A Multicentre Retrospective Review of Clinical Characteristics of Uterine Sarcoma

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Abstract

Objective: Professional societies have recently urged gynaecologists to counsel patients about the risks of encountering uterine sarcoma at fibroid surgery especially when morcellation is used. Our objective was to learn the preoperative and postoperative characteristics of patients with uterine sarcoma to better counsel patients undergoing surgery for presumably benign fibroids.

Methods: This is a multicentre, retrospective cohort study. Three academic tertiary cancer centres in Southern Ontario over a 13-year period (2001-2014). Patients diagnosed with leiomyosarcoma or endometrial stromal sarcoma were included after identification using pathology databases. A retrospective chart review was conducted to determine clinical characteristics and survival data.

Results: The study included 302 patients with uterine sarcomas (221 leiomyosarcomas, 81 endometrial stromal sarcomas). Mean age at diagnosis was 55 years, and 59% were postmenopausal. Sarcoma diagnosis was made following endometrial sampling (25%), hysterectomy (69% laparotomy, 2.7% laparoscopic/vaginal), and myomectomy (3.3%). Of all the patients who underwent endometrial sampling, 65% were diagnosed with a uterine sarcoma in this manner. A general gynaecologist performed the primary surgical procedure in 166 of 302 patients (55%). Tumour disruption at the time of primary surgery occurred in 57 of 295 patients (19%): subtotal hysterectomy (21), myomectomy (10), dissection of adherent tumour (17), and morcellation (9). Morcellation, to facilitate a minimally invasive approach, was performed with scalpel (2 at laparotomy, 5 vaginally) and with a laparoscopic electro-mechanical morcellator (2). At a median follow-up of 2.9 years, there was no significant difference in survival for stage I and II patients with tumour disruption (n = 32) compared with those without tumour disruption (n = 143), regardless of sarcoma type ($P = 0.6$).

Conclusion: The majority of patients with uterine sarcomas were postmenopausal. Many can be diagnosed preoperatively with endometrial sampling. Forty-one percent of patients with uterine sarcomas had a high preoperative index of suspicion, resulting in intervention by an oncologist. Morcellation with laparoscopic electro-mechanical morcellator was rare.

Key Words: Fibroid, leiomyoma, morcellation, uterine sarcoma

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Résumé

Objectifs : Des sociétés professionnelles ont récemment appelé les gynécologues à aborder avec leurs patientes le risque de détection d'un sarcome lors d'une chirurgie du fibrome utérin, tout particulièrement lorsque la tumeur est morcelée. Notre objectif était de déterminer les caractéristiques préopératoires et postopératoires des patientes atteintes de sarcome utérin afin de mieux conseiller les femmes subissant une intervention pour un fibrome utérin présumé.

Méthodologie : Il s'agissait d'une étude de cohorte rétrospective multicentrique menée dans trois centres universitaires de soins tertiaires du Sud de l'Ontario sur une période de 13 ans (de 2001 à 2014). Nous avons retenu les patientes ayant reçu un diagnostic de léiomyosarcome ou de sarcome du chorion cytogène repérées dans les bases de données sur les pathologies. Nous avons ensuite effectué un examen rétrospectif des dossiers pour déterminer les caractéristiques cliniques et les données sur la survie.

Résultats : Notre étude s'est penchée sur 302 patientes atteintes de sarcomes utérins (221 léiomyosarcomes, 81 sarcomes du chorion cytogène). L'âge moyen au diagnostic était de 55 ans, et 59 % des patientes étaient ménopausées. Le diagnostic de sarcome a été posé à la suite de diverses interventions : prélèvement endométrial (25 %), hystérectomie (par laparotomie : 69 %; vaginale assistée par laparoscopie : 2,7 %), myomectomie (3,3 %). Parmi les patientes ayant subi un prélèvement endométrial, 65 % ont reçu un diagnostic de sarcome utérin à la suite de cette intervention. Pour 170 patientes (56 %), l'intervention chirurgicale primaire a été pratiquée par un gynécologue généraliste. Une perturbation tumorale a eu lieu chez 57 patientes sur 295 (19 %) pendant l'intervention primaire : hystérectomie subtotale (21), myomectomie (10), dissection d'une tumeur adhérente (17) et morcellement (9). Le morcellement, qui vise à permettre l'intervention la moins effractive possible, a été pratiqué au moyen d'un scalpel (2 par

laparotomie, 5 par voie vaginale) ou d'un morcellateur électromécanique (2, par laparoscopie). Après un suivi médian de 2,9 ans, on ne notait aucune différence significative entre les taux de survie des patientes de stade I et II ayant subi une perturbation tumorale (n = 32) et ceux des patientes n'ayant pas subi ce type de perturbation (n = 143), peu importe le type de sarcome (P = 0,6).

Conclusion : La majorité des patientes atteintes de sarcomes utérins étaient ménopausées. Bon nombre de sarcomes peuvent être diagnostiqués avant une chirurgie par prélèvement endométrial. Quarante et un pour cent des patientes atteintes de sarcomes présentaient un indice de suspicion préopératoire élevé en raison duquel elles avaient été vues par un oncologue. Le morcellement laparoscopique au moyen d'un morcellateur électromécanique était peu utilisé.

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INTRODUCTION

Over the past few years, there has been increasing concern about the risks of unexpectedly encountering uterine sarcoma at the time of fibroid surgery. In particular, many professional and regulatory bodies have issued statements pertaining to tumour disruption and cautioning against morcellation of surgical specimens.[1–4] Many of the studies evaluating the incidence of uterine/fibroid morcellation have been conducted in the United States,[5–7] and Canadian data are scarce. Furthermore, several studies have attempted to evaluate the impact of sarcoma morcellation on survival.[8–14] The results have been mixed.

Within this context, it is essential that gynaecologists have the appropriate tools to counsel their patients about encountering unexpected uterine sarcoma and the risks of morcellation. Preliminary studies have prospectively evaluated tools that predict sarcoma in presumably benign uterine fibroids.[15–17] The results, however, have been inconsistent and of limited application to clinical practice. Our primary objective was to describe the patient characteristics, presentation, and surgical management of patients with uterine sarcomas at tertiary care centres in Southern Ontario. Secondary objectives included determining the prevalence of morcellation of uterine sarcomas and the impact on patient survival. Our goal was to help clinicians when counselling patients with symptomatic fibroids prior to surgery.

ABBREVIATIONS

ESS	endometrial stromal sarcoma
LMS	leiomyosarcoma
SEER	Surveillance, Epidemiology, and End Results

MATERIALS AND METHODS

A retrospective chart review was performed at three tertiary cancer centres in Southern Ontario, Canada. Research Ethics Board approval was obtained from Sunnybrook Health Sciences Centre (REB#319-2014), University Health Network (REB#14-8224-CE), and Hamilton Health Sciences Centre (REB#14-624-C).

Pathology databases at each institution were searched to identify patients with any type of uterine sarcoma diagnosed between January 1, 2001, and December 31, 2014. The pathology reports were reviewed, and patients diagnosed with leiomyosarcomas and endometrial stromal sarcomas were included. All other sarcomas and patients with recurrent sarcomas were excluded. The corresponding clinical chart was then reviewed.

Collection of general demographic data at the time of diagnosis included age, menopausal status, BMI, ethnicity, and smoking history. Data on history of previous cancer diagnoses and history of radiation treatment were extracted. Tumour histology (LMS or ESS) and stage at diagnosis[18] were recorded.

Details of the surgical procedures extracted from the chart included procedure leading to diagnosis and attempts at cure. The primary surgical procedure was defined as the first major surgery (hysterectomy or myomectomy) when sarcoma was either diagnosed or when an attempt at cure was made. Endometrial sampling procedures (hysteroscopy/dilatation and curettage) were noted but not classified as the primary surgical procedure. Collected surgical data included the primary surgeon (gynaecologic oncologist or general gynaecologist); the location of the surgery (cancer centre, tertiary/teaching centre, community hospital); and surgical route and procedure. Tumour disruption at the time of surgery was defined as incomplete sarcoma or uterine excision and included the following procedures: subtotal hysterectomy, abdominal/laparoscopic myomectomy, unintentional tumour morcellation, and incomplete dissection of adherent tumour.

Overall survival was recorded based on available follow-up data. Overall survival was calculated from the date of uterine sarcoma diagnosis to the date of death as obtained either from the patient's chart or Cancer Care Ontario's Ontario Cancer Registry. This provincial database links pathology from hospital and community laboratories to