Transitional Metaplasia in Cervical Smears: A Case Report

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ABSTRACT

The transitional metaplasia of the cervix is a benign condition that is associated with atrophy and occurs mainly in peri and postmenopausal women.

This case reports a conventional cervical cytology, stained by the Papanicolaou method, of a 57 year-old woman, whose diagnosis was Atypical Squamous Cells not excluding High Grade Intraepithelial Lesion (ASC-H). A subsequent histological examination revealed transitional metaplasia of the epithelium.

The transitional metaplasia has features that can be mistaken for squamous cell atypia, making cytological interpretation difficult to perform. The most crucial features for the identification and distinction from lesions are the absence of cytological atypia and the presence of longitudinal grooves in the nuclei, although these are not specific for this condition.

Key-words: cervical cytology, conventional smear, transitional metaplasia, pitfall
CLINICAL HISTORY

The following case focuses on a 57 year-old woman, in menopause since the age of 53, with cytologies reported as Negative for Intraepithelial Lesion or Malignancy (NILM) until 2009. On February 2011, she made a conventional cervicovaginal cytology whose result was ASC-H. A few months later, on June 2011, the same patient was submitted to a conization and the histological diagnosis was chronic cervicitis. On December 2011, she was submitted to a total hysterectomy, which final diagnosis was transitional metaplasia.

Cytological Findings

The Papanicolaou stained cervical cytology showed an atrophic pattern in a hematic background, onto which cellular groups in cohesive sheets could be observed (Fig.1).

A larger magnification allowed to observe groups of cells with syncytial formation, increased nuclear/cytoplasmic ratio (about three-time normal), hyperchromasia, irregular chromatin pattern and cellular disorganization (Fig.2). Some cellular groups also exhibited pleomorphism and nuclear hyperchromasia (Fig.3), as well as characteristics suggestive of longitudinal grooves (Fig.4). The cytological features were interpreted as Atypical Squamous Cells not excluding High Grade Intraepithelial Lesion (ASC-H).

Fig. 1 – General atrophic pattern of the smear (conventional smear, Papanicolaou stain, 10x).

Fig. 2 – Syncytial-cell formation with increased nuclear/cytoplasmic ratio, nuclear hyperchromasia and cellular disorganization (conventional smear, Papanicolaou stain, 40x).

Fig. 3 – Cellular group with polymorphism and increased nuclear/cytoplasmic ratio (conventional smear, Papanicolaou stain, 40x).

Fig. 4 – Cellular group with syncytial-cell formation and increased nuclear/cytoplasmic ratio, with manifest longitudinal grooves (arrow) (conventional smear, Papanicolaou stain, 40x).
**Histological Findings**

The histological examination of the conization product revealed chronic cervicitis, with cytopathic alterations suggestive of HPV infection, with no dysplasia. The hysterectomy specimen showed a thickened squamous epithelium of the cervix with some cellular disorganization, cells containing oval nuclei, longitudinal grooves and low proliferative index by Ki67 immunostaining – features suggestive of an atrophic epithelium with transitional metaplasia (Fig. 5).

**ANALYSIS AND DISCUSSION**

The transitional metaplasia of the cervix is an underrated benign pathology that occurs mainly in peri or postmenopausal women, with or without association to atrophy. This physiological process usually affects the exocervix, occasionally involving the transformation zone and, in rarer cases, the vagina. The detection of transitional metaplasia in cervicovaginal cytologies is rare, being noticed mainly in histological samples. This cytological entity can be mistaken with malignant findings, simulating High-grade Squamous Intraepithelial Lesion (HSIL) or ASC-H\(^1\)\(^-\)\(^3\).

The transitional metaplasia can result from chronic irritant external stimuli, as well as chemicals, inflammation/infection, endocrine and reparative alterations. The metaplasia may also arise from hyperplasia of the basal reserve cells in the squamocolumnar junction, with transformation into mature or immature metaplastic stratified squamous epithelium\(^2\)\(^-\)\(^3\).

The cytological features of the transitional metaplasia include groups of basal and parabasal cells in cohesive sheets and with syncytial disposition, oval/fusiform nuclei, usually with fine chromatin and longitudinal grooves, and often with the presence of perinuclear haloes. This specimen might be mistaken for non-benign cytological findings, mainly due to the syncytial arrangement of the cellular clusters\(^1\). Normally, in the transitional metaplasia there are no specific criteria, but some of the findings are similar to those in case of lesions, such as irregular nuclear contours, coarsely distributed chromatin, cytological atypia or mitotic activity\(^1\)\(^-\)\(^4\).

This case reflects on the difficulty in detecting transitional metaplasia in gynecological cytology samples, what constitutes a pitfall in gynecological cytology. As a consequence of the cytological interpretation of ASC-H, the therapeutic approach is more aggressive, a colposcopy and eventual biopsy may be recommended\(^5\), which is not required in the presence of transitional metaplasia that is a benign condition.

Recognizing this type of metaplasia, as well as its cytomorphological features and clinical data, is fundamental to a correct diagnosis in cervicovaginal cytology.

**REFERENCES**


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![Fig. 5 – Uterine cervix with transitional metaplasia. Thickened squamous epithelium, with some cellular disorganization. Presence of nuclei with longitudinal grooves (arrow) (H&E stain, 40x).](image-url)
