

Background

SMILE of the cervix is a rare high-risk HPV-associated premalignant cervical lesion. SMILE has features overlapping with those of high-grade squamous intraepithelial lesion (HSIL) and adenocarcinoma in situ (AIS). Despite this, it is currently treated as a variant of AIS. It often coexists with HSIL, AIS, or invasive carcinoma and has an invasive counterpart. We aim to describe the successful management of HPV-associated SMILE in a regional hospital in Australia.

Case Study

A 29-year-old G2P0 woman was referred following cervical screening showing HPV non 16/18 positivity. Colposcopy assessment demonstrated low-grade features with focal acetowhite areas. Directed cervical biopsies revealed HSIL with features consistent with SMILE. The patient underwent cervical conization and endocervical curettage.

Results

Histology of the endocervical curetting was unremarkable. Cone biopsy demonstrated a SMILE involving the transformation zone with p16 and PAS-D positivity. There was no evidence of HSIL, AIS or invasive malignancy. The surgical margins were free of disease. The postoperative course was uncomplicated, and the patient remains under surveillance.

Discussion

AIS of the cervix can be broadly categorised into HPV associated and HPV independent. AIS HPV-associated cases are associated with high-risk HPV and show high-risk integrated staining on immunohistochemistry for p16. P16 is a surrogate marker of HPV infection. The presence of AIS is often associated with HSIL, the latter of which is a precursor to squamous cell tumours of the cervix. An important subtype of AIS to consider is SMILE, which is characterised by stratified epithelium with mucin throughout all layers that show features of atypia, such as hyperchromasia, nuclear membrane irregularities, loss of polarity and mitoses. SMILE can mimic HSIL colonising endocervical glands on low power. As such, it is important to recognise this entity for accurate diagnosis, which guides subsequent therapeutic management.

This case highlights the need for heightened clinical awareness of SMILE in patients with abnormal cervical screening results, even when colposcopy findings suggest low-grade lesions. Documenting such cases expands the limited literature on the diagnosis and management of SMILE, particularly in regional settings where experiences with SMILE may be limited.

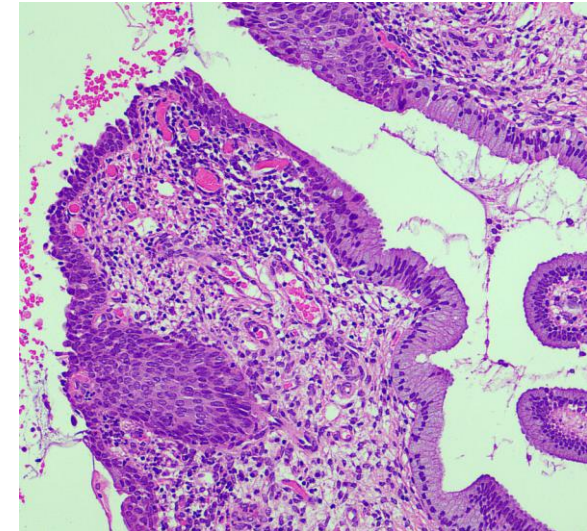


Figure 1: x 200 magnification. PAS-D stain highlights intracytoplasmic mucin

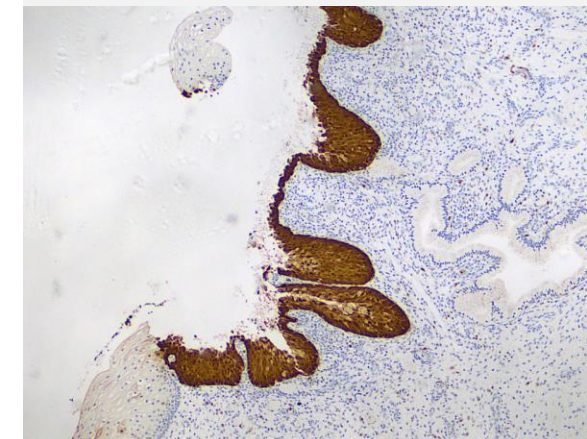


Figure 2: Immunohistochemistry for p16 shows a high-risk integrated expression pattern.