

# Mullerian Adenosarcoma Occurring in a Young Female and Originally Diagnosed as an Endometrial Stromal Nodule

Modupeola O. Samalia<sup>1</sup>, Tara Chang<sup>2</sup>, M. Ruhul Quddus<sup>3,\*</sup>, C. James Sung<sup>3</sup>, Katrine Hansen<sup>3</sup>,  
W. Dwayne Lawrence<sup>3</sup>

<sup>1</sup>Department of Pathology & Morbid Anatomy, Ahmadu Bello University & Ahmadu Bello University Teaching Hospital, Zaria, Nigeria

<sup>2</sup>Middle Tennessee Medical Center, Murfreesboro, TN

<sup>3</sup>Department of Pathology, Women & Infants Hospital, Alpert Medical School of Brown University, Providence, RI, USA

\*Corresponding author: [mquddus@wihri.org](mailto:mquddus@wihri.org)

**Abstract** Mullerian Adenosarcoma (MA) is most commonly encountered in postmenopausal females in the sixth decade of life. We present the case of a 21-year old female with a high BMI and a clinical presentation suggestive of polycystic ovarian disease; she presented with abnormal vaginal bleeding. A laparoscopy/hysteroscopy by her primary physician demonstrated an intracavitary and submucosal appearing mass which was clinically considered to be a polypoid submucosal leiomyoma. The patient underwent endometrial curettage. The specimen was comprised of multiple fragments of soft tan-red haemorrhagic tissues aggregating to 6.5 x 4.0 x 0.6 cm. An original diagnosis of endometrial stromal nodule was made on this material; however, on consultative review the diagnosis was changed to a mullerian adenosarcoma. No stromal overgrowth or heterologous differentiation was identified. Immunohistochemical studies demonstrated stromal cells were positive for oestrogen receptor (ER) and CD10. We emphasize the young age of this patient with a mullerian adenosarcoma as well as the pitfall of making a specific diagnosis of endometrial stromal neoplasms based on an endometrial curettage.

**Keywords:** Mullerian Adenosarcoma, endometrial stromal nodule, submucosal mass, endometrial curettage, young patient, diagnostic pitfall

**Cite This Article:** Modupeola O. Samalia, Tara Chang, M. Ruhul Quddus, C. James Sung, Katrine Hansen, and W. Dwayne Lawrence, "Mullerian Adenosarcoma Occurring in a Young Female and Originally Diagnosed as an Endometrial Stromal Nodule." *American Journal of Medical Case Reports*, vol. 4, no. 5 (2016): 150-152. doi: 10.12691/ajmcr-4-5-1.

## 1. Introduction

Mullerian adenosarcoma (MA) is an uncommon biphasic epithelial and mesenchymal tumour, considered to be of low malignant potential that most frequently arises from the uterine corpus [1,2,3,4]. MA has also been well documented to occur in extrauterine sites, most commonly in association with endometriosis [5]. The epithelial component is atypical but benign while the mesenchymal component is low grade malignant and may be a source of erroneous diagnosis due to stromal overgrowth and varied differentiation [1]. ESN is a monophasic mesenchymal neoplasm that is currently considered to be completely benign. We report a 21 year old female with a MA originally diagnosed as an endometrial stromal nodule.

## 2. Case Presentation

A 21-year old nulliparous female with high body mass index (BMI) and a clinical presentation suggestive of polycystic ovarian disease was seen by her primary physician

for abnormal vaginal bleeding. The clinical diagnosis of a pedunculated polypoid submucosal leiomyoma was made based on imaging studies and the hysteroscopic demonstration of an intracavitary and submucosal mass. The patient underwent endometrial curettage and the specimen was comprised of multiple fragments of soft tan red mucoid and haemorrhagic tissues aggregating to 6.5 x 4.0 x 0.6 cm. A diagnosis of endometrial stromal nodule was rendered on examination of the curettage at an outside facility, primarily based on the hypercellular proliferation of endometrial stroma-type cells.

However, the patient's symptoms persisted and the same histology slides were sent to a gynecologic pathology consultant for a second opinion a month later. On review neoplastic endometrial glands exhibited the typical leaf-like 'phyllodes' appearance accompanied by mild nuclear atypia, features characteristic of mullerian adenosarcoma (Figure 1). The stromal component showed prominent hypercellular periglandular cuffing and increased mitotic activity, especially in the areas of cuffing. No abnormal mitotic figures were present. There was no stromal overgrowth, high grade nuclear atypia, or heterologous differentiation. The stromal component was immunopositive for estrogen receptors (ER) and strongly

positive for CD10, a sensitive marker for endometrial stroma. The benign glandular component was high-lighted

by pacytokeratin immunostain.

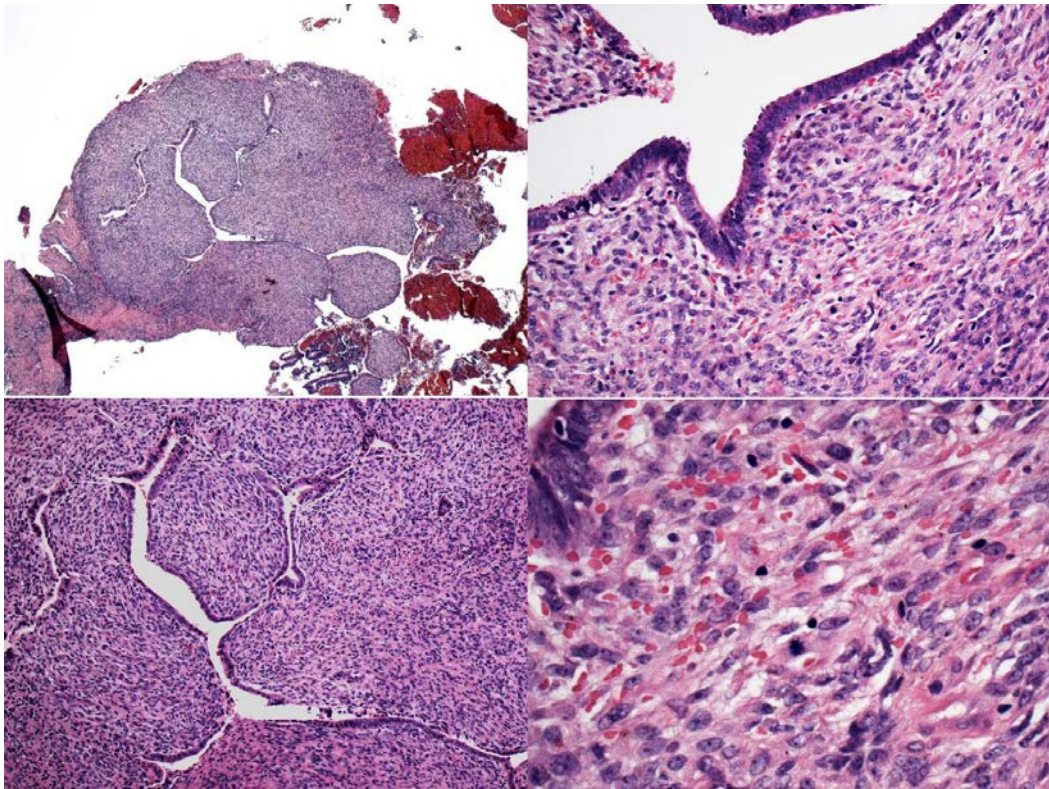


Figure 1. Photomicrographs show low and high power images (H&E: 4x, 10x, 20x, and 40x anticlockwise) of adenosarcoma

Figure 2 reveals CD10 and Pancytokeratin (AE1/AE3) staining. Based on these histopathologic findings the

tumor was diagnosed as a biphasic mullerian neoplasm consistent with mullerian adenosarcoma.

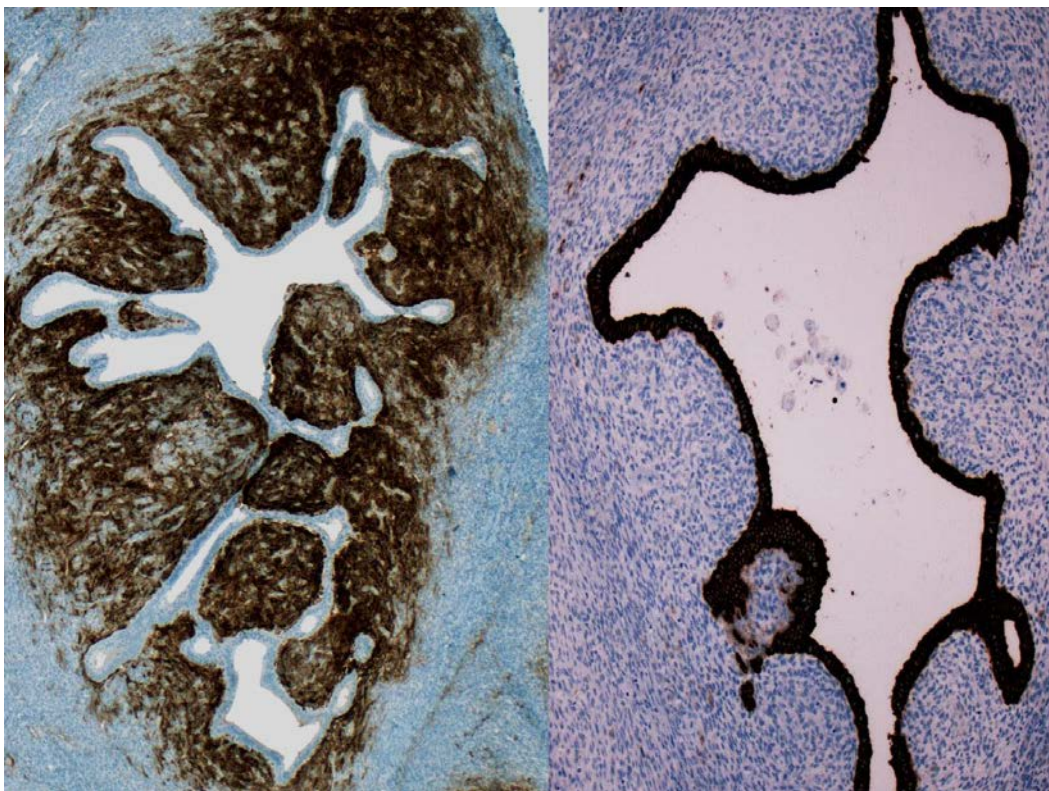


Figure 2. Photomicrograph of IHC stain with CD 10 on left. The endometrial stromal cells are reactive (IHC 10x) and pancytokeratin (AE1/AE3) stain of right (IHC 10x) staining the benign glandular component

Based on this revised diagnosis the patient underwent robotically-assisted total abdominal hysterectomy with

lymph node dissection. Examination of the hysterectomy specimen showed that the patient had no residual tumor.



As a result the tumor was staged as 1A adenosarcoma with lymph node dissection revealing no metastatic tumor. A four year follow-up revealed no evidence of recurrence or metastasis.

### 3. Discussion

Uterine mullerian adenosarcoma is rare, constituting approximately 8% of all uterine sarcomas and annually affecting less than 200,000 women in the US population, while uterine sarcomas in general account for only 4% of all uterine malignancies [6,7]. MA is typically a disease of postmenopausal females with a peak age incidence in the sixth decade of life although they have been documented to occur in a wide age range of 13-89 years [8,9,10]. MA is unusual in premenopausal females, possibly accounting for the erroneous diagnosis in this case, though it has been reported in children and adolescents. Only a few cases of MA without stromal overgrowth have been documented in premenopausal females less than 30 years old. Also, the occurrence of MA is strongly linked with hyperestrinism, oral contraceptive usage and tamoxifen therapy. This patient had a high BMI with features of polycystic ovarian disease, both of which are associated with high oestrogen levels. Indeed, Halliak et al reported a 25-year old woman with bilateral polycystic ovaries and MA, although the latter was associated with sarcomatous overgrowth. The endometrial stromal nodule is likewise rare and, actually, is the rarest of endometrial stromal neoplasms.

The typical clinical presentation of MA is that of abnormal vaginal bleeding and an intracavitary uterine polypoid mass, as seen in this case [5,8]. Grossly, most MAs are spongy and limited to the endometrium though variable myometrial involvement may be seen [4,9]. ESNs also may uncommonly exist as a polypoid intra-endometrial mass but in contrast to a MA, show a fairly typical gross picture characterized by a very well circumscribed tumor with a yellowish gross appearance-

ESN represents the endometrial stromal tumour that is the benign counterpart of a low grade endometrial stromal sarcoma [4]. ESN also has a propensity to occur in women in the 5<sup>th</sup> and 6<sup>th</sup> decades though any age can be affected. Uncommonly, ESNs exist as a polypoid projection located at the endomyometrial junction or, more frequently, in submucosal sites. Its microscopic features are also distinct from MA, with a sharp delineation between the peritumoral non-neoplastic cells and the neoplastic cells that always resemble proliferative-pattern endometrial stromal cells. The latter typically proliferate in an easily recognizable concentric pattern around spiral arterioles. In contrast, MA is composed of benign or atypical neoplastic glands in a homogenous low grade sarcomatous stroma exhibiting hypercellular periglandular 'cuffing'. The presence of myometrial invasion, heterologous components and stromal overgrowth are hallmarks of a more aggressive tumor [4].

### 4. Conclusions

There are two salient objectives of this report. Firstly, a reminder that mullerian adenosarcomas may be encountered in young reproductive age females (especially those with any reason to manifest hyperestrinism) despite their general

propensity to occur in perimenopausal or postmenopausal women. Secondly, a specific diagnosis of an endometrial stromal neoplasm should be made cautiously when based only on an endometrial curettage. Indeed, as noted above, an endometrial stromal nodule (ESN) and an invasive low grade endometrial stromal sarcoma (LGEES) appear histologically identical. The only difference between the two is the presence of overt invasion in LGEES, manifested by well circumscribed interface margins in the ESN. Since the tumor in an endometrial curettage is disrupted and its interface with the surrounding non-neoplastic tissue cannot be evaluated, the only reliable means of distinguishing the two is examination of an intact hysterectomy specimen.

### Consent

The patient has given consent for the use of the images and case presentation for educational and scientific purposes provided the unique patient identifiers (e.g, name, date of birth, social security number, etc.) are not revealed.

### Competing Interest

The authors declare no competing financial interest. All authors actively participated in the case reporting.

MOS:	Fellow on the case
TC:	Initially received the case
MRQ:	Manuscript preparation and photomicrography
CJS:	Reviewed the case report
KH:	Reviewed the case report
WDL:	Worked –up the case and conformed diagnosis

### References

- [1] McCluggage WG. Mullerian adenosarcoma of the female genital tract. *Adv Anat Pathol* 2010;17:122-29.
- [2] Nucci MR, Quade BJ. Adenosarcoma, Mixed Epithelial and Mesenchymal Tumors, Uterine Mesenchymal Tumors In: Crum CP, Nucci MR, Lee KR (eds). *Diagnostic Gynecology and Obstetrics Pathology 2<sup>nd</sup> ed* Elsevier Saunders; 2011:625-6.
- [3] Yang C, Oh HK, Kim D. Mullerian adenosarcoma arising from rectal endometriosis. *Ann Coloproctol* 2014; 30:232-6.
- [4] Clement PB. Mullerian adenosarcoma of the uterus with sarcomatous overgrowth: a clinicopathologic analysis of 10 cases. *Am J Surg Pathol* 1989; 13:28-38.
- [5] Clement PB, Scully RE. Mullerian adenosarcoma of the uterus: a clinicopathological analysis of 100 cases with a review of the literature. *Hum Pathol* 1990; 21:363-81.
- [6] Hallak M, Peipert JF, Heller PB, Sedlacek TV, Schauer GM. Mullerian adenosarcoma of the uterus with sarcomatous overgrowth. *J Surg Oncol* 1992;51:68-70.
- [7] Tjalma WA, Michener CM. Mullerian adenosarcoma of the uterus associated with long term oral contraceptive use. *Eur J Obstet Gynecol Reprod Biol* 2005;119:253-54.
- [8] Clement PB, Oliva E, Young RH. Mullerian adenosarcoma of the uterine corpus associated with tamoxifen therapy: a report of six cases and a review of tamoxifen associated endometrial lesions. *Int J Gynecol Pathol* 1996;15: 222-29.
- [9] Robert J Kurman, Maria Luisa Carcangiu, C. Simon Herrington, Robert H Young. Endometrial stromal tumour, Mesenchymal tumours- Tumours of the Uterine corpus In: Robert J Kurman, Maria Luisa Carcangiu, C. Simon Herrington, Robert H Young (eds). *World Health Organization Classification of Tumours of the Female Reproductive Organs 4<sup>th</sup> ed*. IARC:Lyon 2014; 141-42.
- [10] Soslow RA, Oliva E. Mullerian adenosarcomas: an immunophenotypic analysis of 35 cases. *Am J Surg Pathol* 2008; 32: 1013-21.