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Short Communication

Connate and Emanate - Endo-cervical Glandular Lesions

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Endo-cervical glandular lesions are segregated into benign glandular lesions, endo-cervical glandular dysplasia (EGD) and adenocarcinoma *in situ* (AIS). Endo-cervical glandular lesions can be appropriately scored with a three tiered scoring system and do not manifest as a precursor of cervical adenocarcinoma *in situ*.

The condition as discerned with examination of cervical or vaginal smears may exhibit concurrent squamous dysplasia. Endo-cervical glandular lesions are devoid of specific contributory factors or appropriate therapeutic strategies. Severe instances of endo-cervical glandular lesions are designated as endo-cervical glandular dysplasia or atypical hyperplasia [1,2].

Alternatively, endo-cervical glandular lesions can be nomenclated as 'cervical glandular intraepithelial neoplasia (CGIN)' which is further categorized into

- Low grade CGIN (LCGN) which appears concordant to endo-cervical glandular dysplasia (EGD)
- High grade CGIN (HCGIN) which concurs with adenocarcinoma *in situ* (AIS) [1,2].

Atypical oxyphilic metaplasia is an incidentally discovered, benign lesion wherein endo-cervical glands are layered with enlarged, cuboidal or polygonal epithelial cells imbued with dense, eosinophilic, focally vacuolated cytoplasm and variably enlarged, hyperchromatic nuclei with multiple lobes. Multi-nucleated cells can be observed. Mitotic activity or stratification of layering epithelium is absent [1,2].

Endo-cervical glandular dysplasia is composed of dysplastic lesions of endocervix which can be appropriately categorized with demonstration of dysplasia adjacent to foci of adenocarcinoma *in situ* or invasive adenocarcinoma. In contrast to adenocarcinoma *in situ* or invasive adenocarcinoma, younger subjects are incriminated with endo-cervical dysplasia [1,2].

High risk variants of human papilloma virus (HPV) may be concurrent with a subset of dysplastic lesions. Majority of instances of glandular dysplasia are diffusely immune reactive to p16 [1,2].

However, certain instances may depict absence of co-existent dysplasia or adenocarcinoma *in situ*, lack of HPV infection within atypical glandular lesions, emergence of endo-cervical dysplasia non concurrent with HPV infection along with elevated Ki67 proliferation index and lack of diffuse immune reactivity to p16 in glandular dysplasia [1,2].

Endo-cervical adenocarcinoma *in situ* (AIS) emerges as a precursor to invasive endo-cervical adenocarcinoma concurrent to HPV infection. However, apart from endo-cervical adenocarcinoma *in situ*, appropriate discernment of atypical endo-cervical lesions can be challenging [1,2].

Upon cytological examination, endo-cervical cells display a 'picket-fence' or 'honeycomb' configuration. Mucin secreting glandular cells exhibit mildly enlarged, basal nuclei with polarity and apical mucin vacuoles. Nuclear chromatin is finely granular and evenly disseminated with miniature nucleoli. Cellular cytoplasm is vacuolated or granular [1,2]. Generally, endo-cervical cells depict morphological alterations concordant with extensive inflammation or reactive atypia although manifestations of adenocarcinoma are inadequately defined. Neoplastic cells demonstrate decimated

cytoplasm, irregular nuclear membrane, hyperchromatic nuclei and prominent nucleoli [1,2].

Upon microscopic examination, glandular atypia enunciates glandular cells incorporated with hyperchromatic nuclei. Nucleo-cytoplasmic ratio is unaltered. Columnar epithelium layering the glands exhibits minimal pseudo-stratification [1,2].

Lesion is devoid of cribriform areas, papillary projections or glandular crowding. Mitotic figures are occasionally observed.

Alternatively, singular gland may exemplify significant cellular and nuclear atypia [1,2].

Glandular dysplasia morphologically simulates adenocarcinoma *in situ*. However, glandular nuclei appear non malignant. Few mitotic figures are discerned. Alternatively, singular endo-cervical gland demonstrates malignant metamorphosis [1,2].

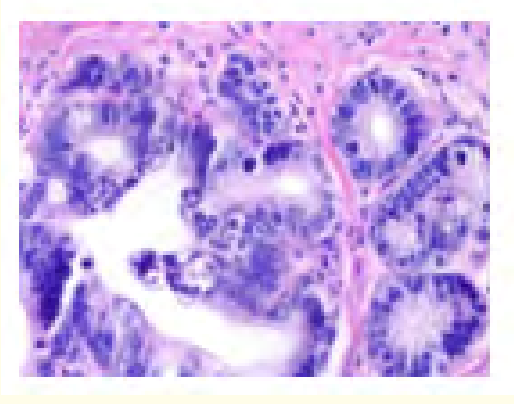

Figure 1: Endo-cervical glandular lesion depicting glandular articulations with irregular outline, stratification, hyperchromatic and pleomorphic nuclei [5].

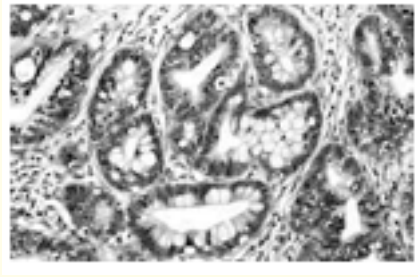

Figure 2: Endo-cervical glandular lesion delineating glandular configurations with mucin secretion, hyperchromatic, stratified nuclei within layering epithelium and few mitotic figures [6].

Score	Epithelial stratification	Nuclear atypia	Mitosis and apoptosis
0	none	As normal	None
1	Mild (~1/3rd epithelial thickness)	Miniature or mildly enlarged, hyperchromatic, dis-polar, uniform, absent nucleoli	<0.5 per gland
2	Moderate (~2/3rd epithelial thickness	Up to 3X diameter, moderate anisocyto-sis, hyperchromasia, dis-polarity, occasional nucleoli	0.6 to 3.0 per gland
3	Up to luminal surface	>3X diameter, marked anisocytosis, hyperchromasia, dis-polarity, frequent, prominent nucleoli	>3 per gland

Table 1: Silverberg scoring system of non invasive endo-cervical glandular lesions [2,3].

Endo-cervical glandular lesions are categorized as

- Benign lesion: score 0 to 3.
- Endo-cervical glandular dysplasia (EGD): score 4 to 5.
- Adenocarcinoma *in situ* (AIS): score 6 to 9.

Endo-cervical glandular lesions depicting dysplasia are immune reactive to p16. Foci of endo-cervical atypia or reactive lesions appear immune non reactive [3,4].

Endo-cervical glandular lesions are immune non reactive to human papilloma virus (HPV) [3,4].

Endo-cervical glandular lesions require segregation from conditions such as Arias-Stella reaction, inflammation, micro-glandular hyperplasia, metaplasia and glandular alterations due to radiation or ingestion of tamoxifen or oral contraceptives [3,4].

On account of absence of widespread consensus and debatable biologic behaviour of endo-cervical glandular lesions, World Health Organization (WHO) recommends inclusion of adenocarcinoma *in situ* (AIS) as a precursor to emergence of cervical glandular neoplasms [3,4].

Bibliography

1. Rivera-Colón G and Zheng W. "Endocervical neoplasia: Pathologic updates in diagnosis and prognosis". *Seminars in Diagnostic Pathology* 39.3 (2022): 213-227.

2. Kim NR., *et al*. "Clinical Outcomes Associated with Endocervical Glandular Involvement in Patients with Cervical Intraepithelial Neoplasia III". *Journal of Clinical Medicine* 11.11 (2022): 2996.

3. Perkins RB., *et al*. "ASCCP Risk-Based Management Consensus Guidelines for Abnormal Cervical Cancer Screening Tests and Cancer Precursors". *Journal of Lower Genital Tract Disease* 24 (2020): 102-131.

4. Spinillo A., *et al*. "The relationship of human papillomavirus infection with endocervical glandular involvement on cone specimens in women with cervical intraepithelial neoplasia". *Gynecologic Oncology* 159 (2020): 630-635.

5. Image 1 Courtesy: Science direct.

6. Image 2 Courtesy: Journal of Pathology.