

## Histopathological, Proliferative, Apoptotic, and Hormonal Characteristics of Various Types of Leiomyomas

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**Abstract :** Uterine leiomyomas decrease the quality of life by causing significant morbidity among women of reproductive age. Histologically various types of leiomyoma's can be differentiated. We have analysed th histopathological, proliferation, apoptotic, and hormonal profile in different types of leiomyomas. Study included altogether 140 cases distributed into the following groups: group I-normal myometrium (20cases), group II-classic leiomyoma (69 cases), group III-cellular leiomyoma (15 cases), group IV-bizarre cell/atypical leiomyoma (22cases), group V-smooth muscle tumors of uncertain malignancy potential (STUMP) (8 cases) and group VI-leiomyosarcoma (6 cases). Together with classic histopathological features such as nuclear atypia, cellularity, presence of mitoses, vasculature and necrosis, immunohistochemical phenotype using antibodies against Ki67, Cas3, ER, and PR were analysed. The results of our study showed that leiomyomas are chartered with variable histopathological and immunohistochemical phenotype. Histopathological parameters mainly correlate with the degree of malignancy except for two bizarre/atypical leiomyoma and STUMP, where two distinct subgroups could be identified. In bizarre/ atypical leiomyoma, 31% of cases are characterized with the features of classic leiomyoma, whilst the rest of the cases reveal more atypical phenotype. In STUMP 37.5 % of cases are characterized with the features of atypical leiomyomas. The result of the immunohistochemical study also revealed that half of bizarre/atypical leiomyomas are characterized with the low proliferation index, high apoptotic index, and high ER and PR index, whilst another half is characterized with high proliferation index, low apoptotic index, and low ER and PR index. Similarly, part of the STUMP cases are characterized with low proliferation index, high Er, and PR index and whilst part of the cases are characterized with high proliferation index, low apoptotic index and low ER and PR index. The results of the histopathological and immunohistochemical study indicate that these two entities represent the heterogenous group of diseases, which might be the explanation of their different prognosis. Presented histopathological and immunohistochemical features should be considered in the diagnosis of myometrial smooth muscle tumors.

**Keywords :** proliferation, apoptosis, bizarre cell, leiomyosarcoma., leiomyoma

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