

Uterine Leiomyofibroma in the Gynecological Pathology of the Emergency County Clinical Hospital Saint Andrew the Apostle Constanta

Cezar Laurențiu Tomescu

“Ovidius” University of Constanta, Faculty of Medicine,
County Clinical Emergency Hospital
“Sf. Ap. Andrei”, Constanta, Romania

Ana-Maria Brezeanu

“Ovidius” University of Constanta, Faculty of Medicine,
County Clinical Emergency Hospital
“Sf. Ap. Andrei”, Constanta, Romania

Dragoș-Marian Brezeanu

“Ovidius” University of Constanta, Faculty of Medicine,
County Clinical Emergency Hospital
“Sf. Ap. Andrei”, Constanta, Romania

Aneta Tomescu

County Clinical Emergency Hospital
“Sf. Ap. Andrei”, Constanta, Romania

Cadar Emin

“Ovidius” University of Constanta, Faculty of
Pharmacy, Constanta, Romania

Abstract

Benign pelvic-abdominal tumor formations are an important part of female pelvic pathology. Uterine fibroids occupy an important place in gynecological benign pathology, among pelvic-abdominal tumors, A retrospective study was performed for a period of 5 years (2015-2019) on a number of 1505 patients admitted to the Clinical Emergency Hospital St. Andrew the Apostle Constanta, on the two departments of Obstetrics-Gynecology OG I and OG II. The patients were followed according to the following criteria: age, origin, symptoms, and the type of surgery performed.

Keywords: Uterine Fibroid, Fractional Biopsy Curettage, Hysterectomy, Hysteroscopy, Laparoscopy, Myomectomy

Introduction

Leiomyomas are benign smooth muscle tumors originating in the myometrium (Hoffman et. al., 2015).

Incidence: 20-25 % (Cramer et. al., 1990). Currently, by using histological and ultrasound criteria, studies demonstrate their presence in approximately 70-80% of women (Day Baird et. al., 2003). Risk factors: older age, nulliparity, early menarche, overweight, polycystic ovary syndrome, and race (African- American women) (Day Baird et. al., 2003), (Wise et. al., 2007), (Ishikawa et. al., 2009).

Protective factors: combined oral contraceptives, smoking, teenage girls, women who give birth at a young age or with increased parity, Asian or Hispanic women (Parazzini et. al., 1992), (Michnovicz et al., 1986). The European Society of Hysteroscopy divides submucosal leiomyomas into: type 0 - tumor located entirely in the uterine cavity, type I - tumor located less than 50% in the myometrium, type II - more than 50% of the tumor in the myometrium (Wamsteker et. al., 1993).

In rare cases, the symptomatology may involve **myomatous erythrocytosis syndrome** which is due to the increased secretion of renin by the fibromatous nodule or pseudo-Meigs syndrome, manifested by ascites and even hydrothorax. Both pathologies remit after hysterectomy (Vlasveld et. al., 2008), (Yokoyama et. al., 2003).

The diagnosis of uterine fibroids is clinical and paraclinical through abdominal or transvaginal ultrasound, ultrasonography and hysterosalpingography, hysteroscopy and Nuclear Magnetic Resonance (De Kroon et. al., 2004), (Fleischer et. al., 2003). Currently, in the case of asymptomatic leiomyomas, the main option is their monitoring (Stovall et. al., 1994). Since most leiomyomas develop during menopause, drug treatment is recommended to improve symptoms until the onset of menopause (Hoffman et. al., 2015).



Figure 2. Subtotal hysterectomy for a giant myoma developed in the cervix [Personal Collection]

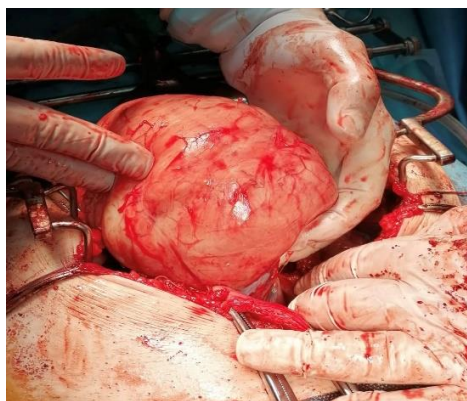


Figure 2. Giant myoma developed in the cervix [Personal Collection]

Drug therapy includes, non-steroidal anti-inflammatory drugs (NSAIDs), androgenic therapy, Gn-Rh agonists, Gn-Rh antagonists, combined oral contraceptives, progestogens, and antiprogesterones (Hoffman et. al., 2015). In the treatment of symptomatic leiomyomas, uterine artery embolization and focused ultrasound therapy under Magnetic Resonance Imaging guidance (MRgFUS) can be performed. The surgical treatment of leiomyomas consists in hysterectomy, which may be performed laparoscopically, abdominally, or vaginally. For patients who wish to preserve fertility a myomectomy can be performed (Whiteman et. al., 2008).

Other possibilities of treatment are laparoscopic or hysteroscopic myomectomy, endometrial ablation, laser vaporization or cryotherapy (Agdi et. al., 2008), (Levy et. al., 2008).

Experimental methods that produce occlusion of the uterine artery or in the application of temporary clips to the level of the uterine arteries have also been used with important success (Hald et. al., 2009), (Holub et. al., 2008), (Vilos et. al., 2010), (Sharp, 2006).

Material and method

The present study was aimed to analyze the incidence of uterine leiomyofibroma in the County Emergency Clinical Hospital "Sfântul Apostol Andrei" Constanța within the Obstetrics-Gynecology I and II departments.

The study was a retrospective one, over a period of 5 years, between 01.01.2015 and 31.12.2019, and the data were collected from the observation sheets and from the operative protocols of the two departments. Between 01.01.2015 and 31.12.2019, a total number of 10,602 patients were admitted to the Obstetrics-Gynecology I and Obstetrics-Gynecology II departments. The total number of patients included in the study was 1505, all of whom presented to the hospital for symptoms mainly related to the symptoms of uterine leiomyoma.

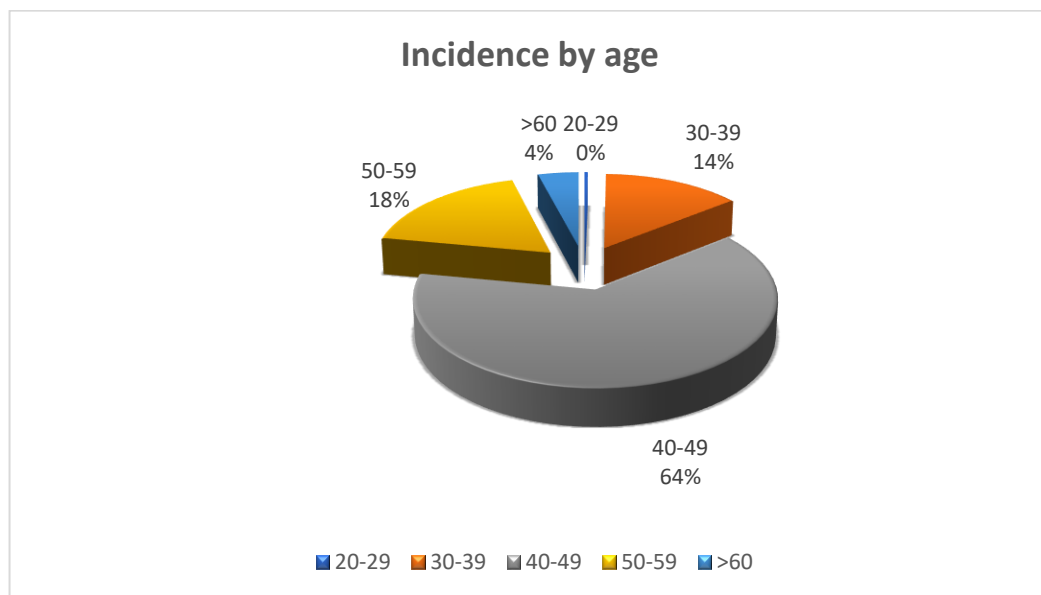
The incidence of uterine leiomyoma in the period presented was **14.19%** of all hospitalizations in the two departments of Obstetrics-Gynecology. Out of 10602 patients, 1505 were diagnosed with uterine leiomyoma.

a) Distribution of the studied group by age groups

The studied over the five years was classified into age groups between 20 and 60 years old.

Table 1. Distribution of the studied group by age

Age	Number of Patients	Incidence
20-29	5	0,33%
30-39	211	14%
40-49	957	63,58%
50-59	270	17,94%
>60	62	4,11%
Total	1505	100%



Graphic 1. Distribution of the studied group by age

It can be seen from the graphic analysis above that the highest incidence of symptoms related to uterine leiomyoma is in **the 40-49 age group**, most of the time, in this age

period overlapping both the associated symptoms leiomyoma and that associated with perimenopause.

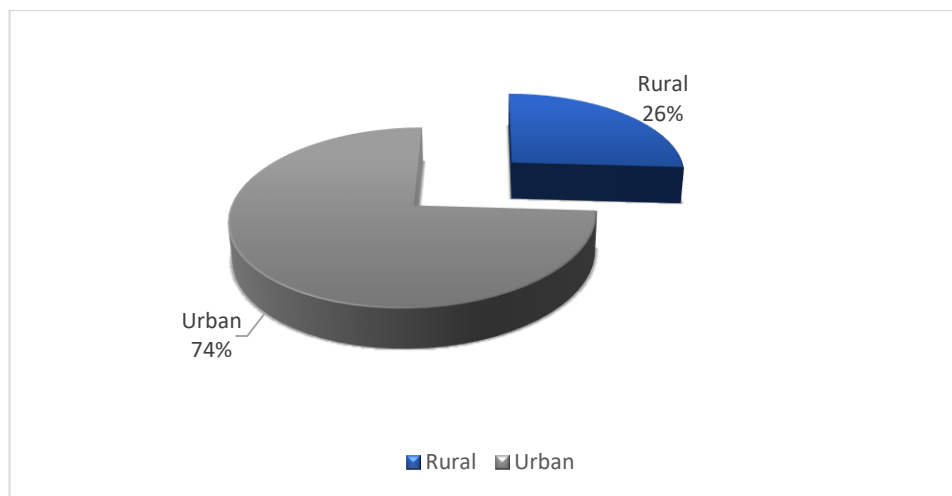
b) Distribution of the studied batch by provenance environment

The studied batch of patients was divided into rural and urban environments.

Table 2. Distribution of the studied group by provenance environment

	Frequency	Procent
Rural	390	26%
Urban	1115	74%
Total	1505	100%

Both from the table 2 above and from the graphic 2 representation, a higher incidence of leiomyofibroma can be observed in the urban population. Urban population incidence is 74%, compared to the rural population, which is only 26% of cases.



Graphic 2. Distribution of the studied group by provenance environment

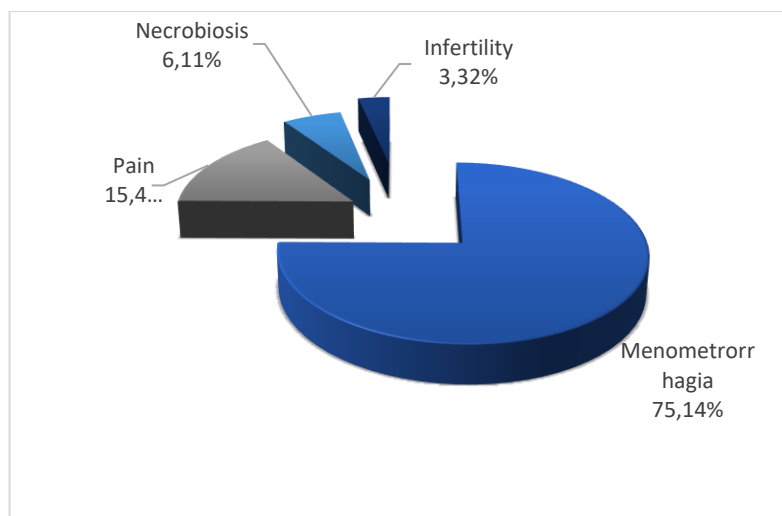
These results can be explained by the low parity in the urban environment compared to the one in the rural environment and also by the low addressability of rural women to the gynecologist compared to urban women.

c) Distribution according to symptoms

The most common reason women presented to the Emergency Department was vaginal bleeding.

Table 3. Distribution of the studied group by symptoms

Main Symptom	Number	Incidence
Menometrorrhagia	1131	75,14%
Compression	232	15,41%
Septic Necrobiotic	92	6,11%
Sterility/ Infertility	50	3,32%
Total	1505	100%



Graphic 3. Distribution of the studied group by symptoms

About 75% of women with leiomyoma experienced abnormal bleeding, followed by those with abdominal symptoms related to compression of surrounding organs, which accounted for 15%. Bleeding can occur both in the context of leiomyoma and because of perimenopause but most of the time the two overlap. Bleeding is often profuse and can lead to severe anemia.

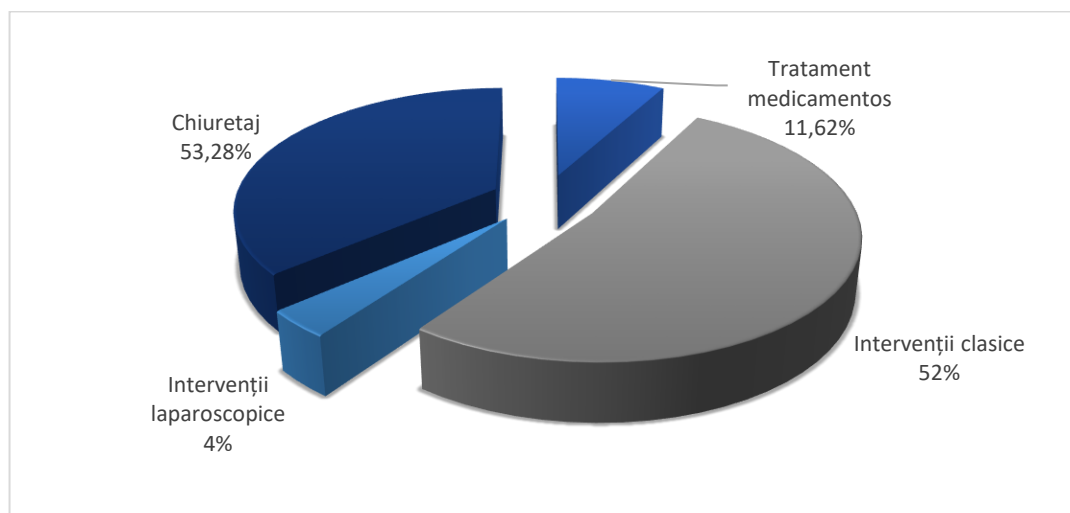
d) Distribution of the studied batch according to the type of surgical intervention performed

After we analyzed the observation sheets and operative protocols, we found that of the 1505 patients hospitalized with the diagnosis of leiomyofibroma, during the years 2015-2019, 528 of them underwent surgical intervention and 802 benefited by a hemostatic uterine curettage and biopsy. Among the 528 patients that had surgical intervention, 361 underwent radical intervention (total hysterectomy) via the abdominal route and 62 via the laparoscopic route. Subtotal hysterectomies by the abdominal way were performed to 41 patients and 2 subtotal hysterectomies using

the laparoscopy. There were also 17 vaginal hysterectomies and 45 uterus-conserving interventions- myomectomies.

Table 4. Distribution of the studied group by intervention type

Medical Treatment	Surgical Intervention 528 (35.08%)							Curettage with biopsy
	Laparoscopy			Abdominal intervention				
	Total HT	Subtotal HT	Miomec tomy	Total HT	Subtotal HT	Miomec tomy	Vaginal HT	
175 (11,62%)	62 11.74%	2 0.13%	15 2,84%	361 68.37%	41 7,76%	30 5,68%	17 3.21%	802 (53,28%)



Graphic 4. Distribution of the studied group by intervention type

Discussions

Benign uterine pathology occupies a very well-defined place in gynecological practice, given its increasing incidence. The incidence of uterine leiomyoma in the Emergency County Clinical Hospital "Saint Andrew the Apostle" Constanta was 14.19%.

Out of 10602 patients, 1505 were diagnosed with uterine leiomyoma. In terms of age, most of the patients in the studied group belong to the 40-49 years old category, which represents a percentage of 63.58%, followed by the patients located in the 50-59 years old age category with a percentage of 17.94%. Specialized studies have shown a maximum incidence in the 45-50 age group (Marshall et. al., 1997), (Wise et. al., 2016).

The patients from the studied group who came from the urban environment were more numerous, respectively, 1115 patients, which represents 74% of all patients, from this fact a better medical education and a greater addressability to the gynecologist emerges. Data collected from the literature also demonstrated the same increased prevalence of patients from the urban environment, compared to the patients from the rural environment (Wise et. al., 2016), (Parazzini et. al., 1988).

The most common reason for presenting to the emergency room was represented by abnormal vaginal bleeding. That beeinf said, 75.14% of the patients of the studied group presented to the emergency department for appreciable vaginal bleeding, which decreases the quality of life with severe anemia and urgent need for transfusion. Studies have also shown vaginal bleeding as the main reason for presentation to the Emergency Department (Wegienka et. al., 2003), (Schwartz et. al., 2000).

Conclusions

Preferred surgical intervention in the Emergency Clinical Hospital " Saint Andrew the Apostle " Constanta was total abdominal hysterectomy 361, with a percentage of 68.37% of all surgical interventions, followed by laparoscopic hysterectomy 62 cases, with a percentage of 11.74% and 41 cases of subtotal hysterectomy by abdominal way, respectively 7.76% of all cases.

For patients with special obstetric conditions, especially nulliparous patients, conservative therapy was chosen, 45 cases benefiting of a myomectomy, performed laparoscopically or abdominally, which amounts to 8.52% of all interventions surgeries performed.

However, the Cochrane Meta-analyses demonstrated a better post-operative recovery in the case of patients who opted for laparoscopic intervention, followed by vaginal interventions and, as a last resort, abdominal hysterectomy was reserved for private cases (Nieboer et. al., 2009).

Unfortunately, laparoscopic interventions require qualified personnel and expensive equipment, which are not easily found in all hospital units in the Romanian health system.

References

- [1] Hoffman L.B., Schorge J.O., Scaffer J.I., Halvorson L.M., Bradshaw K.D., Cunningham F.G., Calver L.E., Vlădăreanu R., Williams Ginecologie, ediția a doua, McGrawHill, Hipocrate, București, 2015, pag. 247-250 ISBN 978-973-88372-5-6
- [2] Cramer SF, Patel A: The frequency of uterine leiomyomas. Am J Clin Pathol 94 (4):435, 1990

- [3] Day Baird D., Dunson DB., Hill MC, et al: High cumulative incidence of uterine leiomyoma in black and white women: ultrasound evidence. *Am J Obstet Gynecol* 188(1):100,2003
- [4] Wise LA, Palmer JR, Stewart EA, et al: Polycystic ovary syndrome and risk of uterine leiomyomata. *Fertil Steril* 87(5):1108, 2007
- [5] Ishikawa H, Reierstad S, Demura M, et al: High aromatase expression in uterine leiomyoma tissue of African-American women. *J Clin Endocrinol Metab* 94(5):1752, 2009
- [6] Parazzini F, Negri E, La Vecchia C, et al: Oral Contraceptive use and risk of uterine fibroids. *Obstet Gynecol* 79(3):430, 1992
- [7] Michnovicz JJ, Hershcopf RJ, Naganuma H, et al: Increased 2-hydroxylation of estradiol as a possible mechanism for the anti-estrogenic effect of cigarette smoking. *N Engl J Med* 315(21):1305, 1986
- [8] Wamsteker K, Emanuel MH, de Kruif JH: Transcervical hysteroscopic resection of submucous fibroids for abnormal uterine bleeding: results regarding the degree of intramural extension. *Obstet Gynecol* 82(5):736, 1993
- [9] Vlasveld L.T., de Witt C.W., Vermeij R.A. et al: Myomatous Erythrocytosis syndrome: further proof for the pathogenic role of erythropoietin, *Neth J. Med.* 66(7):283, 2008
- [10] Yokoyama Y., Shinora A., Hirokawa M. et al, Erythrocytosis due to an erythropoietin- producing large uterine leiomyoma, *Gynecol. Obstet. Invest.* 56(4):179, 2003
- [11] De Kroon CD, Louwe LA, Trimbos JB, et al: The clinical value of 3-dimensional saline infusion sonography in addition to 2-dimensional saline infusion sonography in women with abnormal uterine bleeding: work in progress. *J Ultrasound Med* 23(11):1433, 2004
- [12] Fleischer AC, Shappell HW: Color Doppler sonohysterography of endometrial polyps and submucosal fibroids. *J Ultrasound Med* 22(6):601, 2003
- [13] Stovall TG, Summit RL Jr, Washburn SA, et al: Gonadotropin-releasing hormone agonist use before hysterectomy. *Am J Obstet Gynecol* 170(6):1744; 1994
- [14] Whiteman MK, Hillis SD, Jamieson DJ, et al: Inpatient hysterectomy surveillance in the United States, 2000-2004. *Am J Obstet Gynecol* 198(1):34. el, 2008
- [15] Agdi M, Tulandi T: Endoscopic management of uterine fibroids. *Best Pract Res Clin Obstet Gynaecol* 22(4):707, 2008
- [16] Levy BS: Modern management of uterine fibroids. *Acta Obstet Gynaecol Scand* 87(8):812, 2008
- [17] Hald K, Noreng HJ, Istre O, et al: Uterine artery embolization versus laparoscopic occlusion of uterine arteries for leiomyomas: long-term results of a randomized comparative trial. *J Vasc Interv Radio* 20(10):1303, 2009
- [18] Holub Z, Mara M, Kuzel D, et al: Pregnancy outcomes after uterine artery occlusion: prospective multicentric study. *Fertil Steril* 90(5):1886, 2008

- [19] Vilos GA, Vilos EC, Abu-Rafea B, et al: Transvaginal Doppler-guided uterine artery occlusion for the treatment of symptomatic fibroids: summary results from two pilot studies. *J Obstet Gynaecol Can* 32(2):149, 2010
- [20] Sharp HT: Assessment of new technology in the treatment of idiopathic menorrhagia and uterine leiomyomata. *Obstet Gynecol* 108(4):990, 2006.
- [21] Marshall LM, et al. Variation in the incidence of uterine leiomyoma among premenopausal women by age and race. *Obstet Gynecol.* 1997;90(6):967–973.
- [22] Wise L.A., Laughlin-Tommaso S.K, Epidemiology of Uterine Fibroids- From Menarche to Menopause, *Clin Obstet Gynecol*, Mar, 59(1):2-24, 2016.
- [23] Parazzini F, et al. Epidemiologic characteristics of women with uterine fibroids: a case-control study. *Obstet Gynecol.* 1988;72(6):853–857.
- [24] Wegienka G, Baird DD, Hertz-Picciotto I, Harlow SD, Steege JF, Hill MC, Schectman JM, Hartmann KE. Self-reported heavy bleeding associated with uterine leiomyomata. *Obstet Gynecol.* 2003 Mar;101(3):431-7. doi: 10.1016/s0029-7844(02)03121-6. PMID: 12636944.
- [25] Schwartz SM, Marshall LM, Baird DD. Epidemiologic contributions to understanding the etiology of uterine leiomyomata. *Environ Health Perspect.* 2000 Oct;108 Suppl 5:821-7. doi: 10.1289/ehp.00108s5821. PMID: 11035989
- [26] Nieboer TE, Johnson N, Lethaby A, et al. . Surgical approach to hysterectomy for benign gynaecological disease. *Cochrane Database Syst Rev.* 2009;(3):CD003677