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STUMP TUMORS: STATE OF ART ON CLINICAL, HISTOLOGICAL AND THERAPEUTIC ASPECTS

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ABSTRACT

Uterine smooth muscle tumors of uncertain malignant potential (STUMP) are rare uterine neoplasms known for their complexity. In the present study, a bibliographic review of the state ofthe art and the latest research on these tumors included its clinical, paraclinical, and anatomopathological aspects in order to propose the best therapeutic strategy.

KEYWORDS: Smooth muscle tumor of uncertain malignant potential, STUMP, Uterine leiomyoma.

INTRODUCTION

Smooth Muscle Tumors of the Uterus (SMTU's) are generally classified into two types: benign tumors (leiomyomas) and malignant tumors (leiomyosarcomas).[1] This classification is based on three key histopathological features as suggested by Stanford in 1994: mitotic count, cytological atypia, and tumor cell necrosis.[2]

In addition, the intermediate morphological features of some problematic lesions may not fully conform to the criteria for malignancy and are therefore difficult to classify.[3] For this reason, a new diagnostic category of smooth muscle tumors of unknown malignant potential (STUMP) has been proposed bysome authors.[4,5]

STUMPs are tumors of a muscular origin, whose histological studies do not allow them to be formally classified as benign or malignant, their frequency of occurrence is rare.[6,7] As defined in the 2014 World Health Organization [WHO] classification, STUMPs are defined as entities whose pathological features exclude an equivocal diagnosis of leiomyosarcoma, however, they do not meet the criteria of leiomyoma or its variants.[4]

The clinical symptomatology and para-clinical studies, essentially represented by imaging, are identical to uterine leiomyomas. In the majority of cases, the positive diagnosis is confirmed postoperatively by the anatomopathological study of the surgical specimen, which remains a difficult examination given the histological complexity of STUMP.[8]

Although there are no guidelines for their management, surgery is generally accepted as a standard therapy while there is no role for adjuvant hormone therapy or chemotherapy. Short- and long-term monitoring is mandatory to detect recurrence or metastasis.[9]

The main objective of this article is to present a bibliographic review of the current state of the art and the latest research on these tumors, including their clinical, paraclinical, and anatomopathological aspects, in order to propose the best therapeutic strategy.

1. Diagnosis

1.1. Clinical study

Studies spread over several years have been able to gather a dozen cases in order to determine the epidemiological profile of the sepatients. The average age at the time of diagnosis was 45 years, without any medical history or pelvic irradiation or hormone replacement therapy, 50% of the cases were menopausal and 40% were classified as obese.[11]

The clinical manifestations are similar to those of myomas and can be summarized as an anemic syndrome, menorrhagia, metrorrhagia, menometrorrhagia were the most frequent symptoms in some studies,[10] pelvic pain of the heavier type, pelvic mass with or without signs of rectal or nerve compression, increased abdominal volume, ordiscovery in the context of consultation for infertility.

However, the clinical picture is variable, non-specific, and identical to that of uterine leiomyomas and therefore

there is no clinical specificity to suspect this diagnosis.

1.2. Paraclinical

Abdominal-pelvic ultrasound is the first-line examination to suggest leiomyoma or leiomyosarcoma and no ultrasound signs can guide the diagnosis. However, research by[10,11] has been conducted to evaluate and provide clinical and sonographic features that could support the early identification of this type of neoplasm. In these studies of 20 smooth muscle tumors including 18 STUMP tumors, the results of the ultrasound data showed that there is a significant difference between benign fibromyomas and STUMP tumors. In contrast to benign leiomyomas, which appear on ultrasound as a uniform hypoechoic image with shadows and peripheral vascularisation, the ultrasound characteristics of STUMP tumors may in certain cases differ slightly from those of leiomyomas, more often than not it is an intramyometric image with mixed echogenicity of heterogeneous appearance, and in 70% of the cases it contains anechoic areas of cystic appearance within the tumor without calcifications. The use of Doppler has shown circumferential vascularity in these myometrial images.[12]

Due to the advancement of technology, the authors in,[13] propose a way with contrast-enhanced MRI to differentiate between leiomyosarcomas, STUMP, and fibroids with an accuracy of 94% and specificity of 96% pending further studies in this direction. In his study, Zhang showed high uptake of 18F-Fluorodeoxyglucose (18FFDG) on proton emission tomography of this tumor.[14]

1.3. Anatomical pathology

Anatomical pathology study on surgical specimens allowed the diagnosis which was based on the Stanford criteria for the diagnosis of leiomyoma variants and leiomyosarcomas demonstrates the presence of cytonuclear atypia, mitosis <10phf and the presence of necrosis.[15]–[18] In addition, further methods have been proposed including immunohistochemistry with the study of progesterone receptor and cytochrome p53 or even Phospho-Histone H3(PHHH3).[19]

2. Treatment strategy and monitoring

Although there is no consensus on treatment modalities, surgical treatment remains the first choice. The definitive reference treatment is total hysterectomy with or without bilateral salpingo-oophorectomy, either vaginally, abdominally, or minimally invasive, while myomectomy can be considered in young patients who wish to preserve their fertility.[1,20,21]

For patients in whom STUMP has been surgically removed, baseline thoracic, abdominal, and pelvic CT scans should be performed to rule out subclinical lesions.[1,22]

STUMPs may recur as STUMPs or leiomyosarcomas. In case of recurrence, the treatment of choice is surgical removal followed by adjuvant therapy, such as pelvic irradiation, chemotherapy (doxorubicin and cisplatin), medroxyprogesterone and gonadotropin analog.[22] However, very little data is currently available on the efficacy of these agents.[1]

Due to the lack of consensus regarding follow-up protocols and the unpredictable course of POTS, women treated with hysterectomy should undergo periodic check-ups, including medical history, clinical and gynecological examination, and abdominal- pelvic ultrasound, Women treated with fertility-preserving surgery should have a clinical and ultrasound assessment every 6 months and pelvic MRI plus chest X-ray once a year for 5 years. Thereafter, follow-up protocols could be performed at longer intervals.[1,23]

3. CONCLUSION

Stump is a distinct anatomopathological entity due to its rarity of occurrence, its diagnostic difficulties, and its unpredictable evolution. Even if surgery remains the treatment of choice, the scarcity of studies and the absence of well-established consensus make the overall therapeutic approach unclear, hence the need for multidisciplinary management.

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