Uterine Leiomyoma in Kinshasa, the Capital of the Democratic Republic of Congo

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Abstract

The aim of the present study was to determine the particularities of Uterine Leiomyomas among Congolese in Kinshasa the capital of the Democratic Republic of Congo (DRC) in the present conditions of medical practices. A sample of 644 patients with uterine leiomyoma were selected from 6440 cases of uterine leiomyoma among 30395 patients treated in gynecology units of three medical institutions of Kinshasa (University hospital of Kinshasa, Saint joseph hospital and Edith medical center) from January I[st] ,2003 to December 31,2012. The study is a descriptive one. The following variables were taken account: medical history [age, age at menarche, parity, education, civil state, history of UL, symptoms and body mass index (BMI)]; lifestyle (smoking, alcohol intake); ultrasounds characteristics; hysteroslpingographies characteristics, treatment, and direct cost of treatment. Statistical analysis were performed using Excel 12.0 software. Demographic, clinical, ultrasound, hysterosalpingography and treatment data were evaluated using descriptive statistics: mean, standard deviation (SD), and percentage (%) as appropriate. The frequency of uterine leiomyoma was 21, 18%. That one concern mainly patients at 35 years old or more [49, 6% (35-44years), ≥45years (20, 6%)], singles (70, 4%), null parous (59,4%), having a high level of study (university: 54, 6%), history of UL (56, 7%), and alcohol intake (75, 5%). Hemorrhage (33, 2%) and pelvic pain (31, 6%) are the most frequent expression of those tumors. The most of those patients have excess weight (43, 1%) or obesity (46, 5%). The majority of uterine leiomyoma was corporeal (82, 9%) intramuscular (42, 4%) and their number didn't overtake five by patient (70, 8%) in majority of cases. Majoration of the uterine cavity (46, 5%) and Fallopian tubes obstructions (30, 6%) are the most frequent abnormalities in hysterosalpingography. Myomectomy is the main treatment (65, 2%). The mean of direct cost were 803$ USA and 884$ USA for myomectomy and hysterectomy respectively.

Keys Words: Uterine Leiomyoma -Particularities- Democratic Republic of Congo.

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1. Introduction

The uterine leiomyoma (**UL**) is the most frequent genital tumor to women in reproductive age [1, 2, 3]. He is more frequent in black than white [4, 5, 6] and represents an important public health problem according to his incidence, prevalence, morbidity and cost of his management [7, 8].

In the Democratic Republic of Congo (DRC) the characteristics of UL have been explored many years ago when ultrasound was not used commonly as one of diagnosis methods [9, 10].

The objective of this paper is to evaluate the particularities of UL in the DRC regarding the present conditions of medical practices.

2. Materials and Methods

The study protocol was approved by the Ethical Committee of Kinshasa School of Public Health. University of Kinshasa (ESP/CE/028/2013).

6440 patients with UL have been collected in three medical institutions (University of Kinshasa hospital, Saint Joseph hospital and Edith medical center) of Kinshasa the capital of the DRC among 30395 patients who have been treated in the gynecology units from January 01, 2003 to December 31, 2012. A sample of 644 patients as been selected by random from those patients for the study.

The study is a descriptive one. Her objective was to determine the actuals particularities of UL among Congolese women in Kinshasa.

The following variables were taken account: medical history [age, age at menarche, parity, education, civil state, history of UL, symptoms and body mass index (BMI)]; lifestyle (smoking, alcohol intake); ultrasounds characteristics; hysterosalpingographies characteristics, treatment, and direct cost of treatment.

Statistical analyses were performed using Excel 12.0 software. Demographic, clinical, ultrasound, hysterosalpingography and treatment data were evaluated using descriptive statistics: mean, standard deviation (SD), and percentage (%) as appropriate.

3. Results

Table I: Frequency of uterine leiomyoma

$$F = 6440 / 30394 .100 = \mathbf{21, 18 \%}$$

The table below show that the majority of patients have 35 years old or more [49, 6% (35-44years), ≥45years (20, 6%)], have had their menarche at 12 year or late (71, 8%), have none parity (null parous) (59,4%) or more (multiparous) (40,6%), have reached university (54, 6%) and are single (70, 4%). History of UL (56, 7%), and alcohol intake are the main characteristics of their medical history.

Hemorrhage (33, 2%) and pelvic pain (31, 6%) are the most frequent expression their tumor. The most of those patients have excess weight (43, 1%) or obesity (46, 5%).

Table II: Demographic, and clinical characteristics of patients

VARIABLES	n	%
Age (years)		
≤ 24	10	1,5
25-34	182	28,2
35-44	320	49,6
≥45	132	20,4
Age at menarche (years)		
<12	182	28,2
≥12	462	71,8
Parity		
0	262	59,4
≥1	382	40,6
Education		
Primary or less	146	22,6
Secondary	146	22,6
University	352	54,6
Civil State		
Married	191	29,6
Single	453	70,4
UL History		
Not	278	43,1
Yes	366	56,9
Alcohol Intake		
Not	158	24,5
Yes	486	75,5
Smoking		
Not	616	95,6
Yes	28	4,4
Symptoms		
Hemorrhage	214	33,2
Pelvic Pain	110	17,0
Infertility	204	31,6
Others	96	14,9
BMI		
Normal	66	10,2
Excess Weight	278	43,1
Obesity	300	46,5

From the table III the majority of uterine leiomyoma was corporeal (82, 9%), intramuscular (42, 4%) and their number didn't overtake five by patient in the most of cases (70, 8%).

Table III: Ultrasounds characteristics of uterine leiomyomas

Ultrasounds characteristics	N	%
Localisation/ uterine subdivisions		
Corporeal		
Isthme	534	82,9
Cervix	84	13,0
	26	4,0
Localisation/thickness		
Sub sessorial	100	15,5
Intra mural	274	42,4
Sub mucosal	192	29,8
Intra cavity	78	12,1
Number		
≤5	456	70,8
≥6-≤10	102	15,8
≥11	66	10,2

Table IV: Hysterosalpingographies characteristics of uterine leiomyomas

Hystersalpingographies characteristics	N	%
uterines images		
normal	332	51,5
majoration of cavity	300	46,5
two cavities	4	0,6
synechies	8	1,2
tubes abnormalities		
normal	408	63,3
obstruction	196	30,4
hydrosalpinx	26	4,0
phimosis	14	2,1

The table IV show that majoration of the uterine cavity (46, 5%) and Fallopians tubes obstructions (30, 6%) are the more frequent hysterosalpingographies abnormalities of uterine leiomyoma observed among patients in that study.

Table V: Treatment

Treatement	N	%
medical	52	8,0
Myomectomy	420	65,2
Hysterectomy	172	26,7

The table V shows that myomectomy is the main treatment of UL (65, 2%).

Table VI: Direct cost of treatment

Medical institution	Direct cost of myomectomy	Direct cost of hysterectomy
university hospital	750$ usa	850$ usa
Saint joseph hospital	360$ usa	452$ usa
Edith medical center	1300$ usa	1350$ usa
Mean	**803$usa**	**884$usa**

The table VI show that the mean of direct cost of uterine leiomyoma are 803$ USA for myomectomy and 884$ USA for hysterectomy.

4. Discussion

The present study shows that the frequency of UL is 21, 18%. Althout that high level that result is comparable to those others much Africans countries [11, 12]. On contrary of Africans countries the frequencies of UL in Europeans countries are less [13, 14]. Those observations support the opinion which consider that UL is the tumor of black women. The most of patients with UL have 35 years old or more. That result join the fact of advanced age and increasing age are two parameters which are always correlated with the rising of UL frequency. For explaining that phenomenon Rongieres & al [15], and Adama & al [16] think that by growing up, UL become symptomatics toward 40 years old and their diagnosis easiest. Majority of patients are nullparous (59,4%). That result is an argument which support the fact of a reverse relation exists between increasing of parity and occurring of UL. For many authors that relation can be understood by hormonal and no hormonal change of deliveries. Among others the reduction of number of menses cycles, the regression of the level of estrogen and progesterone, and the increasing of sex binding globulin (SBG) [17, 18]. The presence of history of UL to much patients suggest the rule of heredity in the pathogenesis of UL. Alcohol intake, excess weight and obesity are others factors which are more found to patients in that study. Those results join many others results [19, 20] and can be explained by tumor genesis action of acetaldehyde providering from the metabolism of ethanol [21] and the contribution of lipid metabolism in the production of estrogen [22]. Hemorrhage and pelvic pain as the main expression of UL is not an exception for the study [23, 24]. The most frequent localization of Uterines leiomyomas was the corporeal one (82, 9%) as for Algeria women [25]. Fallopian tubes obstructions appear as the main abnormality of UL in hysterosalpingography. That result join others studies which demonstrated that fallopian obstructions is the commonest pathology found on HSG in women presenting infertility in Kinshasa (DRC) and Kampala (UGANDA) [26, 27].

Even if hysterectomy is the final treatment of UL [28, 29], the main surgical treatment is myomectomy in the present study. We think that that result can be understood according to the high need of maternity which characterize African area.

The mean of direct cost of UL are 8O3$ USA and 884$ USA for myomectomy and hysterectomy respectively. Cravello & al [30], in France estimated direct cost to 4600FF for surgical hysteroscopy and to 7900 FF for vaginal hysterectomy. Soliman & al. [31] estimated between 11.717 and 25.023 $ USA all expenses of UL management by patient in USA. Cardoso & al. [32] evaluated expenses of UL between 5, 9-34, 4 billion $ USA by year in USA. The comparison of those cost evaluations suggest that the treatment of UL is less expensive in our area. But by taking account of level of life of the population, UL stay also an important problem of public health in DRC according to the cost of treatment.

5. Conclusion

The present study show that the frequency of UL is 21, 18%. The patients concerned are essentially those one of 35 years old and more, null parous, singles having a high level of education, a history of UL, alcohol intake and body mass index over than the normal ranch. The majority of uterine leiomyoma are corporeal, intramuscular and their number didn't overtake five by patient in majority of cases. Majoration of the uterine cavity and Fallopian tubes obstructions are the most frequent abnormalities in hysterosalpingography. Hemorrhage and pelvic pain are the most frequent expression of those tumors. Myomectomy is the main surgical treatment. The direct cost is important for a third world country as DRC: 803$ USA and 884$USA for hysterectomy respectively.

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6. Appendix: author contributions

PIERRE INGALA, participate in protocol elaboration, data collection and analysis and draft the manuscript

FRANCOIS LEPIRA, participate in protocol elaboration, conception and data analysis reviewed the manuscript.

SERGE MUHINDO, participate in protocol elaboration, data collection and analysis and draft the manuscript.

ARSNE MPUTU, conceived the study, participate in data analysis and reviewed manuscript.