



Myoma-associated pain frequency and intensity: a retrospective evaluation of 1548 myoma patients



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ABSTRACT

Objective: To analyze the possible relation between symptoms (especially pain) reported by myoma patients and objective features of their myomas as determined by ultrasound. Specifically: (1) What is the frequency and intensity of myoma-related pain? (2) Does the pain intensity depend on the number, size, or location of the myomas? (3) Is there any correlation between premenstrual pain, menstrual pain, and pain during sexual intercourse?

Study design: A retrospective analysis of data from a patient questionnaire and ultrasound exams, collected from February 2009 until January 2013 at the myoma clinic of a university hospital in a large European city. The study analyzed data from 1548 myoma patients. Patients completed a 0–10 Likert scale questionnaire about their symptoms. The number, size, and location of myomas were determined from ultrasound exams.

Results: The three most frequent symptoms reported were hypermenorrhea, dysmenorrhea, and premenstrual pain. There was no statistically significant relationship between premenstrual pain or pain during sexual intercourse on the one hand and the number, size, or location of myomas on the other hand. For women with severe dysmenorrhea (Likert-scale scores of 8–10), submucosal myomas were significantly more frequent than all other myoma locations ($p = 0.01$). Severe dysmenorrhea (Likert-scale scores of 8–10) was reported by a significantly ($p < 0.001$) greater portion of the women whose largest myoma had a largest diameter of < 5 cm than by the women whose largest myoma had a diameter ≥ 5 cm. The number of myomas did not have a significant influence on the dysmenorrhea intensity. The three types of pain (premenstrual, menstrual, and/or during sexual intercourse) had moderate pairwise correlations (ρ values from 0.304 to 0.542) that were all statistically highly significant ($p < 0.001$).

Conclusion: Myoma-associated pain is, alongside hypermenorrhea, the most frequent problem reported by the affected patients. Unlike premenstrual pain and pain during sexual intercourse, the intensity of menstrual pain is clearly dependent on the location and size of the largest myoma. Further research is needed to better understand the degree to which the pain reported by the patients is due to features of the myomas versus other possible factors.

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Introduction

Myomas are the most frequent benign neoplasias of the female reproductive system. They probably occur in about 20–40% of all women of reproductive age [1]. In more precise processing of hysterectomy preparations, leiomyomas of various sizes are found

in up to 80% [2]. Most myomas are asymptomatic and do not need any treatment. Yet 20–50% of women with myomas have complaints that encroach upon their quality-of-life and make treatment necessary [3]. The following symptoms can typically be caused by myomas: heavy and prolonged menstrual bleeding, dysmenorrhea, dyspareunia, feelings of pressure or foreign bodies in the underbelly, and bladder pressure [4,5].

These myoma-associated complaints have negative effects on both the quality-of-life and the ability to work of the affected patients, and they are associated with an increased utilization of the healthcare system [6,7]. Patients with similar or identical myoma pathology findings report different complaints, individually or in

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combinations, and also of varying intensity [8,9]. In a large internet-based survey in eight countries, 43% of the women who had reported both a diagnosis of uterine fibroids and a mild to severe impact of their symptoms on their daily life in the past 12 months then also stated that their sexual life was negatively affected [11].

There are surprisingly few studies in which the relations between myoma (or resulting uterine enlargement) and pain have been systematically investigated. Such investigations would enable clinicians to better determine which patients' reported pain is, might be, or is not due to the myoma. And that insight would in turn be helpful for the indication of myoma therapy or the selection of a treatment approach. So the aim of the current retrospective study was to answer the following three questions:

- (1) What is the frequency and intensity of pain in women seeking medical care at an outpatient myoma clinic?
- (2) Does the pain intensity depend on the number, size, or location of the myomas?
- (3) Is there an association of premenstrual pain, pain during menstruation, and pain during sexual intercourse?

Methods

Study design and ethics

The current study was designed as a retrospective review of these medical records. This retrospective evaluation received advising from the Institutional Board of Charité University Hospital, to ensure good scientific practice and adherence to data privacy regulations.

Patients

All patients who came to the myoma outpatient clinic, regardless of their reason, between February 2009 and January 2013, were included in the analysis. Repeat visits by the same patient within that time period were not considered. Patients who had either an incomplete questionnaire or lacked a clearly evaluable ultrasound record or documentation were not included in the study. Patients were excluded from the analysis if they were pregnant or had ultrasound signs of adenomyosis.

Clinical measures

All patients who attended the myoma outpatient clinic filled out a 28-item questionnaire on their symptoms and history that we had developed. For the possible myoma symptoms, the questionnaire had a visual 11-point Likert scale, where 0 represented "no trouble" and 10 represented "extreme trouble". The following eight symptoms that might be myoma-associated were covered: (1) bleeding intensity, (2) premenstrual pain, (3) menstrual pain, (4) pain during sexual intercourse, (5) back pain, (6) bladder pressure, (7) pressure or feelings of a foreign mass in the lower belly, (8) flatulence or constipation.

All patients underwent a vaginal ultrasound (8 MHz receiving transducer), and some also underwent an abdominal ultrasound (5 MHz receiving transducer). All ultrasound examinations were done with a Siemens Sonoline G40, and nearly all were performed by the same clinician (MD). Each patient's "myoma size" was defined as the largest diameter of any myoma on the sonographs.

Statistics

The database consisted of 51 variables from the questionnaire and the medical records. To simplify the analysis, some variables

were condensed into categories. Results are expressed as medians with interquartile ranges (IQR) or as frequencies in percentages. After verifying the normality of data distribution, patients with severe pain versus non-severe pain were compared for differences in terms of the three kinds of pain and the clinical parameters (number of myomas, size of myomas, and location of the myomas), using the non-parametric Mann–Whitney test. Tests were carried out in an exact version, if there were small samples, large differences in sample sizes, large but unbalanced groups, data sets containing ties, or sparse data. Spearman's rho was used to calculate the pairwise correlation between the three pain items from the questionnaire. The statistical analysis was performed with SPSS 22.0 (IBM). A value of $p < 0.05$ was considered significant. Because of the retrospective character of the study, no adjustments for multiple testing have been made.

Results

From the 1936 visits to the myoma outpatient clinic during the study timeperiod, 1548 (80%) were retained for analysis after applying the exclusion criteria listed above in the Methods. The median age was 42.5 years, and 542 patients (41.5%) were under the age of 40 at the time of their visit. There were 887 patients (58.5%) who had already been pregnant at least once. There were 551 patients (39.2%) who wanted to have another child, though 143 of this subgroup of patients (26%) were already over age 40.

There were 783 patients (50.6%) with one myoma, 415 (26.8%) with two, and 239 (15.4%) with three or more. Table 1 shows the size, localization, and the corresponding frequencies of the largest myoma of each patient, which we defined as the dominant myoma.

Table 2 presents a summary of the patient replies to the eight questionnaire items on complaints possibly associated with the myoma. The most frequent complaints were heavy menstrual bleeding (92.9%), pain during menstrual bleeding (78.8%), and premenstrual pain (72.6%), though these complaints had various symptom intensities.

The data evaluation concentrated on the three pain symptoms (premenstrual pain, menstrual pain, and pain during sexual intercourse), especially in the subgroup of women who gave the highest scores (8–10) on these items. A score of 8–10 was given by 145 women (9.7%) for premenstrual pain, 269 women (18.0%) for menstrual pain, and 49 women (3.4%) for pain during sexual intercourse.

For the analysis of a possible relation between myoma-related pains (all three kinds above) and the number, size, and location of myoma, the patients were combined into two groups each: those with severe pain (scores of 8–10) vs. all others (scores of 0–7). For the variable of premenstrual pain, there was no significant difference between these two groups of patients in regards to the number of myomas ($p = 0.740$), the size of the myomas ($p = 0.730$), or the location of the myomas ($p = 0.568$). Also for the variable of pain during sexual intercourse, there was no significant difference between these two groups of patients in regards to the

Table 1
Frequency of the size and position of the largest myoma among 1548 patients.

Myoma		Frequency (%)
Largest diameter	<2 cm	6.8
	2 to <5 cm	38.5
	5 to <8 cm	27.1
	8 to <10 cm	9.7
	≥10 cm	6.1
Location	Submucosal	13.3
	Intramural	56.3
	Subserosal	18.0
	Pedunculated	12.4

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