

## ORIGINAL ARTICLE

## Experience with gynaecological laparoscopy in a tertiary hospital, North-West Nigeria

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## ABSTRACT

**Background:** Laparoscopy provides excellent visualization of the pelvic structures and often permits the diagnosis of gynaecological disorders and performance of pelvic surgeries without laparotomy. It has become an invaluable tool in both diagnostic and operative gynaecological procedures. It is a cost effective procedure.

**Objective:** The objectives of this study were to determine the rate, indications, findings and complications of diagnostic laparoscopy at Usmanu Danfodio University Teaching Hospital, Sokoto.

**Methodology:** This was a five-year retrospective review of all cases that underwent diagnostic laparoscopy from 1<sup>st</sup> October, 2008 to 31<sup>st</sup> October, 2013. All the case notes of patients that had diagnostic laparoscopy during the stated period were retrieved and analyzed.

**Results:** A total of 975 gynaecological surgeries were carried out in the department within the study period, out of which 7.4% were diagnostic laparoscopies. Of these case notes 82% were available for analysis. The ages of the women ranged 14-42years with a mean age of  $29.8 \pm 6.2$  years. The most common procedure carried out was laparoscopy and dye test (69.5%), followed by laparoscopy alone (23.7%). Infertility (primary and secondary) was the major indication (72.9%) then, primary amenorrhoea in 11.9% of patients. Findings at laparoscopy were bilateral tubal blockage in 39%, hypoplastic uterus in 6.8%, absent uterus and ovaries in 3.4%, bilateral hydrosalpinx in 5.1%, dense pelvic adhesions 6.8%, perihepatic adhesions in 8.5% and moderate pelvic adhesion in 20.3% of cases. All the procedures were performed under general anaesthesia. The complications included upper abdominal pain 8.5%, abdominal discomfort from residual pneumoperitoneum 5.1%, difficult insufflation 3.4% and wound sepsis 3.4%. The mean duration of hospital stay was  $1.9 \pm 0.9$  days, making our laparoscopy, therefore, not completely an outpatient procedure.

**Conclusion:** Diagnostic laparoscopy is a relatively safe procedure with minimal complications when performed by skilled personnel. The rate of 7.4% found in this study together with its most common indication is similar to the reports from other centres.

**Keywords:** Complications, diagnostic, indications, infertility, rate, surgeries

## INTRODUCTION

Diagnostic laparoscopy is a minimally invasive procedure performed for the diagnosis of intra-abdominal diseases. Laparoscopy enables direct inspection of intra-abdominal organs and documentation in order to detect pathology, and also facilitates access to tissues and organs for biopsy, aspiration and culture.<sup>1,2</sup> Laparoscopic ultrasound can be used to evaluate deep organ parts that are not accessible for inspection. Diagnostic laparoscopy not only facilitates the diagnosis of intra-abdominal diseases, but also, makes therapeutic interventions possible.<sup>1</sup>

In the initial practice, the use of laparoscopy in gynaecology had been restricted to the diagnosis of chronic pelvic pain, infertility and sterilization procedures. Later, its use in the diagnosis and treatment of ectopic pregnancy became fully established.<sup>1</sup> More recently, in the last 15 years or so, the popularity of laparoscopy has increased with laparoscopy becoming the preferred method of surgery for a wider range of gynaecological conditions.<sup>2</sup> Most gynaecological procedures can now be safely performed laparoscopically.<sup>2</sup>

The main advantages of laparoscopy include smaller, cosmetically accepted wounds, less pain, less morbidity and shorter hospital stay.<sup>2</sup> Diagnostic laparoscopy is a relatively safe procedure with published complication rates of 2-4 per 1000.<sup>3</sup> The actual incidence of complications vary in different series, which could be as a result of the extent of the procedure and the definition of the complication. Also, there may be bias in reporting, especially where only minor complications occur.<sup>4</sup> Major laparoscopic procedures are associated with a higher rate of complications (0.6%-18%) compared with minor procedures (0.06%-7.0%).<sup>4</sup> Majority of the complications occur during the entry of Verres' needle into the abdomen to create pneumoperitoneum. The incidence of entry

related complications decreases with open entry, and this is why some workers have advocated routine use of the open technique.<sup>4</sup>

This study was undertaken to determine the rate, indications, findings and complications of diagnostic laparoscopy at Usmanu Danfodio University Teaching Hospital, Sokoto.

## METHODOLOGY

This was a five-year review of all cases that underwent diagnostic laparoscopy in the Department of Obstetrics and Gynaecology of Usmanu Danfodio University Teaching Hospital, Sokoto from 1<sup>st</sup> October, 2008 to 31<sup>st</sup> October, 2013. The sources of information were included the patients' case notes, gynaecological ward registers, gynaecological clinic records and theatre records. All the case notes of the patients that had diagnostic laparoscopy during the stated period were retrieved and analyzed using simple percentages.

## RESULTS

During the study period a total of 975 gynaecological procedures were performed in the department, out of which 72 (7.4%) were diagnostic laparoscopy. Only 59 patients' case notes were available for analysis giving a retrieval rate of 82%, and further analysis was limited to these cases. The age of the women ranged between 14-42 years with a mean age of 29.8 years  $\pm$  6.2 years. Majority of the women (84.8%) were within 20-29 year age group.

The most common procedure carried out was laparoscopy and dye test (69.5%), followed by laparoscopy alone (23.7%). Two patients had laparoscopy followed by laparotomy for retrieval of missing IUCD and bilateral ovarian cysts (Table 1). Infertility (primary and secondary) 72.9%, was the major indication for diagnostic laparoscopy, followed by primary amenorrhoea in 7 (11.9%) patients (Table 2). Of the 59 patients that had diagnostic laparoscopy 39% and

6.8% had bilateral tubal blockage and hypoplastic uterus, respectively. The uterus and ovaries were absent in 2 of the patients, and frozen pelvis was found in 6.8% of the patients (Table 3). Peri-hepatic adhesions were seen in 8.5% of the patients. Co-existing moderate pelvic adhesions was also seen in 20.3%. All the procedures were done under general anaesthesia. There was difficult insufflation in 2 patients because of obesity, two had wound sepsis but majority reported no complications (Table 4). The mean duration of hospital stay was  $1.9 \pm 0.9$  days. Thirty-three (56%) patients were discharged on the second postoperative day.

**Table 1.** Types of procedure

Procedure	Frequency (%)
Laparoscopy alone	14 (23.7)
Laparoscopy + Dye Test	41 (69.5)
Laparoscopy + lapartomy	2 (3.4)
Laparoscopy + adhesiolysis	1 (1.7)
Cervical dilatation + laparoscopy	1 (1.7)
<b>Total</b>	<b>59 (100)</b>

**Table 2.** Indications for laparoscopy

Indications	Frequency (%)
Primary infertility	21 (35.6)
Secondary infertility	22 (37.3)
Primary amenorrhoea	7 (11.9)
Chronic pelvic pain	4 (6.8)
Chronic PID	1 (1.7)
Ambiguous genitalia	2 (3.4)
Transverse vaginal septum	1 (1.7)
Missing IUCD	1 (1.7)
<b>Total</b>	<b>59 (100)</b>

**Table 3.** Laparoscopic findings

Findings	Frequency (%)
Bilateral tubal block	23 (39.0)
Bilateral patent tubes	11 (18.6)
Unilateral tubal block	7 (11.8)
Hypoplastic uterus	4 (6.8)
Dense pelvic adhesions	4 (6.8)

Bilateral hydrosalpinx	3 (5.1)
Unilateral hydrosalpinx	2 (3.4)
Absent uterus/ovaries	2 (3.4)
Bilateral ovarian cysts	2 (3.4)
IUCD in the peritoneal cavity	1 (1.7)
<b>Total</b>	<b>59 (100)</b>

**Table 4.** Complications from procedure

Complications	Frequency (%)
No complication	47 (79.7)
Upper abdominal pain	5 (8.5)
Abdominal discomfort from residual pneumoperitoneum	3 (5.1)
Difficult insufflation	2 (3.4)
Wound sepsis	2 (3.4)
<b>Total</b>	<b>59 (100%)</b>

## DISCUSSION

Diagnostic laparoscopy constituted 7.4% of all gynaecological surgeries in the department and the procedure was done wholly for diagnostic purposes. The low incidence obtained in this study is comparable to 28.7/1,000 reported in Abuja but, lower than 12% reported in Kano, and this could possibly be as a result of few trained personnel.<sup>5,6</sup>

Infertility (72.9%) was the leading indication for diagnostic laparoscopy in this study. This finding was similar to what was reported by Ekele in Sokoto, Umar-Sulyman in Zaria, and Shraddha in India.<sup>7,8,9</sup> Primary amenorrhoea was the second most common indication, accounting for 11.9% of cases. This finding is higher than what was reported in Kano.<sup>6</sup> In this study, laparoscopy and dye test was the most common procedure performed. This was not surprising because infertility was the most common indication for diagnostic laparoscopy in the centre.

The finding of bilateral tubal blockage concurred with the report from Kano.<sup>6</sup> Peri-hepatic adhesions were found in 8.5% of the patients, and this proportion is higher than what was reported from Kano. The possible

explanations for this could be that the patients in Sokoto present at a later stage, with more severe disease.

Diagnostic laparoscopy is usually performed under general anaesthesia, with endotracheal intubation to minimize the risk of aspiration. However, if the pressure used for peritoneal insufflation is limited, laparoscopy can be performed under conscious sedation.

All the cases in this study had general anaesthesia for their laparoscopies as was similarly reported in Abuja.<sup>5</sup> Ikechebelu reported a conversion rate of 0.12% following Verres' needle injury, but such injuries with conversion were not found in this study even though closed access technique was used for all the patients.<sup>10</sup>

There were no major complications reported. The main reported minor complication was upper abdominal pain followed by abdominal discomfort from residual pneumoperitoneum. The mean duration of hospital stay was  $1.9 \pm 0.9$  days with majority of the patients discharged on the second day. This could be as a result of general anaesthesia used for the procedure. Babarinsa had advocated daycare diagnostic laparoscopy with a view to saving the patients' time, reducing costs and minimizing the risks of anaesthesia.<sup>11</sup>

## CONCLUSION

Diagnostic laparoscopy is a common and relatively safe procedure with minimal complications when performed by trained personnel. The rate of 7.4% found in this study, together with its most common indication, is similar to the reports from other centres. Daycare diagnostic laparoscopy is encouraged to reduce the cost of the procedure and duration of hospital stay.

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