

## **Is it essential to perform preoperative diagnostic curettage in patients scheduled for uterine myoma surgery?**

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### **Abstract**

**Objective:** Uterine myoma, which arises from the myometrium of uterus, is among the most common benign tumors of women. Generally, it has an asymptomatic character, however, in symptomatic cases, it presents with abnormal uterine bleeding. The objective of this study is to determine whether preoperative diagnostic curettage is essential or not by comparing the preoperative and postoperative endometriums of patients that underwent surgery with uterine myoma diagnosis.

**Material and Method:** In this study, 260 patients that received surgery with uterine myoma diagnosis in the Gynecology and Obstetrics Department of Taksim Education and Research Hospital in Istanbul between January 2007 and January 2010, were included. The histopathologic analysis of specimens obtained by preoperative curettage and hysterectomy, was carried out in a retrospective fashion.

**Results:** The mean age of patients was 48.3 ± 7.5 years. The distribution of preoperative curettage specimens with regard to endometrial status was as follows: phase compatible endometrium in 156 (60%), endometrial polyp in 74 (28.5%), atrophic endometrium in 20 (7.7%), and endometrial hyperplasia in 10 patients (3.8%). Among the phase compatible endometriums, 85 patients (54.5%) had proliferative endometrium, 39 patients (25%)

had late secretory phase endometrium, and 32 patients (20.5%) had early secretory phase endometrium. The distribution of postoperative hysterectomy specimens with regard to endometrial status was as follows: Phase compatible endometrium in 160 patients (61.5%), endometrial polyp in 61 patients (22.5%), endometrial hyperplasia in 14 patients (5.4%), and atrophic endometrium in 25 patients (9.6%). Among the phase compatible endometriums; 96 patients (60%) had proliferative endometrium, 44 patients (27.5%) had late secretory endometrium, and 20 patients (12.5%) had early secretory endometrium.

**Conclusion:** No difference was observed between the histopathologic results of diagnostic curettage and hysterectomy relative to malignancy or a pathology that would change the surgery plan. The result is very important because it shows that performing curettage before myoma surgery is not an essential procedure. In this study, since endometrial cancer may not have been detected due to limited number of patients, further studies including higher number of patients are required to confirm our results.

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## **Introduction**

Uterine myoma is the proliferation of smooth muscle cells in myometrium which is known to be the most common pelvic tumor seen in women above 35 years of age.<sup>1,2</sup> The yearly incidence of uterine myoma (also called as fibromyoma, fibroma, fibroid, leiomyoma, myoma, and leiomyofibroma) is 12.8/1000 among women aged 25-44 years.<sup>3</sup> However, it is not easy to determine the actual incidence of uterine myoma cases because of their generally asymptomatic course. Some studies report the myoma incidence among women as 50%.<sup>4</sup> When the entire hysterectomy specimens are included in this evaluation, this rate rises to 77%.<sup>5</sup> Major risk factors of myoma development are early menarche, low parity, childbirth at young age, infertility, and starting oral contraceptives early. Many studies have shown that estrogen has a role in leiomyoma growth.<sup>6</sup> In leiomyomas, the number of estrogen receptors and the expression of genes involved in the production of estrogen regulators such as connexin 43 gap-junction protein, Type I and III collagens, insulin-like growth factor-1, and parathyroid hormone-like peptide are observed to increase.<sup>7-11</sup> Moreover, P450 enzyme system contributes to the growth of leiomyomas and estrogen elevates the mitogenic activity.<sup>12,13</sup> Although uterine myomas develop under the influence of estrogen, the association between myoma and endometrial hyperplasia or endometrial carcinoma is not high. However, many gynecologists employ preoperative endometrial biopsy on a routine basis in cases diagnosed with uterine myoma and scheduled for hysterectomy in order to detect an endometrial hyperplasia or an

endometrial adenocarcinoma beforehand.<sup>6,14</sup> In our study, we aimed to determine whether preoperative diagnostic curettage is essential by comparing the histopathologic findings obtained before and after hysterectomy in patients diagnosed with uterine myoma.

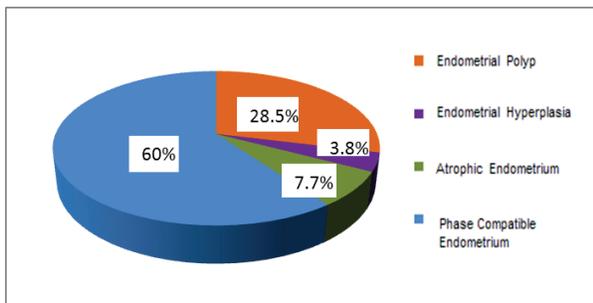
## **Material and Method**

In this study, 260 patients who presented to the Gynecology and Obstetrics Department of Taksim Education and Research Hospital in Istanbul between January 2007 and January 2010, and received preoperative diagnostic curettage before undergoing surgery with diagnosis of uterine myoma, were included. The characteristics of the patients such as age, presenting symptoms, pre- and post-menopausal state, and the histopathologic findings of preoperative endometrial curettage and hysterectomy were retrospectively evaluated. In our department, the routine diagnostic curettage procedure includes dilatation of cervix with a Hegar dilator, ensued by application of curettage with a sharp curette after which obtained specimens are sent for histopathologic analysis. In cases where we fail to achieve dilatation by local anesthesia, general anesthesia is applied within operating room conditions. Patients receive hysterectomy after the curettage and the acquired hysterectomy specimen is prepared by paraffin method for macroscopic and microscopic histopathologic examination. In this study, we preferred to use descriptive statistics for the evaluation of study data.

**Results**

The mean age of study population was 48.3±7.5 years. The youngest patient was 35 years of age and the oldest was 57 years of age. The presenting complaint was menometrorrhagia in 73% (193 patients), menorrhagia in 12.4% (32 patients), pelvic pain in 10% (26 patients), urinary symptoms in 3% (8 patients), and postmenopausal hemorrhage in 1.6% (4 patients) of the patients. Patients who had not experienced menstruation at least for 1 year, were deemed as menopause cases without checking the hormone profile. Thus, 85% of the study population (221 patients) were found to be premenopausal and 15% (39 patients) were found to be postmenopausal patients.

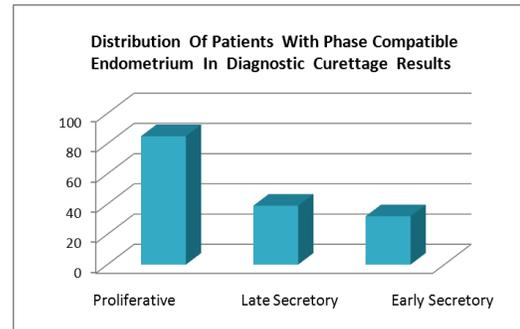
Histopathologic analysis of preoperative curettage specimens showed phase compatible endometrium in 156 (60%), endometrial polyp in 74 (28.5%), atrophic endometrium in 20 (7.7%), and endometrial hyperplasia in 10 (3.8%) patients (Graphic 1).



**Graphic 1. Distribution of patients relative to diagnostic curettage results**

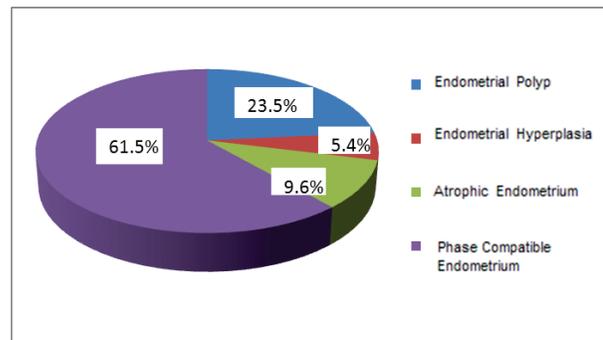
Among the phase compatible endometriums; 85 (54.5%) were proliferative endometrium, 39 (25%) were late secretory phase endometrium,

and 32 (20.5%) were early secretory phase endometrium (Graphic 2).



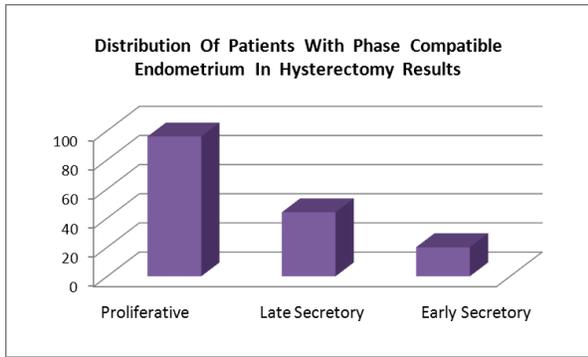
**Graphic 2. Distribution of patients with phase compatible endometrium in diagnostic curettage results**

Postoperative analysis of the hysterectomy specimens revealed phase compatible endometrium in 160 (61.5%), endometrial polyp in 61 (23.5%), atrophic endometrium in 25 (9.6%), and endometrial hyperplasia in 14 (5.4%) patients (Graphic 3).



**Graphic 3. Distribution of patients relative to hysterectomy results**

Among the phase compatible endometriums; 96 (60%) were proliferative endometriums; 44 (27.5%) were late secretory phase endometrium, and 20 (12.5%) were early secretory phase endometrium (Graphic 4).



**Graphic 4. Distribution of patients with phase compatible endometrium in hysterectomy results**

Comparison of the histopathologic results of diagnostic curettage and hysterectomy with regard to endometrial status is shown in Table 1.

**Table 1. Comparison of the histopathologic results of diagnostic curettage and hysterectomy with regard to endometrial status**

Pathology Result	Diagnostic Curettage Result (n)	Hysterectomy Result (n)
Phase compatible endometrium	156	160
Polyp	74	61
Atrophic endometrium	20	25
Hyperplasia	10	14

Histopathologic results of the diagnostic curettage specimens showed that uterine myoma and endometrial hyperplasia were both present in 3.8% of the cases (10/260), whereas histopathologic results of the hysterectomy specimens showed that the combination of uterine myoma + endometrial hyperplasia was present in 5.3% of the patients (14/260). Accuracy of diagnostic curettage was 97.5% in the

phase compatible endometrium group, 80% in the atrophic endometrium group, and 71.4% in the hyperplasia group. The number of polyps was lower because of examining hysterectomy specimens after full curettage. In our study, when endometrial histopathologic results of diagnostic curettage and hysterectomy groups were compared relative to diagnostic accuracy, no statistically significant difference was observed ( $p > 0.05$ ).

**Discussion**

Besides being the most common cause of hysterectomy, uterine myomas are also the most often seen pelvic tumor in women.<sup>1,2</sup> Although leiomyomas are encountered very rarely during the prepubertal age, they become symptomatic particularly at 30-40 year age group.<sup>15</sup> In the current study, the mean age of patients was  $48.3 \pm 7.5$  years. Since we included only uterine myoma cases that received hysterectomy, the age of presentation was thought to be higher than the actual value.

While most of the myomas are asymptomatic and of small size, many women experience serious problems during certain periods of their lives and require treatment. These symptoms vary depending on the number, size, localization, and degenerative character of the myomas. Abnormal uterine hemorrhage is the most common presenting symptom. The underlying causes of this hemorrhage are thought to be increased endometrial surface area and changes in myometrial blood flow associated with the stasis arising from compression or reduced uterine contractility due to presence of a mass leading to inadequate contraction of the

uterine vessels during menstruation.<sup>16</sup> In the current study, the presenting symptom was menometrorrhagia in 73% (190 patients) and menorrhagia in 12.4% (32 patients) of the patients. Moreover, the presenting symptom was pelvic pain in 10% (26 patients) of our patients. Myomas rarely present solely with pain. Large myomas may apply compression over the adjacent organs, leading to a chronic and blunt pain. In addition, a myoma with an intramural location can cause dysmenorrhea. Compression-related symptoms may be originating from a compression over the adjacent organs such as rectum and bladder. Myomas leading to compression over the bladder may cause incontinence; for example, 3% (8 patients) of our patients had incontinence. 1.6% (4 patients) of our study population presented to our hospital because of postmenopausal hemorrhage. Those patients demonstrated both myoma and endometrial hyperplasia in the histopathologic analysis of curettage specimens.

Many studies have shown that estrogen plays a role in the growth of leiomyomas.<sup>6</sup> Leiomyoma cases exhibit increased number of estrogen receptors as well as elevated expression of genes responsible for estrogen regulators such as connexin 43 gap-junction protein, type I and 3 collagen, insulin-like growth factor 1, and parathyroid hormone-like peptide.<sup>7-11</sup> Moreover, P450 enzyme system, which enables estrogen synthesis from androgen, also contributes to the growth of leiomyomas, and estrogen increases the mitogenic activity.<sup>12,13</sup> Although uterine myomas develop under the influence of estrogen, they are not frequently seen in combination with endometrial

hyperplasia or carcinomas. Nonetheless, although endometrial biopsy in patients scheduled for hysterectomy due to uterine myoma, is still a method that a majority of gynecologists cannot give up, the efficacy of diagnostic curettage in showing intrauterine pathologies has attracted more doubts.<sup>6,14,17</sup> Epstein et al. found the misdiagnosis rate with regard to curettage findings as 58% for endometrial polyps, 50% for hyperplasias, and 11% for endometrial cancer.<sup>18</sup> In the study of Hakverdi et al., diagnostic accuracy rate was 52% for atrophic endometrium, 47% for simple hyperplasia, 100% for atypical hyperplasia, 100% for adenocarcinoma, and 71% for phase compatible endometrium.<sup>19</sup> In our study, the accuracy rate of diagnostic curettage was 97.5% for phase compatible endometrium, 80% for atrophic endometrium, and 71.4% for hyperplasia. Our rates were higher than the values reported in the literature which is a result that can be attributed to the fact that we did not separately analyze the subgroups of phase compatible endometrium and hyperplasia groups.

There are many studies in the literature which discuss whether routinely applying diagnostic curettage before hysterectomy is necessary or not. Stovall et al. note that diagnostic curettage is unnecessary in asymptomatic patients at low risk for malignancy, however, they also point out that it should be performed in cases above 35 years of age and showing abnormal uterine hemorrhage or in patients under 35 years of age and at high risk for malignancy.<sup>20</sup> In the current study, 222 patients received diagnostic curettage because of being under 35

years of age and demonstrating abnormal uterine hemorrhage, whereas 4 patients received diagnostic curettage due to presence of postmenopausal hemorrhage. Duplantier et al. noted that applying diagnostic curettage in uterine myoma cases showing no abnormal uterine hemorrhage, would be unnecessary, as well.<sup>21</sup> Lerner et al. do not recommend diagnostic curettage in cases that are not thought to be at high risk for endometrial carcinoma, and in their study, they found the sensitivity and positive predictive value of the procedure as 20% and 50%, respectively.<sup>22</sup> In our study, no patient was at high risk for endometrial carcinoma with regard to their medical history, familial history, or physical and gynecologic examination findings. Moller et al. determined malignancy after hysterectomy in 3 (0.72%) of 411 cases and found that 1 of those had been missed by curettage, and thus they did not recommend diagnostic curettage.<sup>23</sup> In the current study, no endometrial malignancy was determined in our 260 cases. In our opinion, this result can be associated with the low study sample.

## **Conclusion**

In conclusion, we believe that routine diagnostic curettage is not essential with regard to evaluating malignancy and detecting a pathology that would change the surgery plan in uterine myoma cases scheduled for hysterectomy.

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