Acta Scientific CANCER BIOLOGY (ISSN: 2582-4473)

Volume 7 Issue 9 November 2023

Editorial

Laminous and Native-Stratified Mucin Producing Intraepithelial Lesion- Uterine Cervix

Anubha Bajaj*

Department of Histopathology, Panjab University/A.B. Diagnostics, India

***Corresponding Author:** Anubha Bajaj, Department of Histopathology, Panjab University/A.B. Diagnostics, India.

Received: August 17, 2023

Published: October 01, 2023

Stratified mucin producing intraepithelial lesion of uterine cervix is an infrequently discerned, premalignant, intraepithelial lesion associated with infection with human papilloma virus (HPV). Lesion commonly arises from reserve cells permeating transformation zone of uterine cervix. Aforesaid reserve cells may undergo carcinogenesis and trans-differentiation.

Initially scripted by Park et al in 2000, stratified mucin producing intraepithelial lesion (SMILE) of uterine cervix appears morphologically concordant with squamous intraepithelial lesions (SIL) or adenocarcinoma in situ (AIS) [1]. The contemporary classification of World Health Organization (WHO) categorizes stratified mucin producing intraepithelial lesion (SMILE) as a variant of adenocarcinoma in situ. However, subcategorization of lesion as a variant of adenosquamous intraepithelial lesion, arising on account of 'hybrid' morphological features, remains debatable.

Stratified mucin producing intraepithelial lesion (SMILE) of uterine cervix frequently coexists with pre-invasive cervical lesions as squamous intraepithelial lesion, adenocarcinoma in situ or invasive carcinoma cervix. Nevertheless, lesion is preponderantly associated with adenocarcinoma in situ of uterine cervix. Stratified mucin producing intraepithelial lesion of uterine cervix appears as a morphologic indicator of instability or ambiguity of constituent epithelial cell phenotypes [2,3]. Currently, lesion is posited to be precursor of a unique, invasive carcinoma cervix designated as 'invasive stratified mucin producing carcinoma'. Additionally, invasive stratified mucin producing intraepithelial lesion requires demarcation from mucoepidermoid carcinoma of uterine cervix [2,3].

Stratified mucin producing intraepithelial lesion is encountered within 0.6% of cervical specimens as obtained with surgical tissue sampling.

Cytological assessment delineates cellular clusters demonstrating moderate crowding and a jagged perimeter. Cytoplasmic margins appear distinct and well defined. Tumour cell nuclei appear spherical with moderate to significant irregularity of nuclear membrane and disseminated fine to coarse, granular nuclear chromatin with absence of prominent nucleoli [4,5]. Cytological features of stratified mucin producing intraepithelial lesion appear reminiscent of adenocarcinoma in situ of uterine cervix. However, cells constituting stratified mucin producing intraepithelial lesion are characteristically devoid of prominent nucleoli and 'feathering'. Cellular clusters delineate a palisading, pseudostratified appearance with protrusion of nuclei or cytoplasm upon the edges, a feature denominated as 'feathering' or 'bird-tail' appearance [4,5].

Upon microscopy, multi-layering and stratification of epithelial cells is encountered comprehensively within epithelial thickness. Implicated epithelial cells are incorporated with intracytoplasmic mucin or cytoplasmic vacuoles. Foci of pleomorphic and hyperchromatic nuclei are enunciated. Spacing of epithelial cell nuclei with intracytoplasmic mucin may be preponderant. Mitotic figures and apoptotic bodies may be discerned [4,5]. The epithelial stromal interface of a predominantly in situ lesion exhibits spherical or lobular contour. However, apparent configuration of glandular articulations is absent, in contrast to lesions of adenocarcinoma in situ [4,5].

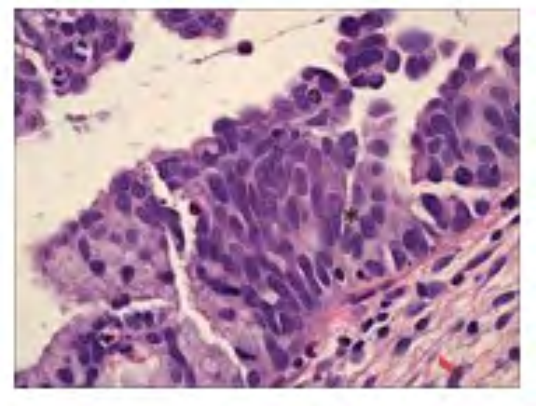

Figure 1: Stratified mucin producing intraepithelial lesion delineating multiple layers of epithelial cells imbued with intracytoplasmic mucin and cytoplasmic mucin vacuoles with pleomorphic, hyperchromatic nuclei. Mitotic figures are discerned [8].

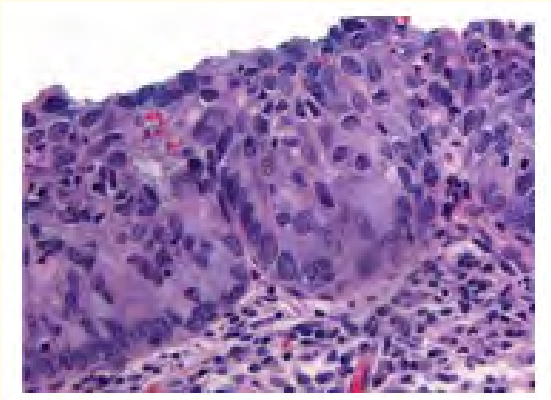

Figure 2: Stratified mucin producing intraepithelial lesion composed of multi-layered epithelial cells pervaded with intracytoplasmic mucin and cytoplasmic mucin vacuoles with pleomorphic, hyperchromatic nuclei. Mitotic figures are observed [9].

Cytological features	HSIL with glandular involvement	Glandular lesion
Architecture	Syncitial clusters	Loss of honeycomb pattern
	Peripheral nuclear flattening	Loss of nuclear polarity
	Central whirling	Nuclear crowding with overlapping
Nuclear features		
Chromatin pattern	Coarse	Fine
Nuclear grooves	Frequently present	Absent
Nucleoli	Absent	Frequently present
Cytoplasmic features		
Cytoplasmic processes	Present	Absent
Vacuolation	Absent	Present

Table 1: Differentiation between HSIL with glandular involvement and glandular lesion [5].

HSIL: High Grade Squamous Intraepithelial Lesion

Tumour cells display intense cytoplasmic and nuclear immune reactivity to p16. Besides, intracytoplasmic mucin may be highlighted with mucicarmine. Ki67 proliferative index is elevated. Constituent cells of stratified mucin producing intraepithelial lesion appear immune non reactive to CK5, CK14, p63 or IMP3 [6,7]. Stratified mucin producing intraepithelial lesion necessitates segregation from neoplasms such as adenocarcinoma in situ of uterine cervix, atypical immature squamous metaplasia or squamous intraepithelial lesion (SIL) [6,7]. Stratified mucin producing intraepithelial lesion of uterine cervix may be managed in concordance with therapeutic strategies applicable to adenocarcinoma in situ of uterine cervix [6,7]. Lesions may be subjected to cold knife conisation or total abdominal hysterectomy. Majority of lesions can be optimally alleviated with conisation. Besides, close monitoring with colposcopy, assessment of cytological features and evaluation of human papilloma virus (HPV) infection, especially within endocervical lesions is

recommended. Total abdominal hysterectomy may be beneficially adopted in women demonstrating malignant metamorphosis of lesion confined within endocervical tissue perimeter or women with undesired fertility [6,7].

Bibliography

1. Park JJ., *et al*. "Stratified mucin-producing intraepithelial lesions of the cervix: adenosquamous or columnar cell neoplasia?" *The American Journal of Surgical Pathology* 24.10 (2000): 1414-1419.

2. Delrue C., *et al*. "Stratified Mucin-producing Intraepithelial Lesions of the Cervix: Clinical Diversity of Cases and Literature Review". *Anticancer Research* 42.2 (2022): 1175-1180.

3. Strojan Fležar M., *et al*. "Stratified Mucin-Producing Intraepithelial Lesion (SMILE) of the Uterine Cervix: High-Risk HPV Genotype Predominance and p40 Immunophenotype". *Cells* 10.8 (2021): 2039.

4. Choi S., *et al*. "Invasive Stratified Mucin-producing Carcinoma (ISMC) of the Uterine Cervix: Clinicopathological and Molecular Characteristics With Special Emphasis on the First Description of Consistent Programmed Death-ligand 1 (PD-L1) Over-expression". *Cancer Genomics Proteomics* 18.5 (2021): 685-698.

5. Shin E., *et al*. "Trouble-makers in cytologic interpretation of the uterine cervix". *Journal of Pathology and Translational Medicine* 57.3 (2023): 139-146.

6. Stolnicu S., *et al*. "Invasive Stratified Mucin-producing Carcinoma (ISMC) of the Cervix: A Study on Morphologic Diversity". *The American Journal of Surgical Pathology* 44.7 (2020): 873-880.

7. Horn LC., *et al*. "Invasive stratified mucin-producing carcinoma (i-SMILE) of the uterine cervix: report of a case series and review of the literature indicating poor prognostic subtype of cervical adenocarcinoma". *Journal of Cancer Research and Clinical Oncology* 145.10 (2019): 2573-2582.

8. Image 1 Courtesy: Cytojournal.com.

9. Image 2 Courtesy: Sunnybrook Hospital.