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THE PLACE OF PELVIC AND LOMBOAORTIC CURAGE IN ENDOMETRAL CANCER

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ABSTRACT

Materials and Methods: This is a retrospective study spanning a period of 04 years, from January 01, 2017 to December 31, 2020. Carried out on 45 cases of endometrial tumor having benefited from a lymph node dissection, both pelvic and lumbo-aortic, collected from the register of the Onco-gynecology department (CM6) at the Ibn Rochd University Hospital in Casablanca, and from computerized medical records of patients who were hospitalized in the department.

Results: In our study, the median age at diagnosis was 66.25 years (39-85 years). The delay median visit was 8.6 months (01-24 months). The main complaint presented by the patients were postmenopausal bleeding (90.7%). Biopsy curettage of the endometrium coupled with hysteroscopy was performed in all our patients and allowed us to ask the definitive diagnosis of endometrial cancer in 100% of cases. He objectified an ADK of type I in 36 patients (80%), ADK type II in 07 patients (15.56%), mixed ADK in one patient (2.22%) and large cell carcinoma in one patient (2.22%). The grade the most dominant histological was grade 2 (46.47%) followed by grade 1 (22.22%) and finally guard 3 (11.11%). The intraoperative FIGO staging is done by pelvic MRI, objectifying: stage I in 13 cases (28.89%), stage II in 07 cases (15.56%), stage III in 20 cases (44.44%) and stage IV in 05 cases (11.11%). She underestimated the FIGO stage in 15.56% of cases (n = 07) and overestimated the FIGO stage in 28.89% of cases (n = 13). There was a concordance in 55.56% of cases (n = 25). Lymph node involvement was present in 42.22% of cases (19 patients), with 63.2% sensitivity, 100% specificity, compared to histology data. On this, an ESMO prognostic classification was carried out: 08 patients (17.78%) had a risk of low, 04 patients (8.89%) had an intermediate risk and 33 patients (73.33%) had an high risk. Pathological analysis of the

hysterectomy piece with Pelvic and / or lumbar-aortic lymphadenectomies showed that nine patients had a FIGO 2018 stage IA endometrial cancer (20%), eleven had stage IB cancer (24.44%), ten had stage II cancer (22.22%), two had stage IIIA cancer (4.44%), two had stage IIIB cancer (4.44%), six had stage IIIC1 cancer (13.33%), two had stage IIIC2 cancer (4.44%), one had stage IVA cancer (2.22%) and two had stage IVB cancer (4.44%). The most frequently found histological type was endometrioid adenocarcinoma in 37 patients (82.22%), followed by serous adenocarcinoma papillary in 05 patients (11.11%) and carcinosarcoma in 02 patients (4.44%), one case clear cell adenocarcinoma was diagnosed (2.22%). Grade 1, 2 and 3 represented respectively 17.78% (08 patients), 44.44% (20 patients) and 37.78% (17 patients). Myometrium infiltration was more than 50% in 31 patients (68.89%), less than 50% of myometrium in 14 patients (31.11%). Cervical invasion was found in 17 patients (37.78%). Vascular emboli were present in 57.78% of cases (26 patients). The study peritoneal cytology was performed in 16 patients in our series and returned positive in a patient. Omentectomy was performed in 07 patients and tumor returned in one patient. Invasion of the right ovary was present in two patients in our series (4.44%). Metastatic nodes are identified on pelvic and / or lumbo-aortic dissection. It was positive in 12 patients (26.67%): right pelvic lymph node invasion in 04 patients (33.33%), left pelvic lymph node invasion in 05 patients (41.67%), invasion lumbar-aortic lymph node in 02 patients (16.67%) and a lymph node invasion of the Primary iliac bifurcation in one patient (8.33%). In our experience, 27 patients (60%) were referred after surgery for additional treatment in the oncology department (P40): eight patients (17.78%) received treatment combining external radiotherapy, vaginal chemotherapy and brachytherapy. One patient (2.22%) received treatment combining external radiotherapy, chemotherapy and hormone therapy. Five patients (11.11%) were treated with external beam radiotherapy and vaginal brachytherapy. A patient (2.22%) was treated with external beam radiation therapy and chemotherapy. Exclusive radiotherapy has was performed in one patient (2.22%), exclusive vaginal brachytherapy in five patients (11.11%) and exclusive chemotherapy in six patients (13.33%). At the time of the analysis of our data, postoperative complications were found in seven patients (15.56%), deglobulization, wall suppuration, deep vein thrombosis of the lower limb, and a urinary complication of the left frank ureterohydronephrosis type. In our series, 31 patients (68.89%) had a recurrence-free survival. However, 14 patients had locoregional recurrences and distant metastases, ie 31.11% of cases. Overall survival was 95.55% (43 cases), two patients with metastatic relapse are deceased. **Conclusion:** The controversy over the indication and extension of lymphadenectomy and far from resolved,

hence the need for randomized studies. Waiting, the balance is between the probability of lymph node involvement and the risks of lymphadenectomy, the latter will be performed whenever there is a risk of damage lymph node associated with a low operative risk.

INTRODUCTION

Endometrial cancer is the most common gynecological cancer in industrialized countries, and the fourth in incidence after breast, colorectal and lung cancer.[1] More than 75% of patients are postmenopausal at the time of diagnosis and only 3% are under 40 years of age.[2] Among the risk factors for this cancer, we mainly distinguish prolonged hyperestrogenic climate, obesity, type II diabetes, hypertension, PCOS and treatment with tamoxifen.[2] Hereditary forms represent 2 to 5%.[3] Endometrial carcinoma is most usually revealed by postmenopausal bleeding, and in 75 to 80% of cases the tumor is diagnosed at an early stage (stage I or II). The positive diagnosis is based on hysteroscopy with biopsy endometrial curettage.[4] According to INCa (National Institute of cancer), the preoperative locoregional extension workup is based on pelvic MRI. This makes it possible to assess the degree of invasion of the myometrium and the cervical stroma. It thus occupies a decisive place in the planning of surgical management, making it possible to anticipate the need for lymph node dissection, the postoperative morbidity of which is severe, in patients often presenting multiple comorbidities.[5] The surgical standard is hysterectomy with bilateral adnexectomy. The latest INCa recommendations in 2010 require additional procedures (lymphadenectomy, omentectomy) depending on the clinical stage, histological type and grade.[6][7] These recommendations have radically changed our treatment. The benefit / risk balance of such surgery is poorly defined and the indications are far from harmonious.[8] The whole difficulty of the management is to determine before and / or during the surgical procedure this lymph node risk and thus to be able to carry out or not a pelvic and sometimes lumbo-aortic lymphadenectomy. The prognosis of endometrial cancers is related to the stage, depth of myometrial invasion, histologic grade and presence of metastatic lymph nodes.[9][10] In addition, the risk of lymph node metastases is correlated with the histological grade and the depth of myometrial infiltration.[11] If we adopt the strictest oncology formalism, it is therefore impossible to dispense with lymph node information. However, the diagnosis of lymph node invasion is histological, and therefore surgical. Indeed, although the size of the nodes is linked to histological invasion, more than half of the invaded nodes are smaller than 1 cm, and 29% of the uninjured nodes are larger than 1 cm.[12][13] Imagery therefore only has value if it is positive. The current management strategy for endometrial cancer is based on the

identification and combination of prognostic factors.

MATERIALS AND METHODS

I. OBJECTIVES OF THE STUDY : The aim of our work is to study: The epidemiological, clinical, radiological, pathological, therapeutic and evolutionary profile of endometrial cancers. Risk factors and frequency of lymph node involvement. The indications for lymph node dissection, both pelvic and lumboaortic, in the management of endometrial cancer. The modalities of the lymph node assessment. The therapeutic value of lymph node dissection and the benefit for survival. Surgical techniques for lymph node dissection in endometrial cancer.

II. MEANS: This is a retrospective study which spans a period of 04 years, from January 01, 2017 to December 31, 2020. Carried out on 45 cases of endometrial tumor having benefited from a lymph node dissection as much pelvic as lumbar aortic, collected from the register of the Onco-gynecology department (CM6) at the Ibn Rochd University Hospital in Casablanca, and from the computerized medical records of the patients, based on an operating sheet including the main necessary parameters to our study.

III. INCLUSION CRITERIA: All patients diagnosed with endometrial cancer by pathological confirmation, having undergone surgical treatment associated with lymph node dissection with or without adjuvant treatment (external radiotherapy, chemotherapy, vaginal brachytherapy and hormone therapy). All patients with a complete medical record.

IV. EXLUSION CRITERIA: The following were excluded from the study: Incomplete files, lacking data on fundamental variables, in particular the pathological results, the type of treatment performed and patient follow-up. Patients lost to follow-up on the day of admission or who have not started treatment. All patients in whom biopsy endometrial curettage indicated benign endometrial hyperplasia without signs of malignancy. Patients who did not have lymph node dissection alongside surgical treatment.

V. STUDY PARAMETERS: The data for this retrospective study were collected from the register of the Onco-gynecology department (CM6) of the Ibn Rochd University Hospital in Casablanca, and from the computerized medical records of the patients who were hospitalized in the department. For some patients, the data concerning the follow-up (date of the latest news, status at the latest news, the occurrence of locoregional or metastatic recurrences, and their management) were collected from the computerized database of the

oncology service. (P40) at the Ibn Rochd University Hospital in Casablanca: ENOV A system. An operating sheet was drawn up for each patient making it possible to collect and analyze the various clinical, paraclinical, therapeutic and evolutionary parameters.

VI. DATA ENTRY AND ANALYSIS: Statistical analysis of the data is performed by Excel software. Our study was descriptive and retrospective, the results of the quantitative variables were converted into means, and those of the qualitative variables into numbers and percentages. The correlation between pre and post-treatment data was studied by the chi-square test for the calculation of sensitivity (Se), specificity (Sp), positive predictive value (PPV), negative predictive value (NPV). and the one Kappa index (K), with a 95% confidence interval. A kappa index less than 0.20 was considered very weak agreement, between 0.21 and 0.40 as weak, between 0.41 and 0.60 as moderate, between 0.61 and 0.80 as strong and between 0.81 and 1.00 as almost perfect.

VII. ETHICAL CONSIDERATIONS: The study complied with the ethical recommendations of the Declaration of Helsinki. The data was collected anonymously.

VIII. METHODOLOGICAL LIMITATIONS: Like any retrospective study, the major difficulties we encountered were related to the exploration of medical files. Some data were missing, especially patient contact details, which made their post-treatment follow-up difficult or even impossible in some cases.

RESULTS

I-EPIDEMIOLOGICAL STUDY 1-Frequency: During our study period of 04 years between January 2017 and December 2020, 60 cases of endometrial cancer were hospitalized in the Onco-gynecology department (CM6) of the Ibn Rochd University Hospital in Casablanca. Our work targeted the patients who had received pelvic and lumboortic lymph node dissection in addition to a hysterectomy; there were 45 patients, or 75%. 2-Age of patients: The average age of our patients at the time of discovery of endometrial cancer was 66.25 years, with extreme ages ranging from 39 to 85 years. The age group between 60 and 69 years was the largest with a total of 20 cases identified, or 44.44% of cases, followed by that of 50 and 59 years with 11 cases, or 24.44%. In addition, 07 cases over 80 years were recorded or 15.56%, 04 cases between 70 and 79 years or 8.89%, 02 cases between 40 and 49 years and one case before 39 years.

3-Medical history a-Diabetes The association of endometrial cancer with diabetes was found in 17 patients in our series, ie 37.78%, mainly non-insulin dependent diabetes, four patients were on insulin. b-Arterial hypertension The association of endometrial cancer with arterial hypertension under treatment was found in 21 patients in our series, ie 46.67%. This was the most common medical history found. c-Obesity The association of endometrial cancer with obesity was found in 09 patients in our series, ie 20%. 4-History of other pathologies Other defects were sometimes associated such as the presence of heart disease under B-blocker in 4.44% of cases, rheumatic pathology (Gout) in 2.22% of cases, Hodgkin lymphoma under radiotherapy and chemotherapy in 2, 22%.

5-Association of tares ➢The association of diabetes and arterial hypertension was found in ten patients, ie 22.22%. ➢The association of diabetes, arterial hypertension and obesity was found in three patients, ie 6.67%. ➢The association of diabetes, arterial hypertension and heart disease was found in two patients, ie 4.44%. 6-Surgical history In our series, 19 patients underwent surgery, ie 42.22%. We report: eight cholecystectomy procedures, three appendectomies, four Pateys, one myomectomy, one ovarian cystectomy, two Bartholin cyst surgeries, two thyroidectomies, one cervical adenectomy, one cataract surgery, and one kidney stone extraction. However, 26 patients had no history of surgery, ie 57.78%. 7-Gyneco-obstetric history Age of menarche The average age of menarche was 12.97 years with extremes ranging from 12 years to 16 years. The peak was between 12 and 13 years old with a percentage of 78%. a- Type of menstrual cycle The menstrual cycle was regular in 43 patients or 95.56%, the other two had an irregular cycle. b- Parity The parity in our series varied between 0 and 10 pares with an average of 4.2 pares. Multiparity predominated with a frequency of 46.67% (21 patients). 14 patients were pauciparous or 31.11%, of which 6.67% were primiparous. There were 10 nulliparas, ie 22.22%, of which four patients were unmarried, and six had secondary sterility. c- Means of contraception Oral contraception was taken by six patients, ie 13.33%. The duration of the catch varied between 06 months and 05 years. The intrauterine device was used by one patient, ie 2.22% for one year. d- Menopausal status The majority of patients were postmenopausal 91.11% (41 cases) and four patients were in a period of genital activity, ie 8.89%. The duration of menopause at the time of diagnosis was greater than ten years in 26 patients, ie 63.41%, and less than or equal to ten years in 15 patients, ie 36.6%. Hormone replacement therapy for menopause was taken by two patients, ie 4.9%, with an average duration of seven years.

8-History of breast cancer Breast cancer was found in four patients, i.e. 8.89%, treated surgically with radiotherapy, chemotherapy and hormone therapy as treatment.

II. CLINICAL STUDY Consultation deadline In our study, the time between the start of symptoms and the consultation varied between 01 month and 02 years with an average of 8.6 months. Most patients consulted between 2 and 6 months or after 12 months. 1-Reason for consultation Metrorrhagia Metrorrhagia was the most frequent reason for consultation, encountered in 43 patients, ie 95.56%. They were isolated in 22 patients, ie 48.89%. Most were of low to moderate abundance, only one patient had heavy bleeding. Postmenopausal metrorrhagia were found in 39 patients, ie 90.7%, and metrorrhagia in 04 patients during a period of genital activity, ie 9.3%.

2-Abdomino-pelvic pain Abdomino-pelvic pain was often associated with metrorrhagia, found in 14 patients, ie 31.11%. However, one patient presented with isolated pelvic pain. 3-Leucorrhoea They are present in 11 patients or 24.44%, associated with bleeding and pelvic pain. They are prominently associated with acute pelvic pain in one case giving a picture of acute genital infection. 4-Abdomino-pelvic mass It was found in three patients, ie 6.67%, associated with other symptoms. 5-Accompanying signs Urinary symptoms such as pollakiuria and dysuria with digestive signs such as constipation were observed in two patients, ie 4.44%. 6-General condition The deterioration of the general condition made up of asthenia, anorexia and weight loss was seen in 04 patients, ie 8.89%. The rest of the patients were in good general condition at the consultation. 7-Fortuitous discovery We have not recorded any incidental findings on cervical cytology or on the basis of radiological examinations.

8-Clinical examination General examination A detailed general examination was performed on all of our patients. He objectified the following results: ➢A deterioration of the general condition was found in 04 patients, ie 8.89%. In addition, the other patients had general condition preserved with hemodynamic and respiratory stability. ➢ Digestive signs such as abdominal pain and constipation in one patient, ie 2.22%. ➢ Urinary signs such as dysuria and pollakiuria in one patient, ie 2.22%. ➢The body mass index objectified: - Underweight in 04 patients, i.e. 8.89% - A normal build in 19 patients, i.e. 42.22% - Overweight in 13 patients, i.e. 28.89% - Obesity in 09 patients, ie 20%. The general condition is assessed by the WHO scale which varies between 0 and 2, except for one patient who was bedridden (WHO

4): - 17 patients had a scale of 0 (WHO 0), or 37.8%. - 23 patients had a scale 1 (WHO 1), i.e. 51.2% - 4 patients had a scale 2 (WHO 2), or 8.9%. - One patient had a scale of 4 (WHO 4), or 2.22%. 9-Abdominal examination Abdominal palpation revealed abdominal distension associated with an abdomino-pelvic mass arriving at the umbilicus in 03 patients, ie 6.67% of cases. Pelvic tenderness was revealed in 14 patients, or 31.11% of cases. In the rest of the cases, 62.22%, the abdominal examination was unremarkable. 10-Gynecological examination The gynecological examination could not be carried out in 04 patients because they were virgins, our statistical studies were carried out on 41 patients in our series. - Inspection: Inspection of the vulva was normal in all patients. - Speculum examination: Demonstrated a normal looking cervix, clean vaginal walls and no endo-uterine bleeding in the majority of patients. The uterine cervix was aspirated in 10 patients, ie 24.4% of cases, only one patient had a bleeding cervix in contact. Endo-uterine bleeding was present in 07 patients, ie 17.07% of cases. One patient had yellowish leucorrhoea with the presence of necrotic material. In addition, two patients had an ulcerative budding tumor of the uterine cervix, i.e. 4.87% of cases, one one patient had an endocervical polyp and another had a budding tumor at the expense of the left lateral wall of the vaginal collar. - Vaginal touch + abdominal palpation: Objectified an increased uterus in 25 patients, ie 61% of cases, sensitive in 04 patients, ie 9.75%. A latero-uterine mass was found in 03 patients, ie 7.32%. The remainder had a normal-sized uterus with no palpable mass. In addition, the cervix was of normal consistency in most cases, two patients had an indurated cervix. - Rectal touch: Showed proximal parametrial invasion in 03 patients, ie 7.32%. The rest had free settings. - Lymph node examination A detailed examination of the lymph node areas was carried out in all our patients, and objectified bilateral inguinal lymphadenopathy in one patient. - Rest of the exam A detailed examination of the other devices was carried out in all of our patients looking for a locoregional and / or general extension. He objected to dullness of the blanks with pleural effusion syndrome in one patient.

II. PARACLINIC STUDY The role of imaging is to assess the locoregional extent of the tumor in order to estimate the risk of lymph node invasion preoperatively and to help plan the surgical procedure. MRI with injection and diffusion sequences is the gold standard in this indication.[13] In the current state of knowledge, no imaging modality can yet replace the pathological examination, which remains the gold standard.[15] I. GUIDANCE REPORT Pelvic and endovaginal ultrasound Ultrasound is the recommended first-line examination in exploring postmenopausal bleeding.[16] It begins with a suprapubic study so as not to

overlook a pelvic pathology with abdominal development. The endovaginal route is the exam of choice, to study the uterine cavity on the one hand, and the adjacent myometrium on the other. It also makes it possible to study the appendices.[17] Pelvic ultrasound is used to assess the thickness of the uterine lining, assess tumor size, exclude ovarian extension and assess myometrial and cervical infiltration. Ultrasound is therefore an important element in the preoperative evaluation of endometrial cancer.[17] Its sensitivity is excellent, in particular for low grade histological tumors. In case of deep invasion and / or high histological grade, the risk of ultrasound underestimation increases.[18] In the literature, the sensitivity, specificity, PPV and NPV of pelvic ultrasound in the detection of endometrial pathologies are variable.[19,20]

1-Doppler ultrasound Doppler coupled with ultrasound allows measurement of resistance and pulsatility indices of uterine arteries and analysis of endometrial vascularization.[21] Endometrial cancer is associated with hypervascularization or even endometrial and subendometrial neovascularization, with a decrease in the resistance index (RI) and the pulsatility index of the uterine artery, as well as a loss of the protodiastolic notch. Postmenopausal women with hyperplasia or cancer have a thickened endometrium and resistance and pulsatility indices of less than 0.9 and 2, respectively, compared to those with normal mucosa. In a hypertrophic endometrium, color Doppler can guide the diagnosis if it shows an intratumoral vascular signal. The type of signal could be predictive of neoplastic risk[22] 2- Hysterography Hysterography is the x-ray of the uterine and tubal cavities made opaque by injecting contrast media into the uterus. It can show an enlarged uterine cavity and especially direct signs: localized irregularity of the fundus or an edge, irregular gap in the fundus or a horn, intracavitary polyp with nibbled outlines, at most a heterogeneous appearance diffused throughout the cavity. This examination cannot assess myometrial extension.[23] The concordance of hysterography with hysteroscopy is 51 to 71%, compared to the operative and pathological results, their accuracy is respectively 50 and 86%.[24] In our series, no patient benefited from this examination.

3-Pap smear Pap smears may fail to recognize endometrial cancer in 30-40% of cases because endometrial cancer does not flake off very often. Their positivity usually indicates an already advanced cancer. It is therefore necessary to take the sample directly from the uterine cavity, its reliability varies from 80 to 90% depending on the material used.[25] Fukuda et al showed that the existence of suspicious or malignant cells in the cervical smear correlated

with stage, grade, myometrial invasion, cervical invasion, lymph node invasion and adnexal metastases.[26] The positive predictive value of cervical cytology for pelvic and / or aortic lymph node invasion varies between 20 and 45% versus 26 to 29% for the depth of myometrial invasion or a tumor grade 3. Cervical cytology with suspect or malignant cells would push the indication for lymphadenectomy without having to resort to sophisticated imaging, which is sometimes not available.[27,28,29,30] A patient with negative cervical cytology has a risk of pelvic or aortic lymph node invasion of 5 to 23%.[31,32,33,34] Overall, cervical cytology is easy and inexpensive to perform. It is especially interesting where quality imaging (MRI, ultrasound) is not possible. It has the advantage that it can be done at the same time as the endometrial biopsy. The presence of suspicious or positive cells in cervical cytology increases the likelihood of encountering an advanced and aggressive lesion. In addition to the local excision procedure, a precise abdominal and lymph node assessment is then necessary. In our series, it was performed in 42 patients, ie 93.33%, objectifying inflammatory and metaplastic type abnormalities in 15 patients, ie 36%. Completed by colposcopy with biopsy in nine patients, showing adenocarcinomas of probably endometrial origin.

II. CERTITUDE REPORT 1-Hysteroscopy: is the most reliable endocavity exploration technique, which can be performed on an outpatient basis or under general anesthesia. Hysteroscopic biopsy remains the gold standard for the positive diagnosis of endometrial cancer.[35] Visualization of a fractured, friable, anarchically thickened, budding and bleeding endometrial area on contact, or rarely a localized crateriform ulceration is strongly suggestive of neoplasia.[36,37] 2-Biopsy endometrial curettage: biopsy endometrial curettage allowed a positive diagnosis in 95% of cases, thanks to the histological study of the curettage product, specifying the histological type and the grade of the tumor, but it does not allow a good assessment of endometrial invasion.[38,39] In postmenopausal and premenopausal women, Pipelle sampling remains the best technique for the detection of endometrial carcinoma with detection rates of 99.6% and 91%, respectively.[40]

III. ASSESSMENT OF EXTENSION Although the final staging of endometrial cancer is postoperative, it is essential to have a preliminary assessment by imaging and biopsy. In fact, this preoperative evaluation makes it possible to perform surgery appropriate to the stage of the disease.[41]

1-Locoregional: pelvic MRI The role of MRI is not to make the diagnosis, but to perform the most accurate workup possible for histologically proven endometrial cancers. This is the only examination that simultaneously assesses myometrial, cervical and locoregional lymph node extension. A meta-analysis[42] comparing ultrasound, computed tomography and MRI including a T2-weighted study and a dynamic study during contrast injection showed the superiority of the latter for the pre-therapeutic evaluation of endometrial cancers. a-Myometrial invasion: The risk of lymph node involvement increases with the depth of myometrial infiltration.[43,44,45] Patients with endometrioid-type cancer with deep myometrial invasion have at least a 5% risk of developing lymph nodes.[46] b-Cervical invasion: ecognition of stage II is important because stromal invasion is associated with a higher risk of lymphatic emboli, lymph node metastases, and a poorer prognosis.[47]

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2-Remote Abdominal ultrasound It quite often allows a positive diagnosis of the ectopic extension of the tumor, to look for peritoneal, hepatic or lymph node metastases. It allows the diagnosis of iliac or lumbar aortic lymphadenopathy, but exploration can be difficult in cases of digestive interpositions or in obese patients. In our series, this imagery is found in the charts of 19 patients, revealing: ➢An abdomino-pelvic mass in 03 patients, or 15.8%. ➢A moderate abundance of ascites was found in 02 patients, ie 10.5%. ➢ Pelvic lymphadenopathy in 06 patients, ie 31.6%. ➢Ueterohydronephrosis in one patient, ie 5.3%.

➢A homogeneous hepatic steatosis in one patient, ie 5.3%. ➢No particularities in 06 patients, or 31.6%. 3-Chest x-ray: It is systematic to search for pathological images suggesting pulmonary metastases. It could be supplemented by a thoracic CT. Carried out in all of our patients not revealing any abnormalities. 4-CT-TAP: CT of the chest, abdomen and pelvis with injection of contrast medium is widely used preoperatively for the detection of lymph node metastases and the distant spread of endometrial cancer. The scanner is especially useful in the assessment of extension, in particular at the thoracic level, it is systematic for the type II.[49] For the assessment of local invasion, injected computed tomography has long been considered inferior to MRI and transvaginal ultrasound[50], due to poor soft tissue contrast resolution. The thoraco-abdomino-pelvic scanner remains an alternative technique in case of contraindication to pelvic MRI.[51] Abdomino-pelvic CT allows evaluation of lymph node involvement with a sensitivity of 75% greater than that of 55% MRI[52] and also allows evaluation of visceral involvement at a distance.[53] Computed tomography is also inferior to PET-Scan for the detection of pelvic and para-aortic lymph node metastases, with reported sensitivities for lymph node metastases of 29% and 57%, respectively.[54] In our series, we performed CT in patients with a high presumptive stage and / or with clinical signs of remote organ calling, which numbered 12 patients, i.e. in 26.67% of patients. case. It was effective in highlighting abdominal, thoracic and especially lymph node metastases.

Positron emission tomography is a new imaging modality in nuclear medicine, using a radioactive glucose analogue, fluorodesoxyglucose (FDG) as a radiopharmaceutical. Cancerous tissue consumes more glucose and becomes more radioactive than healthy tissue.[55] It has a key role in the evaluation of lymph node tumor invasion which conditions treatment and survival.[60] However, it is not an integral part of the initial assessment according to FIGO recommendations, it may nevertheless be useful for extension assessment in the initial assessment of stage ≥ II endometrial cancers. The sensitivity of PET / CT for the detection of lymph node extension is 70% versus 42% for MRI with a NPV of 96% versus 28.6% for MRI.[61] Positron emission tomography is a new imaging modality in nuclear medicine, using a radioactive glucose analogue, fluorodesoxyglucose (FDG) as a radiopharmaceutical. Cancerous tissue consumes more glucose and becomes more radioactive than healthy tissue.[62] It has a key role in the evaluation of lymph node tumor invasion which conditions treatment and survival.[63,64] However, it is not an integral part of the initial assessment according to FIGO recommendations, it may nevertheless be useful for

extension assessment in the initial assessment of stage ≥ II endometrial cancers. The sensitivity of PET / CT for the detection of lymph node extension is 70% versus 42% for MRI with a NPV of 96% versus 28.6% for MRI.[65]

5-Bone radiological assessment Including standard x-rays or a bone scan. In our series, a bone scan was requested as a progress assessment in two patients with signs of bone calls. She objected: ➢ A patient had humeral, sternal, rib and vertebral hyperfixation in favor of a II st location. ➢ A patient had pelvic hyperfixation in favor of a II st location. 6-Tumor markers: CA-125 Although the CA-125 assay may give an indication of the extent of the disease, it is only of value in positive cases.[66] The presence of an elevated level of CA-125 has been associated with an increased risk of ectopic invasion. There is a significant difference in rates depending on whether or not there is lymph node involvement, whether the tumor occupies more or less than half of the uterine cavity, and the depth of the lesions. Hsieh et al concluded that a level greater than 40 U / ml should result in a complete lymphadenectomy (sensitivity 77.8%, specificity 81.1%).[67]

IV. PRE-OPERATIVE STADIFICATION Magnetic resonance imaging (MRI) is the complementary pre-therapeutic examination that helps to stage cancer. It assesses myometrial infiltration, cervical wall and locoregional extension. The challenge of the preoperative assessment is to clearly define the ESMO group to which the patient belongs, which will define which patient benefits from having a pelvic dissection. Due to the good prognosis of the disease and the new classification of the European society for medical oncology (ESMO) and FIGO 2018, new recommendations (INCA) have been proposed.[68] The aim is to reduce morbidity and to offer therapeutic de-escalation. Three groups are determined: low risk, intermediate risk and high risk, with specific treatments, based on FIGO staging, histological grade, histological type and lymphatic emboli. ➢ Low risk: Endometrioid type / Stage IA grade 1-2 Treatment: HTSCA + no systematic lymph node dissection or radiotherapy. ➢ Intermediate risk: Endometrioid type / Stage IA grade 3 / Stage IB grade 1-2 Treatment: HTSCA + Sentinel node procedure + adjuvant treatment. ➢ High risk: Endometrioid type / Stage IB grade 3 / Stage ≥ II / Stage I with lymphatic emboli / Non-endometroid type. Treatment: HTSCA / ACHE + systematic lymph node dissection + adjuvant treatment In our series, the staging of intraoperative FIGO is done by pelvic MRI. It was performed in all of our patients, showing stage I in 13 cases in our series (28.89%), stage II in 07 cases (15.56%), stage III in 20 cases (44.44%).) and stage IV in 05 cases (11.11%).

THERAPEUTIC CONDUCT The therapeutic plan must be decided in a multidisciplinary consultation meeting.[4] In most cases, the management of endometrial cancers is based on performing primary surgery which serves as treatment and as a means of staging, and on individualizing the prognostic factors necessary to decide on the postoperative therapeutic strategy.[70]

I. SURGICAL TREATMENT The treatment of endometrial cancer remains primarily surgical. The latest recommendations from the National Cancer Institute and the French society of gynecological oncology for endometrial cancer in 2010 sought, on the one hand, to limit the side effects of treatment by the first choice of the route initially minimally invasive and by more targeted indications for pelvic lymphadenectomy and external radiotherapy and, on the other hand, to be more aggressive in cases at high risk of recurrence.[71]

THERAPEUTIC CONDUCT
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I. SURGICAL TREATMENT The treatment of endometrial cancer remains primarily surgical. The latest recommendations from the National Cancer Institute and the French society of gynecological oncology for endometrial cancer in 2010 sought, on the one hand, to limit the side effects of treatment by the first choice of the route initially minimally invasive and by more targeted indications for pelvic lymphadenectomy and external radiotherapy and, on the other hand, to be more aggressive in cases at high risk of recurrence.[71]

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limit the side effects of treatment by the first choice of the route initially minimally invasive and by more targeted indications for pelvic lymphadenectomy and external radiotherapy and, on the other hand, to be more aggressive in cases at high risk of recurrence.[71]

Look first The criteria for choosing the first route are: age for 56.4% of practitioners, body mass index (BMI) for 47.3%, comorbidities for 56.4%, history of laparotomy for 45.5% and stage for 61.8%.[72] In our series, the surgical approach performed in all of our patients was the abdominal approach by midline laparotomy. ➢ Laparotomy: Is the reference technique on which we have the most hindsight and experience. Laparotomy by vertical incision allows a complete assessment according to the recommendations of FIGO (188) and the performance of all the necessary procedures: pelvic and abdominal exploration, hysterectomy, pelvic and lumbo-aortic lymphadenectomy, even omentectomy, peritoneal cytology. It makes it possible to face unexpected situations (189). The rate of overall complications is 20% and serious complications (life threatening) 6%.[73] ➢ The exclusive vaginal route: It can allow hysterectomy (simple or enlarged) and adnexectomy. Peritoneal exploration is at best limited to part of the pelvis. Cytology is technically possible by culdotomy at the start of the procedure.[74]

This route never allows lymphadenectomies, neither pelvic nor, a fortiori, lumbar-aortic. Two other routes can be combined to perform lymphadenectomies: laparoscopy and the extra peritoneal route.[191] This route is mainly offered to patients selected according to: their early tumor stage, their obesity, their comorbidity (hypertension, cardiovascular disease, diabetes), their "inoperability" by the abdominal route, their age and by teams historically favoring this route.[75,76] ➢ The coelio-assisted vaginal route: The superiority of the coeliovaginal route is clearly demonstrated.[77] Its goal is to overcome the usual limitations of the vaginal route: exploration, adnexectomy, lymphadenectomies.[78] ➢ Laelioscopy: Laparoscopy has many surgical, medical and socioeconomic advantages. However, the technique has limitations and contraindications such as ectopic involvement, major lymph node involvement, a very large uterus and a large tumor that infiltrates the uterine muscle to the serosa.[79] Regarding lymph node dissection, the laparoscopic route reduces the risk of operative trauma and therefore the reduction of the risk of adhesion, at the cost of increased operating time, specific training, without reducing the quality of the sample. Postoperative morbidity also appears to be reduced.[80]

Surgical exploration She understands : ➢ An exploration of the peritoneum with systematic cytology. ➢ Exploration of the omentum with an omentectomy in case of suspicious lesions. In the absence of gross lesions, many authors recommend performing omentectomy in serous papillary forms.[81] ➢ Complete exploration of the pelvis and the abdominal cavity above and below mesocolic with search for lumbo-aortic and external iliac lymphadenopathy. ➢ The intraoperative assessment of uterine penetration: it allows to adapt the surgical procedure.[82] In our series, exploration of the entire abdominopelvic cavity was performed in all of our patients, and revealed the following: ➢A uterus increased in size in 30 patients, or 66.67%. ➢A polymyomatous uterus in 04 patients, or 8.89%. ➢A latero-uterine mass in 03 patients, ie 6.67%. ➢Ascites in 10 patients, or 22.22%. ➢Peritoneal carcinomatosis in 06 patients, ie 13.33%. ➢Significant adhesions in 27 patients, ie 60%. ➢ Invasion of the omentum in 07 patients, or 15.56%. ➢Pelvic shielding in 02 patients, i.e. 4.44%. ➢Hepatic damage in 02 patients, i.e. 4.44%. ➢Appendicitis in 02 patients, i.e. 4.44%. ➢The presence of a large external iliac lymphadenopathy in one patient, ie 2.22%.

Surgical gesture The surgical procedure usually consists of a total hysterectomy with bilateral salpingo-oophorectomy. Depending on the stage, histological type and grade, this intervention may be supplemented by resection of the parameters, of the upper third of the vagina, of the omentum (enlarged hysterectomy) as well as by lymph node dissection. The latter may be preceded by the creation of a sentinel node.[83] ➢ Hysterectomy: The hysterectomy must be total because the microscopic involvement of the cervix in stages I is 5 to 15%, and only the complete histological analysis of the uterine part and of the cervix can ensure complete resection of the tumor.[84] The indication for enlarged hysterectomy should, however, be discussed based on the medical history and postoperative radiotherapist treatment. Many classifications of hysterectomies have been proposed. The most common is that of Piver in 1974[85], but it is complex and not very reproducible. The classification of Querleu and Morrow in 2008 (208) is simpler, anatomical, and reproducible. In our series, 31 patients (68.89%) underwent HTSCA, and 14 patients (31.11%) underwent ACHE.

Tumor reduction: This technique includes a total hysterectomy without adnexal preservation, a digestive resection and a partial or total bladder resection. In 2006, Randall et al (209) demonstrated an improvement in the survival rate in patients with advanced endometrial adenocarcinoma who underwent optimal tumor reduction leaving only residual disease less

than 2 cm (86). In our series, two patients (4.44%) had advanced stage endometrial cancer with rectal and bladder invasion, and underwent partial resection with pathological study. ➢ Adnexal surgery: Complementary bilateral adnexectomy, often justified by the age of the patient, is imposed by the risk of ovarian involvement thus transforming stage I into stage III. It is therefore systematic due to the risk of ovarian extension (6%) and the hormone-dependent nature of the lesion.[87] Except stage IA grade 1 localized to the endometrium with adnexa and serosa negative on laparoscopy in women desiring conservative treatment (questionable). In our series, all patients underwent bilateral adnexectomy.

Ovarian preservation: Hysterectomy without oophorectomy has been proposed by several authors. In 2009, Lee et al, reported the results of a Korean GOG study of 175 cases of endometrial adenocarcinoma treated with conservative hysterectomy.[88] The authors noted seven recurrences, or 4%. None of these recurrences involved patients with a low-grade endometrioid lesion limited to the uterus. All patients with recurrence presented at least one of the following poor prognostic factors: non-endometrioid histology, extension to the contralateral appendix (patient with unilateral ovarian preservation), cervical or deep myometrial invasion.[89] Recurrence-free survival and five-year overall survival were 94.3% and 93.3%, respectively.[90] ➢ Colpectomy It is not necessary in patients who do not have gross vaginal involvement (214). In fact, Tamussino et al[91] found no microscopic vaginal invasion in 24 patients who had colpohysterectomy while they had no clinical vaginal invasion preoperatively. In our series, colpectomy was performed in 14 patients, i.e. 31.11%, who had tumor extension to the cervix confirmed by biopsy or suspected by MRI.

Omentectomy: Performing an omentectomy is logical in the event of adnexal involvement, peritoneal dissemination, palpable or visible lesion, type II non-endometrioid tumor. In other situations, the systematic performance of this gesture does not seem necessary in the current state of our knowledge.[92] In our series, omentectomy was performed in seven patients, or 15.56%. ➢ The peritoneal assessment and cytology: They were part of the FIGO 2018 classification. The abdomen is explored by a sample for peritoneal cytology at the very start of the procedure. The parietal and visceral serosa as well as the omentum are examined, with biopsy of any suspicious lesions.[93] This exploration may indicate an interiliac and aortic lymphadenectomy when there is ectopic involvement. It is all the more necessary in serous-papillary adenocarcinomas.[94] In our series, peritoneal cytology was performed in 16 patients (35.56%).

Other gestures: At the time of surgical exploration of the abdominopelvic cavity, other complementary procedures may be added, such as the removal of a latero-uterine mass, appendectomy. In our series, three patients underwent an ablation of 'a latero-uterine mass, and two patients underwent appendectomy.

II. GANGLIONARY CURAGE Lymph node status is an important prognostic factor as well as a major decision-making criterion for adjuvant treatment, making lymph node exploration essential.[95] The International Federation of Obstetrics and Gynecology (FIGO) recommends performing systematic pelvic and lumbo-aortic dissection in order to know the lymph node status. The French recommendations of Standards Options and Recommendations (SOR) dating from 2001 and, more recently, from the French Society of Gynecological Oncology (SFOG), published in 2008, recommend performing an initial systematic surgery. This should include peritoneal cytology, total hysterectomy with bilateral adnexectomy and bilateral pelvic lymphadenectomy. One of the theoretical advantages of lymphadenectomy is that it avoids the need for postoperative radiotherapy in patients who do not have lymph node metastases. Obviously, this is only possible if the number of lymph nodes removed is sufficient to confirm that there is no lymph node metastasis. Chan et al[96] have shown that the percentage of lymph node metastases that are identified increases with the number of lymph nodes that are removed. Removal of 20 to 25 lymph nodes increases the likelihood of being diagnosed with lymph node metastasis. If these lymph node number conditions are not met, this result cannot be relied upon to rule out postoperative radiotherapy.[97] The whole difficulty of the management is to determine before and / or during the surgical procedure this lymph node risk and thus to be able to carry out or not a pelvic and sometimes lumboaortic lymphadenectomy. In our series, lymph node dissection was performed in all of our patients. 100% of the patients underwent a pelvic dissection, and 44.44% of them had an associated lumbar-aortic dissection.

Pelvic lymph node dissection First way Pelvic lymphadenectomies can be performed by laparotomy or by laparoscopy. Either of these routes can be done through an extraperitoneal or transperitoneal approach. In our series, all pelvic lymphadenectomies were performed by midline laparotomy. ➢ Laparotomy: It was first proposed in 1898 by Wertheim[98], and the technique was then described more precisely by Taussing and Leveuf (225) (226). Since then, several authors have described an approach by extraperitoneal laparotomy, which would benefit from less morbidity.[99][100] In theory, the choice of the extra- or trans-peritoneal route

first should depend on the objective of the intervention and the adjuvant treatments offered in the management. Indeed, if radiotherapy is considered after the operation, the extraperitoneal route should be preferred, since the risk of postoperative adhesion is minimal.[98] In addition, several authors recognize that extraperitoneal laparotomy makes it easy to access the pelvis and the obturator space.[97] The transperitoneal approach remains the classic route for pelvic and para-aortic lymphadenectomy, provided that it is associated with organ resection surgery (in the case of purely diagnostic lymphadenectomy, less traumatic laparoscopy is probably the method of choice). Lymphadenectomy requires a midline supra- and sub-umbilical laparotomy approach if complete dissection including the sub-renal level is indicated. In the other cases (iliac or infra-mesenteric lymphadenectomy), transverse laparotomy with section of the rights is sufficient.[101] [102] Laparoscopy: The advantage of the laparoscopic route in terms of reducing operative trauma and therefore reducing the risk of adhesion has been demonstrated, at the cost of increased operating time, specific training, without reducing the quality of the sample. . Postoperative morbidity also appears to be reduced. To assess the effectiveness of pelvic dissection under laparoscopy, the GOG[103] conducted a study on 40 patients undergoing immediate laparotomy after pelvic dissection by laparoscopy: the authors conclude that, with regard to the number of lymph nodes removed, laparoscopic dissection was incomplete in 15% of cases (230). Chu et al conducted the same study on 38 patients, finding in 34 of them residual lymph nodes after laparoscopy followed by immediate laparotomy, with an average of 3.4 residual lymph nodes on the right (0-7) and 4, 2 left (0-9).[104] Surgical technique: The operator begins by examining the pelvis and the abdominal cavity as a whole, palpating the lymph node areas for suspicious lymphadenopathy, visceral or peritoneal metastases. Systematic peritoneal cytology precedes any dissection procedure. We describe the technique of the right pelvic dissection, the operator standing on the patient's left. The procedures are identical for the left side (apart from the section of the sigmoid-parietal and / or tubal adhesions before approaching the para-vesical fossa). To ensure proper exposure, the intestinal loops and sigmoid are pushed back beyond the promontory by using wall spreaders. The peritoneal approach should be wide and the resection limits should be identified before any dissection.[105] The operator should resect the lymph node bundle in a single block, avoiding splitting it up to avoid any spread of the tumor. Pelvic dissection should include removal of all external iliac chains, including nodes along the obturator nerve outside the external iliac vessels.[106]

The operator must then define the limits of his dissection by visualizing the following anatomical elements: Laterally: The external iliac vessels (outside) and the umbilical artery (inside). - Caudal end: The ilio-pubic branch of the pubis and Cooper's ligament. - In depth: The obturator nerve. - Cranial end: Common iliac bifurcation, hypogastric pedicle and ureter. Lumbo-aortic lymph node dissection First approach Lumbar aortic lymphadenectomies can be performed by laparotomy or by laparoscopy. Either of these routes can be done through an extraperitoneal or transperitoneal approach. In our series, all lumbo-aortic lymphadenectomies were performed by the midline laparotomic route. ➢ Laparotomy: The reference route is the median laparotomy, if not xipho-pubic, at least extended supra-umbilical.[107] Transverse laparotomy with section of the rights, if it has been performed far enough from the pubis, occasionally allows an aortic approach or failing that can be extended in "J". Median or lateral extra-peritoneal laparotomy, with detachment of the peritoneal sac and access to the large vessels, is an excellent solution when we want to reduce (or avoid encountering) the peritoneal adhesion sequelae, but it does not allow the cavity to be explored. abdominal, except when performing a peritoneal buttonhole at the end of the operation.[108] ➢ Coelioscopy The advantage of the endoscopic route, demonstrated experimentally by a randomized study is atrauma and reduction of the risk of adhesion, at the cost of increased operating time, specific training, but without reducing the quality of the sample. . Surgical technique In laparotomy, the surgeon finds it beneficial to position himself to the patient's right, but may also have to place himself between the patient's legs to work in the upper part of the dissection. Several peritoneal incisions are possible to approach the retroperitoneal space from the large cavity. - Direct transperitoneal approach: It consists of incising the posterior parietal peritoneum opposite the right common iliac artery then the aorta, under the root of the mesentery. - Approach by right colonic and duodenopancreatic detachment: Performed from top to bottom, it facilitates the exposure of the renal veins.

- Approaching the left infra-renal area: It is rarer, in gynecology, to approach the left infra-renal area by just the left colonic detachment. However, this approach can complement a direct transperitoneal approach deemed insufficient for the needs of access to the left renal vein. In laparoscopy, the left iliac approach is the most suitable, since it gives direct access to the left lateroaortic lymph node, the most abundant, and to the left renal pedicle, the superior landmark of the dissection.[109] It also allows access to the right side in front or behind the great vessels. The surgeon stands on the patient's left side. His helper will be next to him, the screen is opposite, that is, on the other side of the patient.[110] Preparation of the

extraperitoneal space is essential. The skin, subcutaneous cell tissue and fascia are incised in the left iliac fossa, medially and above the anterosuperior iliac spine over a length sufficient to admit the finger. This collapses the muscles, creeps forward into the peritoneum, and opens the space with a wide sweeping motion in the desired directions.

III. ADDITIONAL TREATMENT After surgery, new elements are available to offer adjuvant treatment: the final determination of the histological type, stage, grade, depth of myometrial invasion (MI), lymph node invasion and the presence or no peritumoral lymphatic emboli and their abundance.[111, 112] Only patients with micrometastatic disease can benefit from adjuvant therapy. The challenge is to anticipate a risk of locoregional or metastatic recurrence and to adapt potential therapeutic means.[113] In our series, 27 patients (60%) were referred after surgery for additional treatment in the oncology department (P40). Radiotherapy.

Is the standard postoperative treatment. Its main goal is to reduce locoregional recurrences. It can be given as external beam radiation therapy, vaginal brachytherapy, or a combination of the two.[114] The indications for radiotherapy depend on histologic findings, but also on the extent of lymph node staging, with recent integration of the sentinel node procedure to limit surgical morbidity.[115] External radiotherapy Locoregional treatment to cover the vaginal fundus and pelvic ganglion areas, or even lumbar-aorta in the event of a very advanced lesion.[116] It is performed in a very targeted manner and guided by CT imaging. The volume of irradiation depends on the tumor extension. It must be initiated less than 9 weeks after surgery, after this period, the risk of relapse is increased. The total dose is 45-50 Gy, with 5 weekly fractions of 1.8-2 Gy for 5 weeks.[117]

Brachytherapy The dose delivered varies according to the teams as a result of the chosen prescription depth and whether or not it is associated with pelvic irradiation. For example, the dose prescribed in addition to external radiotherapy is 10 Gy in two weekly fractions calculated at 5 mm thick, and 21 Gy if exclusive in three fractions calculated at 5 mm thick.[118] The target volume for postoperative brachytherapy includes the upper third of the vagina, the pelvic seat of the cervix and isthmus, and in the case of curative brachytherapy for inoperable patients: the entire uterine body, the cervix and parameters.[119] Chemotherapy It has a limited place in the treatment of endometrial cancer, it only applies to advanced stages, recurrence and serous-papillary forms.[120] The combination of carboplatin and paclitaxel has become a standard.[59] If chemotherapy is offered, it should be given before or after radiation

therapy sequentially.[121] Using chemotherapy alone exposes patients to a higher risk of locoregional recurrence. Mundt et al.[122] reported a 40% risk rate for local recurrence at three years in patients who received only chemotherapy after surgery. Hormone therapy Hormone therapy is widely used in the management of endometrial cancer because of its ease of administration and low toxicity compared to chemotherapy. It should therefore be indicated in cases of advanced endometrial cancer with positive hormone receptors and a slowly progressive disease with a choice of the type of hormone therapy which must take into account the relative contraindications of each treatment and the comorbidities that often present these patients.[123]

IV- CONCLUSION: Endometrial cancer is the most common gynecological cancer in industrialized countries. Its incidence is constantly increasing. The positive diagnosis is based on hysteroscopy with biopsy curettage of the endometrium. According to INCa, the preoperative locoregional extension assessment is based on pelvic MRI. It makes it possible to assess the degree of invasion of the myometrium and the cervical stroma, and thus occupies a decisive place in the planning of surgical management, making it possible to anticipate the need for pelvic and lumboortic lymph node dissection, including morbidity. postoperative is heavy, in patients with multiple comorbidities. The surgical standard is hysterectomy with bilateral adnexectomy. The latest INCa recommendations in 2010 require additional procedures to be performed (lymphadenectomy, omentectomy) depending on the clinical stage, histological type and grade. Lymph node involvement is one of the most important prognostic factors in endometrial cancers and, as such, is part of the staging information needed to properly classify the case according to the FIGO classification. Lymphadenectomy is a low cost and low morbidity technique, since a laparotomy or laparoscopy approach is decided for the hysterectomy. Instead of tirelessly asking the question of its best interests, we must ask ourselves the risks of dispensing with it. As a result, neither lymphadenectomy nor radiotherapy has definitively proved their usefulness, but neither has they ever been demonstrated to be useful in all of the subgroups, and it is impossible to refrain from it. 'both in high risk cases. And each of the two techniques must be as precise as possible. It is also unthinkable to perform systematic lymphadenectomy at the cost of a significant operative risk in patients at high surgical risk or systematic radiotherapy at the cost of radiation injury in patients at high risk of radiotherapy complications. It will be understood, of course, that information is lacking to conclude, due to the absence of randomized studies and, in the literature, to the diversity of practices.

Conflict of interest

The authors declare no conflict of interest.

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Consent

Written informed consent was obtained from the patient for publication of this research study. A copy of the written consent of each patient is available for review by the Editor-in-Chief of this journal on request.