great technical benefit.^{16,17} Some authors from Nigeria also recommend this collaborations as necessary for a smooth take off, sustainability and widespread availability of this service in low resource settings.^{1,3,13,14}

CONCLUSION

The five year prevalence and indications for gynaecologic laparoscopic surgeries in this private owned tertiary level hospital were similar to findings of early experience audits from other parts of Nigeria. Operative procedures were however more commonly done, although the plan was for diagnostic laparoscopy in most cases.

There was a sustained increasing trend in the rate of gynaecologic laparoscopic procedures, only limited in the fourth year by the COVID-19 pandemic; in spite of this sustained trend, a steady decline in the duration of surgery, conversion to laparotomy rates and complications occurred.

Private owned hospitals may have the potential for uninterrupted progression of laparoscopic gynaecologic surgeries in Nigeria.

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Conflict of Interest

The authors declare that they have no conflict of interest related to this study or publication of this article.

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