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ARAŞTIRMA / RESEARCH

Leiomyosarcoma during reproductive period

Üreme çağındaki kadınlarda leiomiyosarkoma

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Abstract

Purpose: Uterine leiomyosarcomas are exytremely rare tumors. Increased age and postmenopausal status are the potential risk factors of leiomyosarcomas. We aimed to determine the incidence of uterine leiomyosarcoma in women during reproductive period who undergoing hysterectomy or myomectomy for presumed benign leiomyomas.

Materials and Methods: This retrospective study was carried out on women in reproductive age who had undergone myomectomy or hysterectomy due to presumed leiomyoma from January 1, 2013 to January 1, 2015. The incidence of leiomyosarcoma was calculated. Patient ages, admitting symptoms, and operative and pathologic findings were analyzed.

Results: A total of 919 women in reproductive age underwent surgeries in the period of the study. We found four cases (0.40%) of rare primary sarcomas of uterus. Case-1 and Case-3 were a 40-year old women, Case-2 was a 36-year-old women, and Case-4 was a 39-year-old woman. Abnormal uterine bleeding and pelvic pain were the two symptoms in our malignant cases. 3 of the women underwent myomectomy procedure while one patient had hysterectomy.

Conclusion: All women should be informed about quite minimal but potential possibility of malignancy that is present for their presumed leiomyomas during the counseling about the treatment options of leiomyomas.

Key words: Uterine leiomyosarcoma, reproductive age, uterine mass

Öz

Amaç: Uterin leiomyosarkomlar çok nadir tümörlerdendir. İleri yaş ve menapoz leiomyosarkomun potansiyel risk faktörleridir. Bu çalışmada, reprodüktif çağda leiomiyoma tanısı ile miyomektomi ya da histerektomi yapılan kadınlarda leiomiyosarkom insidansını saptamayı amaçladık

Gereç ve Yöntem: 1 Ocak 2013 ile 1 Ocak 2015 tarihleri arasında leiomyioma tanısı ile miyomektomi ya da histerektomi yapılan reprodüktif çağdaki kadınlar retrospektif olarak tarandı. Leomiyosarkom insidansı hesaplandı. Hastaların yaşı, semptomları, operatif ve patolojik bulguları analiz edildi.

Bulgular: Bu periyotta reprodüktif yaşta toplam 919 kadın opere edildi. 4 tane (%0,04) nadir primer uterus sarkomu saptandı. Vaka 1 ve vaka 3; 40 yaşında,vaka 2; 36 yaşında ve vaka 4; 39 yaşındaydı. Anormal uterin kanama ve pelvik ağrı malign vakaların en önemli iki semptomuydu. 3 hastaya myomektomi cerrahisi yapılırken, geri kalan 1 hastaya histerektomi operasyonu uygulandı.

Sonuç: Leiomiyomanin tedavi seçenekleri hakkında danışmanlık verildiği sırada, leiomiyoma farzedilen oluşumun çok az da olsa malign çıkabileceği hakkında tüm kadınlar bilgilendirilmelidir.

Anahtar kelimeler: Uterin leiomiyosarkoma, reprodüktif donem, uterin kitle

INTRODUCTION

Uterine leiomyosarcomas are a relatively rare genital tract cancers with poor prognosis, representing approximately 2% of all uterine malignancies[1]. Due to the similarities in clinical presentation and inability of any preoperative imaging modalities, it is preoperatively difficult to properly distinquish the uterine leiomyosarcoma from benign leiomyoma[2]. Additionally, because of its rarerity, related risk factors are not well defined for leiomyosarcomas. However, black race, increasing ages,

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postmenopausal status, obesity, long term tamoxifen use, pelvic irradiation history and some hereditary conditions have been proposed as potential risk factors of leiomyosarcomas[3-5]. The increasing age is thought to be as a significant risk factor for uterine leiomyosarcomas. Namely, the average age at diagnosis is 50 years and the majority of these sarcomas occur after menopause. Unfortunately, the presence of this malignancy has been reported in young women[6]. In our study, we aimed to report the leiomyosaroma cases in women who were incidentally diagnosed youger than <40 years and discuss their clinical characteristics with literature.

MATERIALS AND METHODS

This retrospective study was carried out on women who had undergone myomectomy or hysterectomy due to myomata related abnormal uterine bleeding or pelvic pain at Zekai Tahir Burak Woman's Health, Education and Research Hospital from January 1, 2013 to January 1, 2015. The study was conducted after the approval by the institutional review board of hospital. Informed consent was considered unnecessary because the study was performed retrospectively by chart review.

A total of 919 women underwent surgeries in the period of the study. The database included all of the pathology reports of all surgeries were identified through a search of the archieves of the pathology department of the hospital. The women aged ≤40 years old and had a final diagnosis of uterine leiomyosarcoma were reported as cases. Once the cases were identified, their medical records were reviewed, and information pertaining to demographic data, clinicopathological data, and surgical procedure performed for presumed myomas and complications were collected.

Statistical analysis

The cumulative risk of uterine leiomyosarcoma in young women over an 2-year period was calculated using only the women who had undergone surgery for presumed uterine leiomyoma. This was calculated by dividing the number of uterine leiomyosarcoma cases determined at pathology department over the 2-year period by the total number of patients (excluding uterine leiyosarcoma cases aged >40 years old) who underwent surgery for presumed uterine leiomyoma over the 2-year period.

Table 1. Clinicopatologic characteristics of patients

	Case	Case 2	Case 3	Case 4
Age	40	36	40	39
Parity	2	1	3	3
BMI* kg/m²	28.4	26.8	31.1	30.5
Smoking	No	Yes	No	No
Complaint	AUB*	AUB*	Pelvic pain and AUB*	Pelvic pain and AUB*
Endometrial Biopsy	Proliferative endometrium	Non-spesific endometrit	Simple endometrial hyperplasia	Non-specific endometritis
Uterine size	11	9	13	12
Myoma size	8	4	5.5	5
Myoma type	Intramural	Submucosal	Intramural	Intramural
No. of myoma	1	Multiple	Multiple	Multiple
Surgery	Myomectomy	Operative hysterescopy	TAH*	Myomectomy

BMI: Body Mass Index; AUB: Abnormal uterine bleeding; TAH: Total abdominal hysterectomy

RESULTS

In total 4 cases were identified. Detailed patient and clinicopathologic characteristics are showed in Table 1. The ages of women at diagnosis were 36, 39, and 40 years. BMI of two patiens higher than 30 kg/m². Abnormal uterine bleeding and pelvic pain were the two symptoms in our malignant cases. The preoperative endometrial samplings of the cases had benign. 3 of the women underwent myomectomy procedure while one patient had hysterectomy. The cumulative risk of unsuspected leiomyosarcoma calculated as 0.40% (95% CI, 0.26%–0.56%) in ≤ 40 year-old women after hysterectomy or myomectomy over a 2 year period.

DISCUSSION

Uterine leiomyosarcomas are rare malignant neoplasm with poor prognosis. They are usually diagnosed incidentally on hysterectomy specimen analysis. It has been reported that the cumulative risk of uterine leimyosarcomas in women subsequent to hysterectomy or myomectomy is between 0.08% and 0.49%[7,8]. And the risk is associated with increasing age. Unfortunaly, there are no high quality data regarding the prevalence of uterine leiomyosarcoma in ≤ 40 year-old women undergoing hysterectomy or myomectomy for presumed benign leiomyomas. In our current study, we have found the cumulative risk of unsuspected leiomyosarcoma as 0.40% (95% CI, 0.26%–0.56%) in ≤ 40 year-old women after hysterectomy or myomectomy over a 2 year period which are consistent with previous studies including all ages of women noted above. Our hospital is a tertiary reference hospital, because of this so many suspicious cases may be refered to us by clinicians. Our result is therefore likely slightly higher.

The diagnosis of uterine leiomyosarcoma is currently based upon histologic examination. Although the risk factors are not well defined for leiomyosarcomas, increasing age, postmenopausal status, obesity, tamoxifen use, pelvic irradition history have been presented as potential risk factors. However in our study, only one of these factors was reported among the cases. Only 50% of cases had obesity. Additionally, preoperative and intraoperative findings have limited value in determining the likelihood that a uterine mass is malignant. Their symptomatology is non-specific including especially abnormal uterine bleeding, pelvic pain/pressure and a pelvic mass which are also primary presenting symptoms for leiomyomas[9]. Abnormal uterine bleeding and pelvic pain were the two symptoms in our malignant caseswhich are making the diagnosis difficult between benign and malignant conditions.

Some previous studies have reported that uterine leimyosarcoma is often singular, large and solitary mass averaging 7 to 9 cm in diameter[10-12]. But the majority of these studies are small case series or retrospective cohort studies. Therefore, the debate about the addressing a large myoma (7–9 cm) and/or solitary myoma as risk factor for leiomyosarcoma is still present. A recent study done by Park et al. retrospectively analysed to the ultrasonographic findings associated with low-grade endometrial stromal sarcoma. They found the maximal diameter of the sarcoma ranged from 4 to 9.1 cm (mean, 6.2 cm) [13]. Consistently, three cases in our study have a diameter of mass less than 7 cm. In our study, the preoperative endometrial samplings of the cases had benign finding indicating the limited utility of endometrial sampling in detection of uterine leiomyosarcomas, as mentioned previous studies[14,15].

Pelvic ultrasound is typically the first-line imaging method to evaluate women for potential uterine pathology. However, the discriminative ability of ultrasound with or without Doppler assessment between leiomyosarcomas and leiomyoma is not reliable (16). On the other hand, some recent studies have shown that MRI may be useful in differentiating sarcomas from myomas preoperatively[14,17]. In our clinical practice we do not prefer to perform a preoperative MRI for presumed uterine leiomyomas. Therefore we could not assess the ability of MRI in differential diagnosis of an uterine mass and also we did not found any surprising findings on preoperative ultrasounds for the cases.

In conclusion, altough small case series design with a retrospective manner is the main limitation of this study, we have illustrated that young age does not exclude the diagnosis of uterine leiomyosarcoma and it is difficult to define women at high risk for leiomyosarcoma with any reliable preoperative and intraoperative diagnostic assessments. Therefore, all women should be informed about quite minimal but potential possibility of malignancy that is present for

their presumed leiomyomas durng the counseling about the treatment options of leiomyomas.

REFERENCES

1. Theben JU, Schellong AR, Altgassen C, Kelling K, Schneider S, Grosse-Drieling D. Unexpected malignancies after laparoscopic-assisted supracervical hysterectomies (LASH): an analysis of 1,584 LASH cases. Arch Gynecol Obstet. 2013;287:455-62.
2. Wu TI, Yen TC, Lai CH. Clinical presentation and diagnosis of uterine sarcoma, including imaging. Best Pract Res Clin Obstet Gynaecol. 2011;25:681-9.
3. Brooks SE, Zhan M, Cote T, Baquet CR. Surveillance, epidemiology, and end results analysis of 2677 cases of uterine sarcoma 1989-1999. Gynecol Oncol. 2004;93:204-8.
4. Mourits MJ, De Vries EG, Willemse PH et al. Tamoxifen treatment and gynecologic side effects: a review. Obstet Gynecol. 2001;97:855-66.
5. Fang Z, Matsumoto S, Ae K, Kawaguchi N, Yoshikawa H, Ueda T et al. Postradiation soft tissue sarcoma: a multiinstitutional analysis of 14 cases in Japan. J Orthop Sci. 2004;9:242-6.
6. Norris HJ, Taylor HB. Mesenchymal tumors of the uterus. a clinical and pathological study of 53 endometrial stromal tumors. Cancer. 1966;19:755-66.
7. Parker WH, Fu YS, Berek JS. Uterine sarcoma in patients operated on for presumed leiomyoma and rapidly growing leiomyoma. Obstet Gynecol. 1994;83:414-8.
8. Paul PG, Rengaraj V, Das T, Garg R, Thomas M, Khurd AS. Uterine sarcomas in patients undergoing surgery for presumed leiomyomas: 10 years' experience. J Minim Invasive Gynecol. 2016;23:384-9.
9. Chern JY, Boyd LR, Blank SV Uterine sarcomas: the latest approaches for these rare but potentially deadly tumors. Oncology (Williston Park). 2017;31:229-36.
10. Durnali A, Tokluoğlu S, Özdemir N, Inanç M, Alkiş N, Zengin N et al. Prognostic factors and treatment outcomes in 93 patients with uterine sarcoma from 4 centers in Turkey. Asian Pac J Cancer Prev. 2012;13:1935-41.
11. Kim JA, Lee MS, Choi JS. Sonographic findings of uterine endometrial stromal sarcoma. Korean J Radiol. 2006;7:281-6.
12. Wang WL, Soslow R, Hensley M, Asad H, Zannoni GF, de Nictolis M et al. Histopathologic prognostic factors in stage I leiomyosarcoma of the uterus: a detailed analysis of 27 cases. Am J Surg Pathol. 2011;35:522-9.
13. Park GE, Rha SE, Oh SN, Lee A, Lee KH, Kim MR. Ultrasonographic findings of low-grade endometrial stromal sarcoma of the uterus with a focus on cystic degeneration. Ultrasonography. 2016;35:124-30.
14. Skorstad M, Kent A, Lieng M. Preoperative evaluation in women with uterine leiomyosarcoma. A nationwide cohort study. Acta Obstet Gynecol Scand. 2016;95:1228-34.
15. Durand-Réville M, Dufour P, Vinatier D, Martin de Lassalle E, Lucot JP, Monnier JC et al. Uterine leiomyosarcomas: a surprising pathology. Review of the literature. Six case reports. J Gynecol Obstet Biol Reprod (Paris). 1996;25:710-5.
16. Gaetke-Udager K, McLean K, Sciallis AP, Alves T, Maturen KE, Mervak BM et al. Diagnostic accuracy of ultrasound, contrast-enhanced CT, and conventional MRI for differentiating leiomyoma from leiomyosarcoma. Acad Radiol. 2016;23:1290-7.
17. Barral M, Placé V, Dautry R, Bendavid S, Cornelis F, Foucher R et al. Magnetic resonance imaging features of uterine sarcoma and mimickers. Abdom Radiol (NY). 2017;42:1762-72.