

Research Article

Results of Laparoscopic Management of Infertility in Dakar Teaching Hospital: About 101 Cases

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Abstract

Background: Define the epidemiological and clinical profile of patients with infertility and evaluate the laparoscopy assessment at Dakar Teaching Hospital.

Methods: This is a prospective, descriptive and analytic study on a series of 101 patients followed for infertility and supported by laparoscopy from June 1st, 2009 to December 31, 2011. For each patient, the socio-demographic and clinical data of operation and the scalable suites were studied.

Results: Laparoscopy assessments were performed on 39.5% of patients followed for infertility representing 78.9% of laparoscopy indications. The average age of patients was 29 years and mean parity was 1.2. Infertility type was primary in 39.6% of cases and secondary in 60.4% of patients. Sexually transmitted diseases background was found in 51% of cases. Pathologies encountered were dominated by tubal abnormalities (70% of cases). The operative procedures which were performed were adhesiolysis (35.1%), tubal plasty (30.4%) and methylene blue dye test for tubal patency. Conversion was necessary in 4.9% of cases motivated by the importance of adhesions (3 cases) or technical difficulties (2 cases). The main complications were represented by a vascular wound and uterine perforation. The post-operative course was uneventful in 96% of cases. We observed a pregnancy rate of 5.9% of cases beside an indication of medically assisted procreation in 28.7% of cases.

Conclusion: The development of the endoscopic approach becomes a necessity due to the importance of tubal infertility caused by infections. Its laparoscopic diagnosis and treatment at an early stage may improve the prognosis.

Keywords: Laparoscopy; Tubal infertility; Dakar

Introduction

During the last thirty years, laparoscopic surgery has been remarkable both in the field of instrumentation and in the expansion of its indications, almost all gynecological surgeries are presently endoscopic feasible. Originally used in the diagnostic approach, laparoscopy is presently experiencing a wide use in the field of therapeutic management of infertility with satisfactory results, so much that the microsurgical approach is now relegated to the background. At Dakar teaching hospital, laparoscopy knows its infancy and its main indications are diagnosis and infertility treatment.

The objective of this work is to define the epidemiological and clinical profile of patients followed for infertility and assess the management as well as the prognosis.

Materials and Methods

This is a prospective, descriptive and analytic study of a continuous series of cases of infertility which underwent laparoscopy. Support was jointly conducted between Gynaecological and Obstetric Clinic (GOC) of Le Dantec Teaching Hospital and Roi Baudouin hospital center from June 01, 2009 to December 31, 2011. All patients who underwent laparoscopic intervention in the context of an exploration or infertility management were included in the study. For each patient, a single survey form was filled and we studied the socio-demographic and clinical aspects such as age, gravidity, parity, history and the causal disease; the operating data: indications, the conduct of the laparoscopic instrument, possibly made gestures and incidents as well as operational difficulties; the short, medium and long term postoperative course as well as the results of infertility treatments.

Olympus laparoscopic column was used for all interventions. The very limited instrumentation, consisted of a set of two optical vision right (0°) and angled view (30°), metal reusable trocars, two verez needles, a paddle, a pair of bipolar coagulation a hook monopolar

coagulation, two pairs of curved and straight scissors, two grasping atraumatic uterine forceps and an elevator.

Results

Epidemiological and clinical profile

During the study period, 101 patients underwent laparoscopy out of 256 patients followed for infertility (39.5%). The average age was 29 years with extremes of 20 and 40 years. The majority of our workforce belonged to the age range of 25-36 years (Table 1).

The mean gravidity was 1.8, the nulligestes accounted for 37.8% of patients. The mean parity was 1.2. More than half of the patients

Paramètres	Variables n (%)			
Age	20 – 24 years 17 (16,8%)	25 – 29 years 39 (38,6%)	30 – 34 years 34 (33,6%)	35 – 40 years 11 (10,8%)
Gravidity	Nulligravida 38 (37,8%)	Primigravida 36 (35,6%)	2-3 23 (22,8%)	> 4 4 (3,9%)
Morphotype (BMI)	Thinness (<18,5) 2 (1,9%)	Normal (18,5 – 24,9) 83 (82,3%)	Overweight (25 – 29,9) 11 (10,9%)	Obesity (>30) 4 (3,9%)
Infertility length	< 1 year 8 (7,9%)	1 – 2 years 19 (18,8%)	3 – 5 years 33 (32,6%)	> 5 years 37 (36,6%)

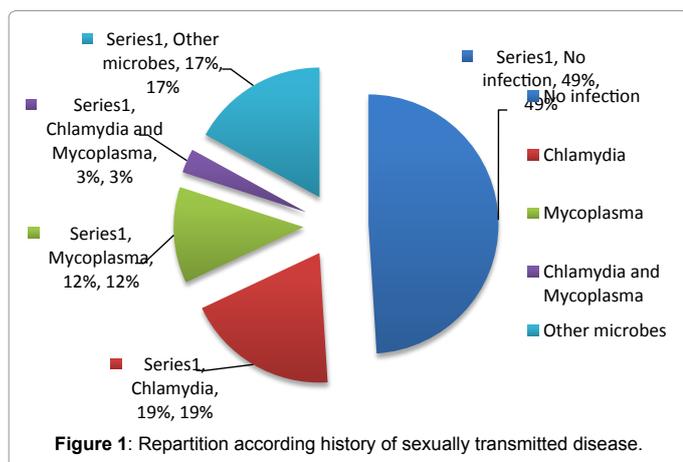
Table 1: Distribution of patients according to epidemiological and clinical data.

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(68.4%) consisted of nulliparous and primiparous.

A known history of sexually transmitted disease was found in 51 patients (50.5%). It was chlamydial infection in 19.3% and Mycoplasma in 12.2% of cases (Figure 1). Treatment had been established in only half of the patients (26 cases or 25.7%).

Twenty-eight patients (27.7%) have previously undergone laparotomy. It was pelvic surgery in 24 cases and abdominal surgery in 4 cases.

Laparoscopy was the final stage of the exploration and management of infertility, accounting for 78.9% of the indications of laparoscopy during the study period (101 actes/128). That was a primary infertility in 39.6% of cases and secondary one in 60.4%.

Operating data

Type of intervention: Laparoscopic diagnostic was performed in 41.5% of cases (42/101) motivated by the etiological research of unexplained infertility. Laparoscopic was operating on 59 patients (58.5%).

The aetiology was tubal in 70% of cases (71 patients): tubal obstruction in 33.6% and 36.4% of hydrosalpinx. It was associated to severe pelvic adhesions in 7 cases.

The operative procedures consisted of adhesiolysis which was indicated in 52 patients (40.6%), but this procedure was possible and performed in only 45 cases (35.1%). In 7 cases of infertility, severity of adhesions made it impossible to adhesiolysis. It was surgical complementary to salpingoplasty in 9 cases.

Salpingoplasty was performed in 39 patients (30.4%). Within a pool of 32 patients, there were cases of infertility in connection with a hydrosalpinx objectified in hysterosalpingography. In addition, tubal patency was tested by methylene blue dye test in all cases.

Difficulties and operative complications: Difficulties were encountered in obese patient (weight up to 93 kg), and large ileal dilatation (2 cases). However, the planned operating actions (salpingoplasty and methylene blue dye test) were performed. Conversion to laparotomy was necessary for 5 patients (4.9%): in 3 cases motivated by the existence of dense adhesions and in two other cases by technical difficulties. A hemorrhagic incident by accidental injury of a branch of the utero-ovarian vein had occurred during a salpingoplasty. It was controlled by coagulation with bipolar forceps. Perforation of the uterus and a small perforation of the anterior cul-de-sac were caused by the elevator. No therapeutic action was

necessary for these two cases, apart antibiotics and monitoring. Four cases (3.9%) of parietal infection of the umbilical orifice were observed postoperatively representing the only cases of infectious complications. These infections were treated by antibiotics and local care.

Prognosis: The postoperative course was uneventful in 96.03% of cases. An indication of Medically Assisted Procreation was raised in 29 patients representing 28.7% of infertility cases in connection with dense adhesions (3cases) and proximal tubal obstruction (26 cases). During the follow-ups, six patients have achieved pregnancy, representing 5.9% among all cases of infertility and 8.3% of the cases which could result to a spontaneous pregnancy without any need of IVF process. Among them, one had evolved into a miscarriage while another had resulted in a recurrence of ectopic pregnancy requiring salpingectomy.

Discussion

Socio-epidemiological

The average age relatively young is in accordance with the indications of infertility. Indeed, in our societies, early marriage, motherhood and the number of children are of major social importance on women in childbearing age. And the average age is found superimposed on that of other African series [1,2]. The mean parity was approximately equal to 1 and almost all of our patients were pauciparous.

Clinical profile and operative data

Currently, almost all gynecological surgery can be performed endoscopically [3-6]. This technique would therefore benefit from being developed in our context, in view of its many advantages over laparotomy including: less disfigurement, pain and reduced postoperative convalescence and especially length of stay shortened relieving our resource-limited structures [4,7,8].

Indications for laparoscopy for infertility represented 78.9% of acts performed through endoscopy. The answer to the question of the systematic practice of laparoscopy in the staging of infertility is not yet decided. After being systematically carried out in the years 1970-1980, the systematic practice of laparoscopy has been gradually abandoned in the initial workup of infertility in the following years [9].

We performed laparoscopy in 41.5% of cases of infertility as the last step of infertility diagnostic. Like other authors [2,10], we found that attitude judicious in our context where the hormonal balance is not feasible everywhere, ultrasound is not always conclusive and tomodesotométry and MRI among others, are not always accessible. As with any diagnostic exploration, it seems legitimate to identify situations justifying laparoscopy. According to Yazbeck et al. [11], without any significant male etiology, laparoscopy should be systematic for suspected tubal pathology at hysterosalpingography to conduct a complete assessment and establish a prognosis for tubes in the aim to propose a suitable treatment: fimbrioplasty, néosalpingostomy, tubal reversal surgery or salpingectomy. Laparoscopy can also be performed in strong presumption of pelvic pathologies when the treatment can improve the prognosis of fertility, in particular, endometriosis or pelvic adhesions. In cases of unexplained infertility with good ovarian reserve, laparoscopy is also recommended. It such cases, it allows discover unknown pelvic pathologies in 60% of cases.

Infertility was primary in 39.6% and secondary in 60.4% of cases. This predominance of secondary infertility is found by other African authors [1,10,12]. Etiologies are dominated by the history of pelvic infection or improperly processed postpartum infection or a sexually

transmitted infection among which we found in our series, 19% a history of chlamydia infection and 12% of mycoplasma infection.

The presence of antibodies anti-Chlamydia is a marker of prior exposure to Chlamydia, the most frequent etiological factor of high infectious genital abuses. Publications compiling pelvic pathology found in laparoscopy women seronegative objective low sensitivity (67%) of this review [11], even if it is coupled with a history and a pelvic ultrasound for our patient. Chlamydia serology shows results comparable to those of the HSG in the diagnosis of tubal obstruction or hydrosalpinx. Despite some positive predictive value (35%) and negative (91%) in the diagnosis of tubal pathologies bilateral of infectious origin, this serology remains disappointing in the overall context for the diagnosis of a noninfectious of infertility etiology, negative predictive value reduced to 65% in this case there [11]. PV followed by the HSG, Chlamydia serology or both association were made as assessment of first-line for our patients in the primary evaluation of infertility of tubal origin. Next were performed a pelvic ultrasound looking for other etiologies female and a spermogram from her husband if financial resources were available. However, reliability is not absolute as much in tubal obstructive pathology, than in the other etiologies of infertility peritone-opelvienne such as endometriosis or tubo-ovarian adhesions, the interest of a diagnostic laparoscopy in certain clinical situations was obvious.

The attitude we have adopted to face this indication is largely justified, as various authors [9,11,13] in the current debate "for or against the routine use of laparoscopy for infertility" especially as the majority of our patients (70% of infertility cases) had evident tubal abnormality at hysterosalpingography. It was, for most of our patients, a tubal infertility due to infectious origin. In the literature, tubal infertility accounts for 30% to 40% of situations. It is a common etiology in young women in developing countries. It includes the tubal occlusion and pelvic adhesions [1,12,14]. Its causes are represented by pelvic infection, pelvic endometriosis and history of abdominopelvic surgery. The results of treatment are poor by microsurgery. Otherwise, the development of laparoscopic surgery including the CO₂ laser has achieved the fimbrioplasties and salpingoneostomies with good anatomical results [2,4]. Laparoscopy has improved operability assessment to select operable cases of those falling in vitro fertilization (28.7% in our series).

Operational aspects and prognosis

The operative laparoscopy were predominant in our study (58.5%). But it was for most cases of minor surgical procedures dominated by adhésiolysis (35.1%). It is the basic procedure in gynecological laparoscopic surgery [2,4]. It varies depending on the type and location of adhesions and the instrumentation used, especially in infertility when it should be done at maximum [9,13].

The salpingoplasty, including distal tubal plasty was performed in 30.4% of cases of infertility caused by hydrosalpinx or phimosis as recommended by several authors [4,15]. The low rate of minor complications have resulted in simple postoperative course in our patients. This finding is explained by the simplicity of procedures performed within a diagnostic laparoscopy or minor operative laparoscopy. Indeed, it is demonstrated and accepted that the risk of complications is statistically correlated to the importance of gesture. This claim is demonstrated by Chapron et al. [16] in a multicentric French study performed by the French Society of Gynaecological Endoscopy evaluating complications of laparoscopy in gynecology. The risk of complications was 1.84 out of diagnostic laparoscopies (11 of 5983 procedures) with seven hemorrhagic complications, three

intestinal and urological surgery. This rate increases when surgical procedures were performed during laparoscopy up to 11% of minor complications and 2.3% of major complications [10,16,17].

Patient follow-up revealed six pregnancies representing 5.9% of infertility cases. This rate is relatively low compared to what is usually reported by other groups [4,15,18,19]. This is related, on the one hand with the inadequate treatment of pelvic infections in our patients and also with the age and severity of diseases encountered explaining further indications of higher medical assistance to procreation found in our series around 28.7% of infertility cases.

Conclusion

The development of the endoscopic approach is a necessity in our region because of the importance of tubal infertility caused by infection. The results of laparoscopic treatment in such cases are better. Surgical intervention is often needed in patients with infertility and has a wide application in these patients. Laparoscopy has nearly replaced laparotomy as the preferred access. It has a diagnostic as well as therapeutic role and both can be done at the same sitting. Its laparoscopic diagnosis and treatment at an early stage may improve the prognosis.

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