

Epidemiological profile of hysterectomy cases in a Tertiary University Hospital

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ABSTRACT

INTRODUCTION: Hysterectomy is the second most common surgical procedure in women of reproductive age, surpassed only by cesarean section. It is a surgical treatment of partial or total removal of the uterus, indicated for several uterine framework diseases. It is an irreversible surgery, with changes in body integrity and implications for female sexual identity. **MATERIAL AND METHODS:** This research is a descriptive, comparative and cross-sectional study, based on secondary data, collected from histological reports and medical records of women undergoing total hysterectomy at the Hospital Universitário Professor Alberto Antunes (HUPAA), Maceió- AL, in the historical series from 2009 to 2018, to describe the clinical-epidemiological profile of patients who underwent a hysterectomy, to assess the trend of surgical indications adopted. **RESULTS:** The 41-50 year old age group corresponded to 43.8% of patients who underwent a hysterectomy. Uterine leiomyomatosis represented 60.3% of the indications. Symptoms related to menstrual changes were the main ones mentioned. A pelvic ultrasound, considered the gold standard for diagnosing these leiomyomas, was the most widely used complementary exam. **CONCLUSION:** The data collected, in general, are in line with the available literature. However, there are still cases in which a better investigation is needed for the correct indication of hysterectomy.

Keywords: Hysterectomy, Epidemiology, Surgical Procedures, Gynecologic.

INTRODUCTION

Hysterectomy is the second most frequently performed surgical procedure in women of reproductive age, surpassed only by cesarean section. Approximately 20 to 30% of women undergo this operation until the sixth decade of life. It is a surgery indicated to treat several diseases that affect the uterine framework, which four different routes can be performed: the abdominal route by laparotomy, the vaginal route, the laparoscopic abdominal route and robot-assisted surgery. The choice of route will depend on the pathology to be treated, the general condition of the patient, and the experience of the assistant surgeon, which can sometimes be a limiting factor. It is practiced to relieve symptoms and improve the quality of life of the patient woman. It is indicated when the clinical picture resulting from uterine problems, such as excessive bleeding or pain, does not respond to

drug treatment. There are absolute and relative conditions for the indication of hysterectomy¹⁻⁴.

The most common indications for hysterectomy are uterine leiomyomas, pelvic organ prolapse, pelvic pain or infection (eg, endometriosis, pelvic inflammatory disease), abnormal uterine bleeding, and malignant/premalignant disease. Although hysterectomy is the treatment for most gynecological malignancies, the main amount related to this procedure addresses benign gynecological diseases⁵.

As with any surgical procedure, it involves possible complications, whether pre- or postoperative, which can be categorized as infectious, venous thromboembolic, injury to the genitourinary and gastrointestinal tract, bleeding, nerve damage, and dehiscence of the surgical site. The infectious implications are the most common and include, above all, cellulitis of the vaginal cuff, hematoma or pelvic abscess, wound infection, urinary tract infection, respiratory infection, and febrile morbidity⁶.

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In addition to the emotional aspects, there are also anatomical changes in the pelvis, which can lead to changes in the size and/or shape of Organs genital organs, difficulty in vaginal penetration, dyspareunia, interruption of the anatomical supports of the sexual response, lowering of the sexual impulse and the degree attractiveness due to the reduction of circulating hormonal levels, resulting from circulatory changes, ultimately causing sexual dysfunction. Authors report that hysterectomy can cause shortening of the vagina, decreased libido, and less frequency of orgasms after penetration⁷.

Among the surgical procedures, hysterectomy is the surgery with the largest number of indications, so it is necessary to establish guidelines that support medical practice, avoiding errors in the removal of anatomical pieces without due criteria and the attempt of therapeutic means alternatives. In addition, the improvement of techniques, such as laparoscopic and hysteroscopic procedures, endometrial ablation devices, progestin-based intrauterine devices, uterine artery embolization, and assisted robot surgery, tend to replace hysterectomy in several cases that were previously treated radically, and may therefore reduce the indications for such surgery^{8,9}.

MATERIAL AND METHODS

This is a descriptive, comparative and cross-sectional study, carried out based on secondary data, collected from histological reports of women who underwent a hysterectomy, from 2009 to 2018, at the Professor Alberto Antunes University Hospital (HUPAA), in the city from Maceió, Alagoas.

The variables considered in the study in view of the availability of data were: age; medical record number; place of residence; clinical symptoms; complementary exams; indications of the surgical procedure; post-surgical histopathological diagnosis; the weight and size of the surgical specimen.

Data collection was carried out through a survey, from the period between 2009 and 2018,

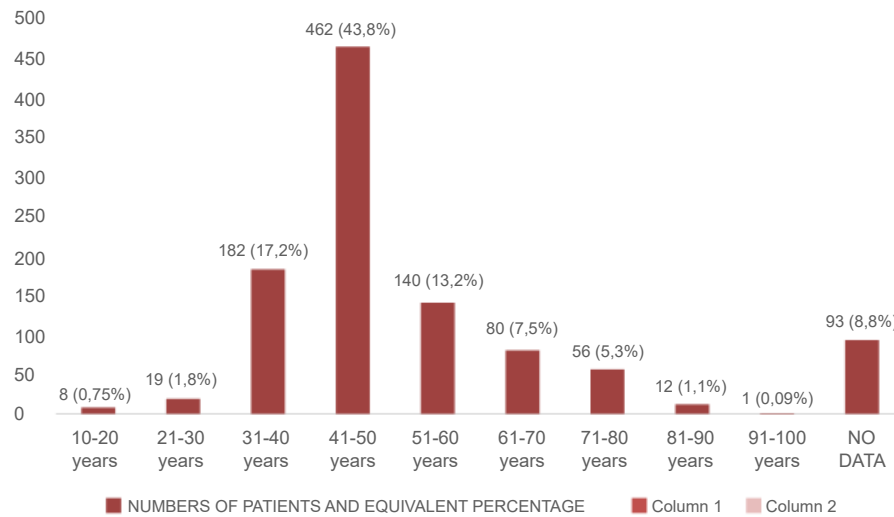
of the files obtained in the Pathology Sector of HUPAA / UFAL, of patients with a history of total hysterectomy, in the Gynecology sector of HUPAA. These being collected: post-surgical histopathological diagnosis, personal data - age and medical record number, the weight and size of the surgical specimen (length, width and thickness). Data on place of residence, indications of the surgical procedure, clinical symptoms and complementary exams performed were accessed through these documents. These data were then tabulated in Microsoft Excel, and tables were prepared.

RESULTS AND DISCUSSION

A total of 1053 medical records from the Pathological Anatomy sector were analyzed, of patients who underwent a total hysterectomy at the HUPAA, in the historical series from 2009 to 2018. The lack of uniformity in the records or even the poverty in the reports on, for example, the socioeconomic aspects of the patients, surgical indication and complementary exams was a challenge, but a lot of information could be extracted.

It was observed that women were 14 to 93 years old, making up 43.8% of the 41-50 year old age group. No age records were found in 93 files. In this selection of patients, it was found that their majority origin was Maceió (48.81%), followed by Rio Largo (2.37%). Messias, Pilar, Atalaia and União dos Palmares totaled 2.56%. About 37.89% of the medical records, however, did not have the "place of origin" item filled out. In addition, the data "race/color" was rarely found, making it challenging to outline the epidemiological profile of these patients.

Among the various diagnostic indications/hypotheses listed, the most frequent was uterine leiomyomatosis, representing 60.3% of cases; followed by uterine prolapse (10.7%). In general, ovarian pathologies comprised 7.5%, with malignant etiology being responsible for 4.2% of cases. The majority of endometrial hyperplasia (3.7%) was reported to be secondary to breast cancer treatment. In addition, forty medical records did not indicate surgery.

**Graph 1**

Age distribution of patients who underwent total hysterectomy at HUPAA - Maceió, AL, in the historical series from 2009 to 2018.

Source: Medical records of the Pathological Anatomy sector of the Professor Alberto Antunes University Hospital (HUPAA) - Maceió, AL. Graph prepared by the author.

Table 1

Main indications for total hysterectomy at HUPAA - Maceió, AL, in the historical series from 2009 to 2018.

INDICATION	NUMBER OF PATIENTS	PERCENTAGE
UTERINE FIBROIDS	635	60,3%
UTERINE PROLAPSE	113	10,7%
ENDOMETRIAL POLYPE	52	4,9%
MALIGNANT OVARIAN PATHOLOGIES	45	4,2%
ENDOMETRIAL HYPERPLASIA	40	3,7%
BENIGN OVARIAN PATHOLOGIES	34	3,2%
CERVICAL NEOPLASM	30	2,8%
ADENOMYOSIS	19	1,8%
UTERINE ATONIA	15	1,4%
ENDOMETRIOSIS	12	1,1%
ENDOMETRIAL ADERNOCARCINOMA	12	1,1%
CYSTOCEL	6	0,56%
NO INDICATION	40	3,7%
TOTAL	1053	100%

Source: Medical records of the Pathological Anatomy sector of the Professor Alberto Antunes University Hospital (HUPAA) - Maceió, AL. Table prepared by the author.

In this context, it is important to mention the performance of hysterectomy in younger patients. It is worth highlighting the importance of puerperal hysterectomy in such a situation.

A 3-year retrospective study analyzing risk factors associated with this surgery concluded that most patients (42.8 percent) were between 30 and 34 years old, and that the number of previous

deliveries seems to be the most important risk factor for the procedure. The high incidence of cesarean sections in Brazil has probably led to an increase in puerperal hysterectomy¹⁰.

It is noted that the main primary indications for the removal of the uterus, in the present study, reflect the most prevalent pathologies that affect it. According to Oliveira and Ferraz¹¹, among the benign uterine diseases that most affect women, leiomyomas, endometriosis, uterine prolapse stand out. Among malignant ones, cervical cancer and endometrial cancer stand out, being the latter most prevalent in postmenopausal women or those without access to medical services.

Uterine leiomyoma represents the most frequent benign tumor of the female genital tract (95% of all cases), affecting between 20 and 40% of women during reproductive life. It is estimated that 70% of women have uterine fibroids that are not perceived because they are often asymptomatic. When it comes to presenting related clinical manifestations, most women are in the fourth or fifth decade of life, as evidenced in the current study¹²⁻¹⁴.

Literature data point to uterine leiomyomatosis as the main indication for hysterectomy. Some studies, however, show hysterectomy as a solution for patients with leiomyomas, however asymptomatic. It is worth remembering that women often had the desire to preserve their uteri⁴. Hysterectomy eliminates symptoms and the chance of future problems. For women with complete offspring, significant symptoms, multiple fibroids and desire for definitive treatment, it is the recommended treatment. It has been shown to reduce symptom intensity, depression and anxiety and improve quality of life¹³.

It is important to consider these factors concerning women when deciding on the conduct to prevent mainly the inadvertent removal of the uterus in a woman with potential and reproductive desire and to the physical and emotional impact that this may cause. After all, there are conservative treatment options such as drug therapy, and it is also possible to perform myomectomy or embolization of the uterine artery.

Among the genital dystopias mentioned in the medical records, emphasis should be given to grade

III uterine prolapse, which was indicated as a surgical indication in 10.7% of cases. All of these women were already in the climacteric. In these cases, the purpose of surgical correction is to restore anatomy, relieve symptoms and correct functional changes in the pelvic organs. In women of reproductive age who wish to become pregnant, conservative surgery is indicated, preserving the uterus. In all others, radical surgeries are recommended^{14,15}.

As for endometrial polyps, listed as a surgical indication, most of them, if associated with other factors (symptomatology, comorbidities) that justify the indication, is, according to Dias et al.¹⁶, focal neoformations of the basal layer of the endometrium that affects between 7.8 and 34.9% of women, depending on the method used and the population studied. They form a sessile or pedunculated projection on the surface of the endometrium. Most of them are benign, but malignancy may occur in some women, and are considered structural causes for the occurrence of abnormal uterine bleeding, especially in the postmenopause, when they are responsible for 21 to 28% of all causes of uterine bleeding during this period, configuring a relevant condition for the differential diagnosis of endometrial neoplasia.

Hysteroscopic polypectomy is indicated as an effective and safe option for diagnosis and treatment of endometrial polyps causing abnormal uterine bleeding, with rapid recovery and early return to activities. However, in the impossibility of performing polypectomy or no desire to preserve fertility, hysterectomy is indicated for the control of abnormal uterine bleeding¹⁷.

Uterine atony, in turn, was responsible for 1.4% of the indications for a total hysterectomy, being patients in the postpartum period at HUPAA. Postpartum hemorrhage is a major cause of maternal mortality, along with preeclampsia and infection¹⁸. The conservative approach to postpartum hemorrhage due to uterine atony, according to Ramilo et al.¹⁸, would include uterine massage, administration of uterotonic drugs (oxytocin, misoprostol, sulprostone), uterine tamponade with an intrauterine balloon and surgical procedures such as uterine compression sutures; If the problem persists, hysterectomy becomes relevant as a last-line treatment of postpartum hemorrhage of uterine origin.

The evaluation of choice for the surgical conduct taken in the cases seen in the present research becomes a task somewhat hampered by the fact that there is little auxiliary information in the medical records of the pathological anatomy sector of patients.

It is also important to highlight the relationship between the diagnostic hypotheses formulated that justified the indication of the surgical procedure and the histopathological diagnosis, obtained through the analysis of the pieces. A total of 46 hysterectomies performed disagreed with the indication with the result of the histopathological examination. Of these, in 12 medical records, with ages varying from 36 to 73 years, the surgical indication was justified by the presence of uterine fibroids, however, no changes compatible with the indication were found in the

histopathological study. In other cases, despite the hypothesis of: ovarian tumor, endometrial hyperplasia (in 2 patients), adenomyosis, endometrioma and ovarian cystadenoma, there were also no changes in histopathological exams compatible with the suspicion. Three hysterectomies performed in patients aged 36, 39 and 52 years, with the indication of uterine neoplasia, the histopathological finding obtained was uterine leiomyoma.

The preoperative exams that were performed and cited in medical records, during the diagnostic investigation period, are: Pelvic Ultrasound, Pelvis Computed Tomography, Dosage of the marker CA 125, Semiotic curettage and Diagnostic Hysteroscopy. Many of the medical records did not contain this auxiliary information. Table 3 illustrates the distribution of the tests performed.

Table 2

Distribution of preoperative exams performed on patients undergoing Hysterectomy at HUPAA - Maceió, AL, in the historical series from 2009 to 2018.

YEAR	PELVIC ULTRA-SONOGRAPHY	DOSING CA125	SEMIOTIC CURETING	DIAGNOSTIC HISTEROSCOPY	COMPUTED TOMOGRAPHY	MAGNETIC RESONANCE
2009	28	1	0	0	0	0
2010	19	1	0	0	0	0
2011	8	0	3	1	0	0
2012	3	1	0	0	0	0
2013	2	0	0	0	0	0
2014	6	0	0	0	0	0
2015	15	1	0	0	0	0
2016	7	2	0	0	1	0
2017	3	0	0	0	0	0
2018	17	3	0	0	1	3
TOTAL	108	9	3	2	2	3
VALUE (%)	85	7	2,3	1,5	1,5	2,3

Source: Medical records of the Pathological Anatomy sector of the Professor Alberto Antunes University Hospital (HUPAA) - Maceió, AL. Table prepared by the author.

The analysis of the table allows affirming that the most performed exam in the preoperative of the patients was the Pelvic Ultrasound, being mentioned in 10% of the total of analyzed medical records. When relating the preoperative exams with the diagnostic hypotheses, it is observed that, in 95 patients, Pelvic Ultrasound was performed in the suspected diagnosis of uterine leiomyomatosis and,

in seven patients, in the suspicion of an endometrial polyp. The measurement of the marker CA 125 was performed mainly in the hypothesis of an ovarian tumor (in 7 medical records). Semiotic curettage was performed in three patients when faced with the hypothesis of endometrial hyperplasia. Diagnostic hysteroscopy was performed in two patients whose diagnostic hypothesis was an endometrial polyp.

Computed tomography of the female pelvis was performed on a suspected ovarian cyst and another patient on suspicion of endometrial hyperplasia. Magnetic resonance imaging of the female pelvis was performed in two patients with a diagnostic hypothesis of uterine leiomyomatosis and one of cervical neoplasia.

Transvaginal ultrasound, associated, if necessary, with the abdominal route, is the gold standard for the diagnosis of uterine fibroids. The exam has high sensitivity (95 to 100%), is non-invasive, low risk, with good accuracy and low cost. Another exam that can assist in the investigation of very large uteri or with multiple leiomyomas is magnetic resonance imaging (MRI), which helps inform the number of these tumors, size and location, and help in the differential diagnosis between leiomyoma, adenomyosis and adenomyoma and leiomyosarcomas¹³.

Regarding hysteroscopy, although it can be performed without anesthesia, some patients require local anesthesia and others require general anesthesia. Studies comparing hysteroscopy with transvaginal ultrasound and with hysterosonography demonstrate similar results. Computed Tomography (CT), while offering complete visualization of the female pelvis, including non-gynecological structures, has low resolution to assess the internal architecture of the pelvis organs, with transvaginal ultrasound being preferable¹⁹.

In cases of abnormal uterine bleeding (SUA) without systemic repercussions, identifying the cause of the bleeding is essential before starting treatment. Considering the main diagnoses of this clinical manifestation, the presence of vaginal and cervical lesions must be ruled out by means of physical examination and the presence of pregnancy should be excluded. Then, the evaluation of the uterine cavity by imaging exams should be performed to identify organic lesions in the endometrial cavity.²⁰ The radiological study helps not only in diagnosis, but also in the best surgical schedule. Despite the structural cause of SUA being the main clinical manifestation correlated to the hysterectomies performed, in only 12.06% of the medical records analyzed, the image examination was described.

Concerning symptoms, of the 1053 records analyzed, only 196 brought such information.

Of these, 124 were related to the diagnostic hypothesis of uterine leiomyomatosis, the main surgical indication found in the research. The main symptoms referring to the existence of mentioned leiomyomas were mentioned as: metrorrhagia (79%), metrorrhagia associated with pelvic pain (14.5%), metrorrhagia associated with dysmenorrhea (2.4%), pelvic pain (3.2%) and metrorrhagia associated with menometrorrhagia (0.8%).

Although most of these tumors are asymptomatic, symptoms, when present, are related to the number, size and location of these structures. The main clinic involves menstrual changes (increased or prolonged uterine bleeding), iron deficiency anemia, symptoms due to volume (pain and compression of pelvic structures, obstructive symptoms) and reproductive dysfunction. Uterine bleeding from leiomyomatosis is characterized by menorrhagia and hypermenorrhagia (prolonged and excessive menstrual bleeding). Anteriorly located leiomyomas can compress the bladder and cause urinary urgency. Acute pain can hardly occur due to degeneration or twisting of the stalk of a tumor¹³.

As for the volume of surgical pieces, 55 medical records did not present conclusive data. 373 of the 998 medical records valid in this regard had a uterus with volume within normal limits, considering, according to Mauad¹⁹, the normal range of 25 to 180 cm³ in menacme and 20 to 70 cm³ in menopause. Six of the patients had a uterus with a volume below these limits, and were over 50 years old, including 3 of them who were over 70 years old.

As for the weight of surgical pieces, 219 medical records did not contain data. The 854 medical records with valid data in this regard allowed us to infer that 161 surgical pieces (18%) were of uterus with weight within the normal limits, taking into account, according to Platt²¹, the approximate weight of 60 g in nulliparous women, 109 g in primiparous women and 108 g in multiparous women. 75 surgical pieces (8.7%) represented uteri below these borderline values, with more than 90% of these pieces with lower weights being from patients over 50 years of age. The other medical records had enlarged uteri, consistent with the leading cause of hysterectomies studied in the research.

The uterine dimensions analysis denotes the natural evolution of uterine conformation, which

changes under the hormonal influence of puberty and parity, reaches its maximum diameters in the menacme phase, and atrophy with menopause²¹.

Finally, regarding the presence of attachments in hysterectomy, only 219 records reported this. Considering the structures of the female reproductive system, there was the presence of one ovary (34.2%), both ovaries (27.8%), ovary and uterine tube (11.8%), uterine tubes (8.6%), both ovaries and tubes (3.2%) and one of the uterine tubes (4.1%).

CONCLUSION

Despite the difficulties in standardizing data from medical records filled in manually by third parties, it was possible to infer that the results, in general, were in line with what the literature exposes. Uterine fibroids and their associated symptoms were the main surgical indication. Pelvic ultrasound proved to be the primary imaging method, and the volumes of the pieces tended to follow the conformities of the associated pathology/age. The main origin of the patients is added to the epidemiological design. Almost half of the hysterectomies performed at the service in question referred to patients from Maceió, considering that the University Hospital is a reference for the municipality.

However, the lack of information about the race/color of women and the natural history of their diseases compromises a more accurate assessment, since, to establish a coherent relationship between the diagnostic hypothesis and the surgical indication, it is essential to know in what conditions the patient was in.

It is worth mentioning that, in 20 medical records, there was no consonance between the surgical indication and the histopathological diagnosis, which, at first, refers to a controversial indication for surgery. However, the lack of data on the clinical status of patients makes it difficult to assess the subjective character of the medical indication for the procedure. In this context, the lack of more data about the patient and the interventions performed demonstrates the importance of complete filling of medical records and the need for medical education in this regard, since academic training.

Finally, in the context of the indications for hysterectomy, it is most necessary that, in the absence of an emergency, such as uterine hemorrhage, the decision on whether to perform the surgery should be made by the woman and her doctor. Correct elucidation about possible complications and treatments that can be performed in a primary way is essential.

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CONFLICT OF INTEREST STATEMENT

The authors declare that there are no conflicts of interest to declare.

AUTHORS' CONTRIBUTION

The authors' contribution occurred with the collection and survey of data, and bibliographic review for the construction of this material.

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