Uterine smooth muscle tumor of uncertain malignant potential

A.C. da Silva¹, T. Calapodopulos¹, T.C. Guaresqui¹, J.C. Saldanha², E.F.C. Murta¹, R.S. Nomelini¹

¹Research Institute of Oncology (IPON)/Department of Gynecology and Obstetrics, ²Service of Surgical Pathology, Federal University of Triângulo Mineiro, Uberaba - MG (Brazil)

Summary

Uterine smooth muscle tumor of uncertain malignant potential (STUMP) are uterine neoplasms with mesenchymal characteristics between benign leiomyomas and malignant leiomyosarcomas. A 41-year-old patient sought the Gynecology and Obstetrics Service of the Federal University of the Triângulo Mineiro for parous myoma and severe anemia. The patient underwent abdominal hysterectomy and the anatomicopathologic results showed mild nuclear atypia, hypercellularity, and foci of necrosis, which confirmed the diagnosis of STUMP. The patient was followed up for 45 months without recurrence of the disease.

Key words: Smooth muscle tumor; Uterine neoplasms; Leiomyoma; STUMP; Uterine cancer.

Introduction

Uterine smooth muscle tumor of uncertain malignant potential (STUMP) are uterine neoplasms that have mesenchymal characteristics between benign leiomyomas and malignant leiomyosarcomas. Although metastases originate from leiomyosarcomas, STUMPs generally do not metastasize [1]. These neoplasms play a significant role in histological diagnosis, classification, and clinical management because their natural history is poorly understood [2]. They affect approximately 40% of women over the age of 35. On the other hand, uterine leiomyosarcomas are relatively rare smooth muscle tumors, with more than 50% of uterine sarcomas, and 1.3% of all uterine malignancies.[3]

The term STUMP was first used in the literature by Kempson in 1973 [4]. Currently, it is classified according to the World Health Organization, which established that uterine smooth muscle neoplasms not clearly (unequivocally) diagnosed as malignant or benign should be defined as STUMP [4, 5]. By analyzing the cytological atypia, the presence of mitoses or the necrosis of tumor cells, it is possible to accurately distinguish smooth muscle uterine neoplasms characterized by benign leiomyomas of malignant leiomyosarcomas [6]. Thus, the Stanford criterion was established to be used in the histological diagnosis of malignant leiomyosarcoma reported by Bell et al. Stanford criteria include at least two of the following criteria: moderate to severe atypia, counts of at least 10 mitotic figures in 10 high magnification fields [10 mitotic figures (MF)/10 high power fields (HPFs)], and necrosis tumor cell [7]. The diagnosis of leiomyomas and leiomyosarcomas is usually performed according to mitoses, cytological atypia, and coagulative necrotic neoplastic cells (coagulative tumor cell necrosis). The mitotic index count is an important factor for the diagnosis of malignancy in uterine smooth muscle neoplasms. However, differentiation of variants of benign leiomyomas such as mitotically active leiomyomas, atypical leiomyomas, and smooth muscle uterine neoplasms with undifferentiated malignancy (benign leiomyoma variants, such as bizarre (atypical) leiomyoma (BLM), mitotically active leiomyoma), and STUMP, may be difficult, and degenerated nuclei may be misinterpreted as mitotic figures [8, 9]. Mitotic figure counting is a time-consuming and complex procedure, therefore it is necessary to perform immunohistochemistry for the identification of mitotic figures [9]. Cellular, tumor margins, and their relations to the surrounding myometrium are additional criteria in the diagnosis of STUMP [7].

Case Report

A 41-year-old G4P4 patient sought the gynecology and obstetrics service of the Federal University of the Triângulo Mineiro for parous myoma and severe anemia. She reported vaginal bleeding two years prior with worsening a month ago in moderate amount, accompanied by abdominal pain. At clinical examination, she had normal blood pressure, painful abdomen at deep palpation, with a moderate volume hardened mass. Transvaginal ultrasonography showed uterus of 12.3×7.0 ×6.8 cm and volume of 309 ml, a heterogeneous myometrium with well-defined hypoechoic nodules measuring 6.5×5.2 cm in the posterior uterine wall, with intramural components and submucous. The endometrium and ovaries were normal. The diagnostic hypothesis was of uterine myoma.

Laboratory tests showed hemoglobin 9.9 g/dl and hematocrit 32.1%. The patient underwent abdominal hysterectomy and the anatomicopathological showed mild nuclear atypia, hypercellularity, and foci of necrosis, diagnosing STUMP (Figure 1), intramural and subserous leiomyomas, atrophic endometrium with stromal pseudodecidualization, moderate chronic cervicitis in ac-
One study reported a recurrence frequency of STUMP of 7% [12]. Another study compared the results of 15 STUMP patients with 22 leiomyosarcoma patients. They found that the recurrence rate was 27% for STUMP and 69% for leiomyosarcomas, and that the overall five-year survival rate was 92% for STUMP patients and 40% for leiomyosarcoma patients [15]. The present patient has been followed-up for 38 months with no relapse.

The management of patients with suspected STUMP does not yet have standardized protocols [14]. Most tumors classified as STUMP have been associated with favorable prognosis. Patient follow-up is recommended [12, 16].

So far no consensus has been proposed on choosing the best strategy for surgery [6]. Patients with STUMP should be advised regarding the potential for recurrence as leiomyosarcoma. The ideal criteria for follow-up are still inconclusive. Patients with STUMP may require closer monitoring than an annual examination and may require an appointment with a gynecological oncologist.

Acknowledgement

The authors wish to acknowledge CNPq (Conselho Nacional de Desenvolvimento Científico e Tecnológico), FU-NEPU (Fundação de Ensino e Pesquisa de Uberaba), and the FAPEMIG (Fundação de Amparo à Pesquisa do Estado de Minas Gerais).

References


Figure 1. — Mild nuclear atypia, hypercellularity, and foci of necrosis. 1A) Hematoxylin-eosin (×10). 1B) Hematoxylin-Eosin (×40).


Corresponding Author:
R.S. NOMELINI, M.D., PHD
Research Institute of Oncology (IPON)/
Department of Gynecology and Obstetrics
UFTM, Av. Getúlio Guarita, s/n, Bairro Abadia
38025-440 Uberaba-MG (Brazil)
e-mail: rosekeila@terra.com.br