

Female Sterility and Her Paraclinical Care in Lubumbashi: Inventory from 1998 to 2001

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Abstract :-

➤ Introduction

According to the WHO, the number of infertile couples in the world is estimated at 48.5 million, thus revealing that infertility is a global health problem that deserves more particularly to be addressed in developing countries where the rates infertility are higher. The goal of this study was to establish an inventory of female sterility and its management in our environment.

➤ Methodology:

We acted as a descriptive cross-sectional study from July 1998 to July 2001 in the obstetrics and gynecology department of the university clinics of Lubumbashi. It concerned 125 women who came for consultation for maternity reasons. Only 25 women had performed at least 5 paraclinical examinations as part of the exploration of infertility during the study period, namely; hysterosalpingography, pelvic ultrasound, basal temperature curve, cervical mucus and inflammatory workup. Data collection was carried out using survey sheets which had made it possible to collect information concerning the patients on the one hand, and their results of the various explorations carried out on the other hand. The data entry was done using Epi Data version 3.1 and analyzed by SPSS software version 21.0.

➤ Results

The mean age of the women was 29 ± 5.6 years. Twenty-eight percent of the patients presented with primary infertility and 72% with secondary infertility. Patients with secondary education were the most numerous ($59/125 = 47.2\%$). On hysterosalpingography, the most common uterine lesions were salpingitis (60%) and tubal obstructions (40%). Pelvic ultrasound, which was normal in 33.33% of cases, and in the remainder of the cases, it revealed the following associated pathologies: myomas in 30.30%, ovarian cysts in 27.27% and tubo-ovarian abscesses in 9.09% of cases. Primary sterility was associated with salpingitis, a monophasic thermal curve, absence of fern leaf crystallization of cervical mucus and hyperleukocytosis. The statistical difference being significant only for the fougérisation. On the other hand, secondary sterilities were grafted onto tubal obstructions (tubo-ovarian abscess), ovarian cysts, uterine myomas as well as hyperleukocytosis.

➤ Conclusion

The management of female infertility requires many additional examinations; ultrasound was the most common exploration, secondary infertility was the most common, and it was grafted on tubal obstructions, ovarian cysts, myomas and hyperleukocytosis. Hence the management of female infertility requires the complementarity of the gynecologist / radiologist must be exercised in the direction of greater efficiency for the patients.

Keywords:- Female Infertility, Exploration s Para Clinical s Lubumbashi.

I. INTRODUCTION

The couple's sterility is defined as the probability of pregnancy which becomes equal to zero; it is a condition which leaves no chance for spontaneous pregnancy [1].

Infertility is defined as the inability to achieve pregnancy after 12 months or more of a couple of childbearing age having regular, unprotected sex [2-4].

It is evident that infertility is a major problem related to reproductive health in sub-Saharan Africa. Indeed, approximately 580 million people worldwide (roughly 5 - 8% of couples) experience infertility at some point in their reproductive life. Of these, approximately 372 million people (about 186 million of couples) live in economically weak countries or middle income [5]. Several thousand or 15% of couples around the world cannot conceive after regular sexual intercourse, however in more than 30% of cases, the etiology of this infertility is unknown [6].

In the Democratic Republic of Congo, sterility is an affection which has rather complex societal repercussions on the individual, the family, and in particular the society as a whole with regard to conjugal dynamism, especially in our context, where procreation is one of the main goals of marriage. Thus, non-procreation remains one of the main causes of divorce, despite recent progress in the early diagnosis and management of infertile couples. A study carried out in Kisangani showed that couples' infertility remains a problem in our communities with a prevalence of 16.1%. It is predominantly secondary due to a significantly high rate of history of abortion and endo-uterine curettage [7].

In Haut-Katanga and more particularly in Lubumbashi, it was noted in the mining areas a decrease in the number of motile spermatozoa in the hour following the sampling which was markedly accentuated beyond the sixth hour, which suggests decreased sperm longevity; and high prevalence of abnormal sperm in semen samples [8]. This was explained by the presence of arsenic in the polluted environment of the mining areas of Haut-Katanga [8].

Given the complexity of the causes of infertility, the difficult access to paraclinical explorations makes treatment difficult. The lack of a protocol for the care of infertile couples and the lack of a fertility center for medically assisted procreation (medically assisted procreation) near the province motivated us, with a view to a more in-depth study, to take stock of the situation. the management of infertility by considering the data collected during a period during which cases of infertility were *mutatis mutandis* better documented in our environment.

II. METHODS

This was a descriptive cross-sectional study that we had carried out on all the women who presented as a reason for consultation in our office at the University Clinics of Lubumbashi; a desire for motherhood during the period from July 5, 1998 to July 30, 2001. The study population consisted of 125 women, aged 18 to 40 years. Only 25 patients had been able to pass all the prescribed para-clinical examinations in an environment without any health insurance system. As the sampling was exhaustive, only women who had lived in the site in question for at least 2 years, led a married life with regular sexual relations for more than 2 years and who had given their consent to the study were included in the study. participate in the study. Women with a clear etiology of infertility, under treatment for infertility or any other form of medically assisted procreation, were excluded from the study. The paraclinical parameters considered were Hysterosalpingography, Ultrasound, Basal temperature curve, Cervical mucus and Inflammatory assessment. The Chi-square test with Yates correction and Fisher's exact test were used to compare the proportions observed using SPSS version 17 software. The significance level was set at $p < 0.05$ at a confidence interval of 95 % .

III. RESULTS

During this study, sept (72%) out of ten patients came for consultation for secondary infertility and nearly 3 (28%) out of ten for primary infertility (Table I).

Whether it is primary sterility (44.44%) or secondary sterility (47.19%), the highest frequency of respondents was observed in the age group of 28 to 32 years (Table II). However, the distribution of patients according to age and type of infertility did not show a significant difference ($p = 0.3893$).

The level of secondary education was predominant among the respondents for the two types of infertility (Table III). The observed difference was not statistically significant ($p 0.99$).

Hysterosalpingography and ultrasound were the most requested paraclinical examinations with 20% and 26.40% of cases, respectively.

Hysterosalpingography allowed us to demonstrate salpingitis in 60% of cases and tubal obstruction in 40% of cases, while pelvic ultrasound was normal in 33.33% of cases and showed uterine myomas and ovarian cysts in respectively 30.30% and 27.27% of cases. The temperature curve revealed 56.00% of cases of monophasic tracing and 44.00% of cases of bi-phasic tracing. For the examination of the cervical mucus : the test was positive (crystallization plus stringy mucus) in 36.00% and negative in 64.00% of cases. As for the inflammatory assessment, it was characterized by hyperleukocytosis associated with an increased ESR in 86.96% of cases.

We observed on hysterosalpingography more cases of tubal obstruction and salpingitis in secondary infertility. As with ultrasound ; more tubo-ovarian abscess , ovarian cysts and uterine myomas were observed in respondents with secondary than primary sterility but we had more normal ultrasound in respondents with primary sterility (42.85 %) than in respondents with secondary sterility ; while 72.73% of the cases of monophasic tracing for the menothermal curve were recorded in the respondents presenting a primary sterility and 71.43% with a two-phase tracing in the secondary sterility (Table VI). However, although cases of crystallization of cervical mucus with spinning were evenly distributed between the two types of sterility, the negative test rate for primary sterility was slightly higher than that for secondary sterility, at 76.92% versus 75% ($p = 0.01$).

IV. DISCUSSION

Regarding age, our patients were between 18 and 45 years old, the same as Shinga in 2016, in which the patients were between 18 and 47 years old [7]. Unlike Watchom who observed the age groups of 30-40 years in women to be older than our patients for the lower limit [9]. As in the study by Gandji et al., Infertile women are more numerous between 30 and 39 years old [10].

Secondary infertility has Represented é 72 % of infertility cases in our series, which is a slightly higher than the rate reported by Shinga [7] in 2016 in Kisangani (70.9%) but lower than that reported by the study carried out in Lomé by Sonhayé et al. who found that secondary infertility represented 81% of the reasons for consultation and that the endocervical lesion most often found was synechia in 72% of cases [11]. Our results are also different from those of the study done in Yaoundé by Watchom in 2016 which reported primary infertility in 58.8% of cases in couple infertility [9].

The etiological factors of female infertility most represented in our study were for the couple's infertility after hystero-graphy: tubal obstructions (40%), salpingitis (60.0%), on ultrasound it was demonstrated: ovarian cysts (27.27%), uterine myomas (33.33%) and in an inflammatory assessment: hyperleukocytosis (86.9%). On thermometry, a monophasic trace indicating luteal and / or follicular insufficiency, hence a progesterone deficit; monophasic this route lets say that ovulation has not occurred and the crystallization and filance cervical mucus, the test was negative in 64.00% signing an excess of estrogen in the surveyed (Table water V). Secondary sterilities were grafted onto tubal obstructions (tubo-ovarian abscess), ovarian cysts, uterine myomas, a bi-phasic tracing in 71.43%, a negative cervical mucus crystallization test in 75.0% as well. that hyperleukocytosis in 92.30% and in 45.45% of cases the ultrasound was normal. Our results are similar to those of the Yaoundé study by Watchom [9] in which the etiological factors of female infertility were dominated by tubopelvic pathologies (51.74%), followed by ovulatory disorders (26.18%) A hysterosalpingography; tubopelvic pathologies were dominated by salpingitis (60.00%) in our series. This is different from the results of Gandji et al in 2013, who found the following uterine lesions on hystero-graphy: uterine myomas in 71.4% of cases followed by synechiae in 22.8% and bilateral tubal obstructions in 45, 9% [10].

In paraclinical examinations, pelvic ultrasound was the most performed exploration in the exploration of female infertility in 26.40% of women and hystero-graphy in 20% of cases, while in the study by Gandji et al. [10], most women consulting for infertility performed ultrasound coupled with HSG (62%), followed by HSG (31%) and ultrasound (17%) [8]. We find that the patients in Gandji's study performed more hysterosalpingography but less ultrasound than in our study [10]. On the other hand, Wembulua Shinga, who performed inflammatory tests in 73% and ultrasound alone in 69.1%, hystero-graphy in 43.6% and study of cervical mucus in 2.9% of women who consulted for infertility of the couple [7]. However, these results are far superior to the results in our study, but with very little mucus study performed in Shinga BW. HSG is an emerging test that takes more and more place in uterine exploration, it has the advantage of speed, and the concomitant exploration of

the myometrium allows to detect intrauterine myomas, to explore the uterine lining in a thin layer. The classic examinations for the exploration of female infertility remain ultrasound and hysterosalpingography, which allow exploration of the uterine cavity and the uterine tubes [12]. Pelvic ultrasound is used to diagnose uterine myoma, to specify its location in relation to the tunics of the uterus, and to take measurements. It also allows measurements of the uterus and endometrium. Pelvic ultrasound is also the best exam for exploring the ovaries. The complementarity between HSG and pelvic ultrasound resides in the fact that these two examinations make it possible to explore the internal genitalia of women. These explorations are necessary during the secondary infertility assessment. Pelvic ultrasound is the first examination requested, HSG being requested in second intention. HSG and pelvic ultrasound therefore remain essential and complementary examinations in the exploration of female secondary infertility.

The most requested exams other than hystero-graphy and ultrasound in our study were; the basal temperature curve, the examination of the cervical mucus and the inflammatory assessment. The menothermal curve was obtained in 72% of the cases, the examination of the cervical mucus carried out in 64% of the cases and the inflammatory assessment carried out in 92% of the cases.

V. CONCLUSION

The infertility of the couple, of which the secondary type is the most frequent, is one of the causes of gynecological consultations in our environment whose socioeconomic precariousness, in the absence of a universal health coverage system, is a barrier to the achievement of full exploration of infertility cases desired. Therefore, an updated and more in-depth study is recommended.

Conflicts of interest

The authors declare no conflict of interest

Contributions from authors

All the authors contributed to the realization of this work; they read and approved the final version of the manuscript.

Table I. Distribution of patients by type of infertility.

Types	Frequency	Percentage
Primary	36	28
Secondary	89	72
Total	125	100

Table II. Distribution of patients by age and type of infertility.

Age (years)	Primary Sterility Frequency	Secondary sterility frequency
	NOT(%)	NOT (%)
18-22	1 (2.78)	2 (2.25)
23-27	7 (19.44)	16 (17.98)
28-32	16 (44.44)	42 (47.19)
33-37	8 (22.22)	18 (20.22)
38-42	3 (8.33)	9 (10.11)
43-47	11 (2.78)	2 (2.25)
Total	36 (100)	89 (100)

Table III. Distribution of patients by level of education and type of infertility.

Educational level	Infertility frequency 1st NOT(%)	Frequency of 2nd sterility NOT(%)
Primary	9 (25.00)	20 (22.47)
Secondary	18 (50.00)	41 (46.07)
University	8 (22.22)	24 (26.97)
Not educated	1 (2.78)	4 (4.49)
Total	36 (100.00)	89 (100.00)

Table IV : Distribution of patients according to the explorations carried out

Explorations carried out	Workforce (n = 125)	percentage
Hysterosalpingography	25	20.00
Ultrasound	33	26.40
Basal temperature curve	25	20.00
Cervical mucus	25	20.00
Inflammatory assessment	23	18.40

Table V : Distribution of patients according to paraclinical results

Exploration results	Workforce	percentage
Hysterosalpingography	n = 25	
- Tubal obstruction	10	40.00
-Salpingitis	15	60.00
Ultrasound	n = 33	
-Tubo -ovarian abscess	3	9.09
-Ovarian cysts	9	27.27
-Uterine myomas	10	30.30
-Normal	11	33.33
Basal temperature curve	n = 25	
- Monophasic plot	14	56.00
-Trace biphasic	11	44.00
Cervical mucus	n = 25	
-Positive test (crystallization + filance)	9	36.00
- Negative test	16	64.00
Inflammatory assessment	n = 23	
- Hyperleukocytosis + increased VS	20	86.96
-Normo leukocytosis + normal VS	3	13.04

Table VI : **R**ISTRIBUTION patients according to the balance associated with the type of infertility

	Sterility		p
	Primary not (%)	Secondary not (%)	
Exploration results			
Hysterosalpingography	n = 2	n = 23	
- Tubal obstruction	0 (0.00 / 0.00)	10 (100.0 / 43.48)	0.23
-Salpingitis	2 (13.33 / 100)	13 (86.67 / 56.52)	
Ultrasound	n = 14	n = 19	
-Tubo -ovarian abscess	1 (33.33 / 7.14)	2 (66.66 / 10.52)	0.93
-Ovarian cysts	3 (33.33 / 21.42)	6 (66.66 / 31.57)	
-Uterine myomas	4 (40.00 / 28.57)	6 (60.00 / 31.57)	
-Normal	6 (54.54 / 42.85)	5 (45.45 / 26.31)	
Basal temperature curve	n = 11	n = 14	
- Monophasic plot	8 (66.66 / 72.73)	4 (33.33 / 28.57)	0.07
-Bi-phasic plot	3 (37.50 / 27.27)	10 (76.92 / 71.43)	
Cervical mucus	n = 13	n = 12	
-Positive test (crystallization + filance)	3 (50.00 / 23.08)	3 (50.00 / 25)	0.01
- Negative test	10 (52.63 / 76.92)	9 (47.36 / 75.0)	
Inflammatory assessment	n = 10	n = 13	
- Hyperleukocytosis + increased VS	8 (40.00 / 80.00)	12 (60.00 / 92.3)	0.38
- Normoleukocytosis + normal VS	2 (66.67 / 20.00)	1 (33.33 / 7.23)	

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