Incidence of Tissue Morcellation During Surgery for Uterine Sarcoma at a Canadian Academic Centre

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Abstract

Objectives: To determine the incidence of tissue morcellation during surgery for uterine sarcoma in a Canadian tertiary academic centre.

Methods: In this retrospective cohort study, the clinical charts of all women who underwent hysterectomy for uterine sarcoma at the Ottawa Hospital between April 1, 2007, and March 31, 2014, were reviewed for their clinical characteristics and details of surgical treatment.

Results: Sixty-six cases of uterine sarcoma were identified. The mean (± SD) age of patients was 62.1 ± 10 years, and 81.8% were postmenopausal. Of the tumours, 43.9% were carcinosarcomas, 28.8% were leiomyosarcomas, 13.6% were endometrial stromal sarcomas, 6.1% were adenosarcomas, 1.5% were uterine rhabdomyosarcomas, and 6.1% were undifferentiated sarcomas. None of the surgical specimens were morcellated by laparoscopic power morcellation, and 61/66 (92.4%) of patients had their surgery performed by a gynaecologic oncologist. In the remaining five women whose surgery was performed by a general gynaecologist (4 with leiomyosarcomas and 1 with undifferentiated uterine sarcoma), two surgical specimens were morcellated manually using a scalpel during the removal of presumed fibroids at hysterectomy performed by midline laparotomy. The first of these was a case performed as an emergency because of acute pelvic symptoms secondary to leiomyosarcoma, and the second case had a solitary leiomyosarcoma among multiple benign leiomyomata.

Conclusion: Uterine sarcomas are uncommon, and morcellation is rarely performed but may nevertheless be performed in the surgical management of presumed fibroids. Further studies and the establishment of a national registry are needed to better quantify the risk of morcellation, to characterize clinical risk factors, and to provide surgical alternatives for women undergoing uterine surgery.

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Résumé

Objectifs : Déterminer l'incidence du morcellement tissulaire dans le cadre des chirurgies visant des sarcomes utérins au sein d'un centre universitaire tertiaire canadien.

Méthodes : Dans le cadre de cette étude de cohorte rétrospective, les dossiers cliniques de toutes les femmes qui ont subi une hystérectomie en raison d'un sarcome utérin à L'Hôpital d'Ottawa, entre le 1er avril 2007 et le 31 mars 2014, ont été analysés en vue d'en tirer les caractéristiques cliniques et d'établir les détails du traitement chirurgical mis en œuvre.

Résultats : Soixante-six cas de sarcome utérin ont été identifiés. L'âge moyen (± σ) des patientes était de 62,1 ± 10 ans et 81,8 % d'entre elles étaient postménopausées. Les tumeurs se répartissaient comme suit : 43,9 % d'entre elles étaient de carcinosarcomes; 28,8 %, des léiomyosarcomes; 13,6 %, des sarcomes du chorion cytogène; 6,1 %, des adénosarcomes; 1,5 %, des rhabdomyosarcomes utérins; et 6,1 %, des sarcomes indifférenciés. Aucun des prélèvements chirurgicaux n'a été soumis à un morcellement motorisé laparoscopique et, chez 61/66 (92,4 %) des patientes, la chirurgie a été menée par un gynéco-oncologue. Chez les cinq autres femmes (léiomyosarcomes dans quatre de ces cas et sarcome utérin indifférencié dans l'autre), pour lesquelles la chirurgie a été menée par un gynécologue généraliste, deux prélèvements chirurgicaux ont été morcelés de façon manuelle au moyen d'un scalpel pendant le retrait de fibromes présumés au moment d'une hystérectomie menée par laparotomie médiane. Dans le premier de ces deux cas, l'intervention a été menée d'urgence en raison de la présence de symptômes pelviens aigus attribuables à un léiomyosarcome, tandis que dans l'autre, la patiente en question présentait un léiomyosarcome solitaire situé parmi de multiples léiomyomes bénins.

Conclusion : Les sarcomes utérins sont peu courants; de plus, bien qu'un morcellement soit rarement mis en œuvre, une telle intervention peut néanmoins en venir à être menée dans le cadre de la prise en charge chirurgicale de fibromes présumés. La tenue d'autres études et l'établissement d'un registre national s'avèrent requis pour mieux quantifier le risque lié au morcellement, pour définir les facteurs de risque cliniques et pour fournir des solutions de rechange chirurgicales aux femmes qui doivent subir une chirurgie utérine.

INTRODUCTION

It is well established that minimally invasive surgical techniques for hysterectomy are associated with reduced risk for intraoperative and postoperative morbidity, and a substantial portion of hysterectomies in Canada are therefore performed in this manner.[1–3] Uterine fibroids are the most common indication for hysterectomy; more than one third of hysterectomies are performed for this indication. The removal of large tissue specimens through a minimally invasive approach often requires the fragmentation of tissue through morcellation, either with a laparoscopic power morcellator or a scalpel.[4]

While uterine fibroids are a common reason for uterine surgery, uterine sarcomas are by contrast relatively infrequent; the annual incidence of uterine leiomyosarcomas is approximately 0.64 per 100 000 women.[4–6] It is generally not possible to distinguish between uterine fibroids and sarcomas preoperatively, and it has been estimated that approximately one in 350 to 500 women undergoing uterine surgery for presumed fibroids will have an unsuspected sarcoma.[7–11] However, the true incidence is largely unknown because the studies estimating the risk of occult malignancy at the time of hysterectomy are limited by their methodology and selection of study participants. Given the limitations of these studies and the questionable generalizability to Canadian populations and health care systems, there is a need to determine the risk of incidental diagnosis of uterine sarcomas in a Canadian setting.

The purpose of this study was to determine the incidence of tissue morcellation during surgery for uterine sarcoma within a Canadian academic centre. The primary objective of this study was to determine if any cases of uterine sarcoma at the Ottawa Hospital were subject to any form of tissue morcellation. Our secondary objectives were to determine whether any cases were operated on by a non-gynaecologic oncologist and to determine the characteristics of care associated with such cases.

METHODS

In this retrospective chart review, the clinical records of all women with uterine sarcoma diagnosed at the Ottawa Hospital between April 1, 2007, and March 31, 2014, were reviewed for their clinical characteristics and details of surgical treatment. All women who had a hysterectomy for uterine sarcoma at the Ottawa Hospital were included in the study, and no exclusion criteria were applied. The medical record numbers for these cases were identified through the Ottawa Hospital Data Warehouse using the ICD 10-CA codes for malignant neoplasm of cervix uteri, corpus uteri, and uterus unspecified (C54*, C55*, C53*) and Diagnosis Type 4 (Morphology) codes for sarcoma or leiomyosarcoma (88903, 88913, 88963), Mullerian tumour/carcinosarcoma (89503, 89803, 89813), endometrial stromal sarcoma (89303), sarcoma uterus not otherwise specified (88003), or adenosarcoma (89333).

We then accessed the charts of these women and reviewed their clinical characteristics and details of surgical treatment. Information on patient demographics (age, gravidity, parity, menopausal status, past history of malignancy), clinical presentation (clinical symptoms, suspicion for rapid growth), ultrasound and MRI characteristics (number, size, and location of uterine mass), operative management (surgical specialty performing operation, type of uterine surgery, use of minimally invasive techniques, presence of tissue morcellation), and tumour characteristics (type and stage of uterine sarcoma) were systematically collected from clinical notes, radiologic reports, and pathology reports. In cases in which surgery was performed by a general gynaecologist rather than a gynaecologic oncologist, and in cases in which tissue morcellation took place, the charts were reviewed in further detail to identify preoperative, intraoperative, and postoperative events and outcomes.

Descriptive statistics were used to characterize the study population. Continuous variables were summarized using means and standard deviations for normally-distributed data and medians and ranges for non-parametric data. Categorical variables were summarized using frequencies and proportions.

Ethics approval was obtained from the Ottawa Health Science Network Research Ethics Board.

RESULTS

During the study period, 66 cases of uterine sarcoma were identified at the Ottawa Hospital. The clinical characteristics of this population are presented in Table 1. The mean (± SD) age was 62.1 ± 10 years, and 81.8% of the women were postmenopausal. In terms of clinical symptoms, 43.9% of the women experienced pain/pressure symptoms, 13.6% reported heavy menstrual bleeding symptoms, and, 54.6% reported postmenopausal bleeding. More than half of the cohort (56.3%) presented with a single mass, 18.8% presented with two masses, and 25% presented with three or more masses. The mean diameter of the largest mass within each patient was 9.0 cm but ranged from 0.6 to 26 cm. The majority of these masses (69.4%) were subserosal, 11.1% were intramural, and 19.4% were submucosal. A suspicion of sarcoma based on rapid growth was documented in 16.7% of the