Verrucous carcinoma of the gum. Expression patterns of CK13 and CK17

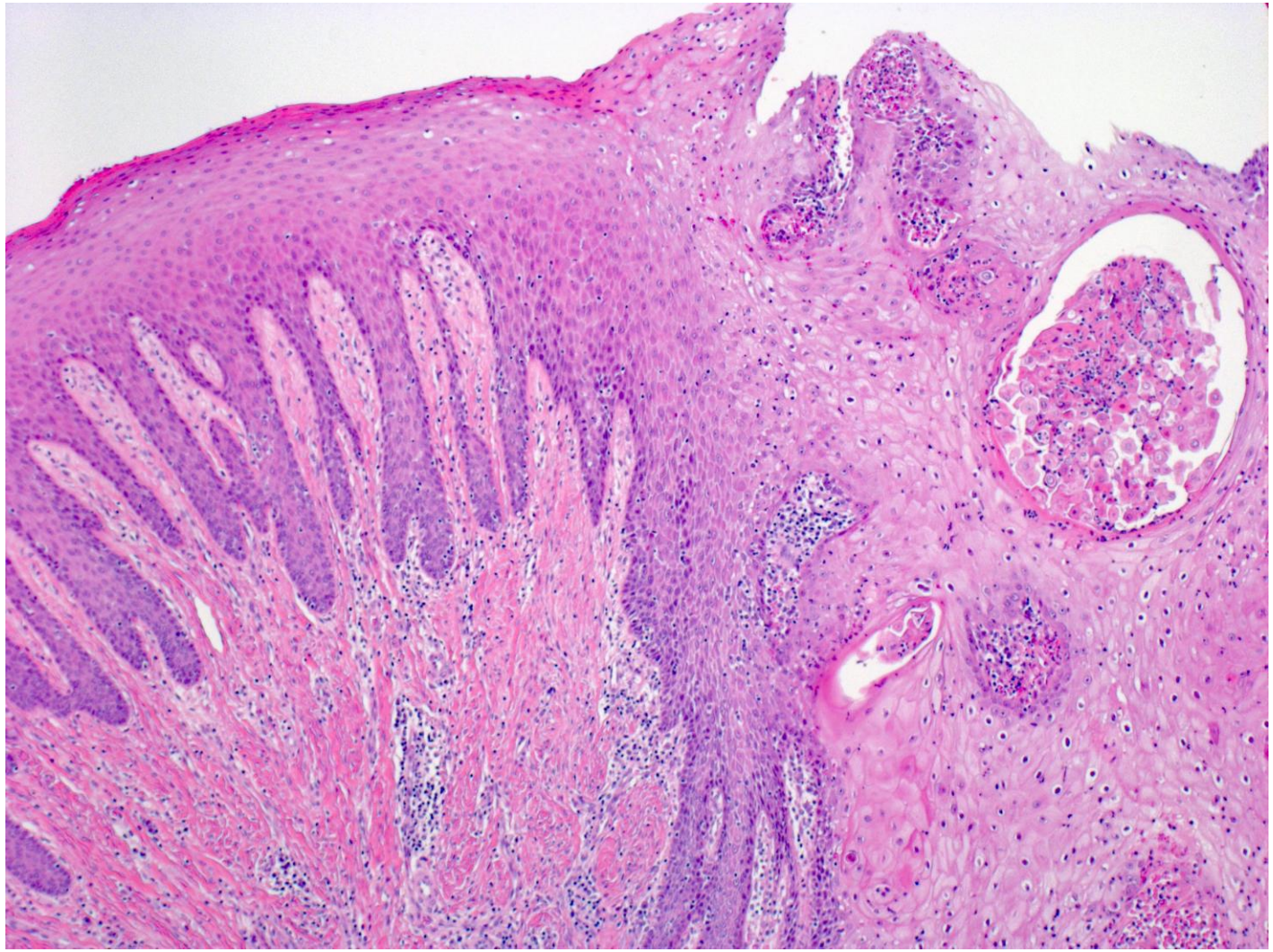
Verrucous carcinoma is a low-grade variant of squamous cell carcinoma with specific morphologic, cytokinetic and clinical features. Despite low mitotic activity and slow growth, it can infiltrate adjacent tissues in advanced stages but does not metastasize. The most frequently affected site is the oral cavity. Oral verrucous carcinoma must be differentiated from conventional squamous cell carcinoma.

Immunohistochemically, CK13 is consistently expressed in normal and hyperkeratotic squamous mucosa, while CK17 is negative. In dysplastic and carcinomatous squamous mucosa, in contrast, CK13 expression is weakened and CK17 is strongly expressed.

Ref.-1: Kristofelc N, et al. Oral verrucous carcinoma: a diagnostic and therapeutic challenge. Radiol Oncol 2023; 57(1): 1-11. doi: 10.2478/raon-2023-0015

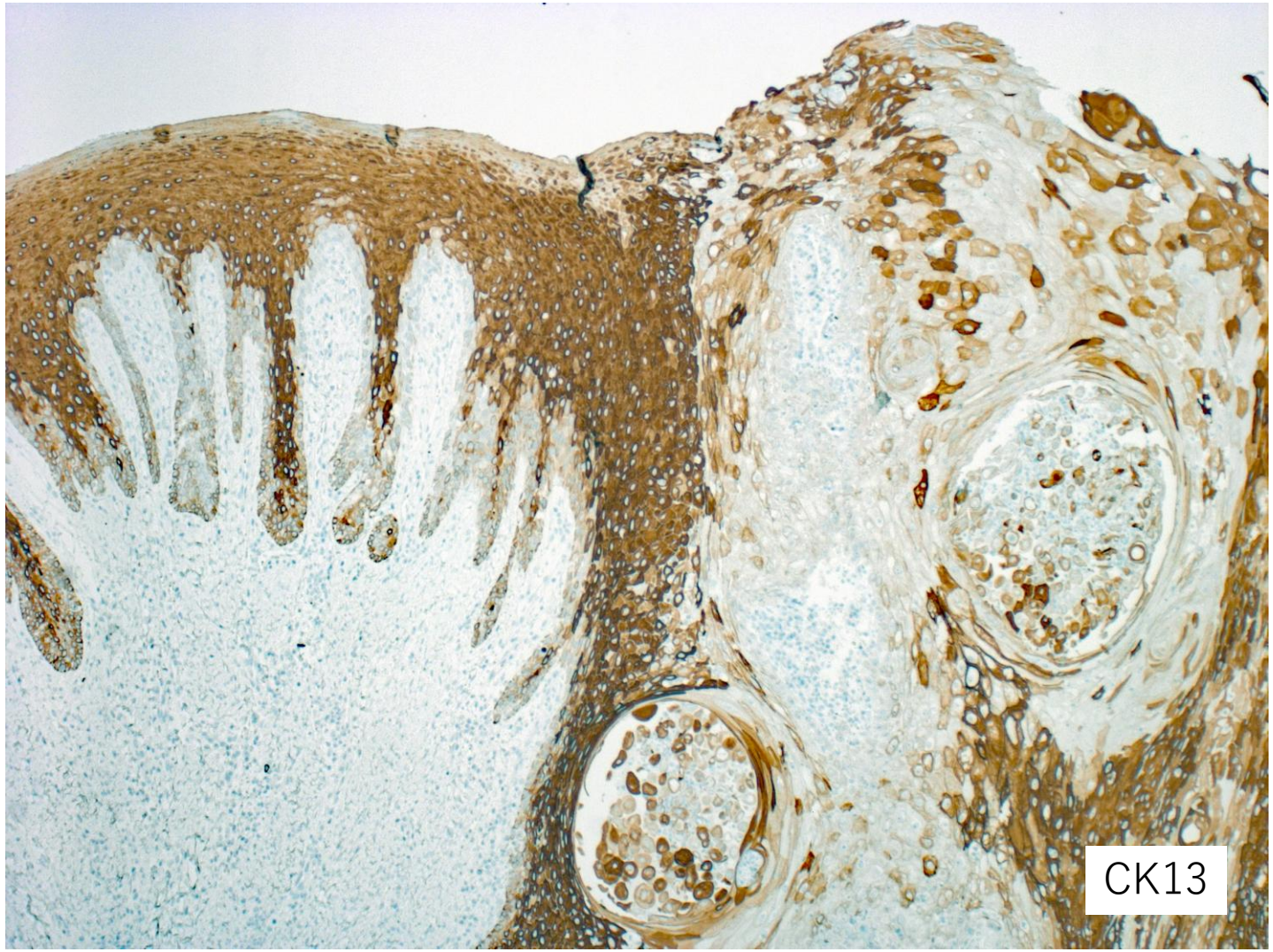
Ref.-2: Okada Y, Moride M. Immunohistochemical study of differential expressions of cytokeratin-13, -14, -17 and p53 in epithelial dysplasia and carcinoma of the tongue. H Hard Tis Biol 2010; 19(2): 123-130. doi: 10.2485/jhtb.19.123

Case 1
(53M)



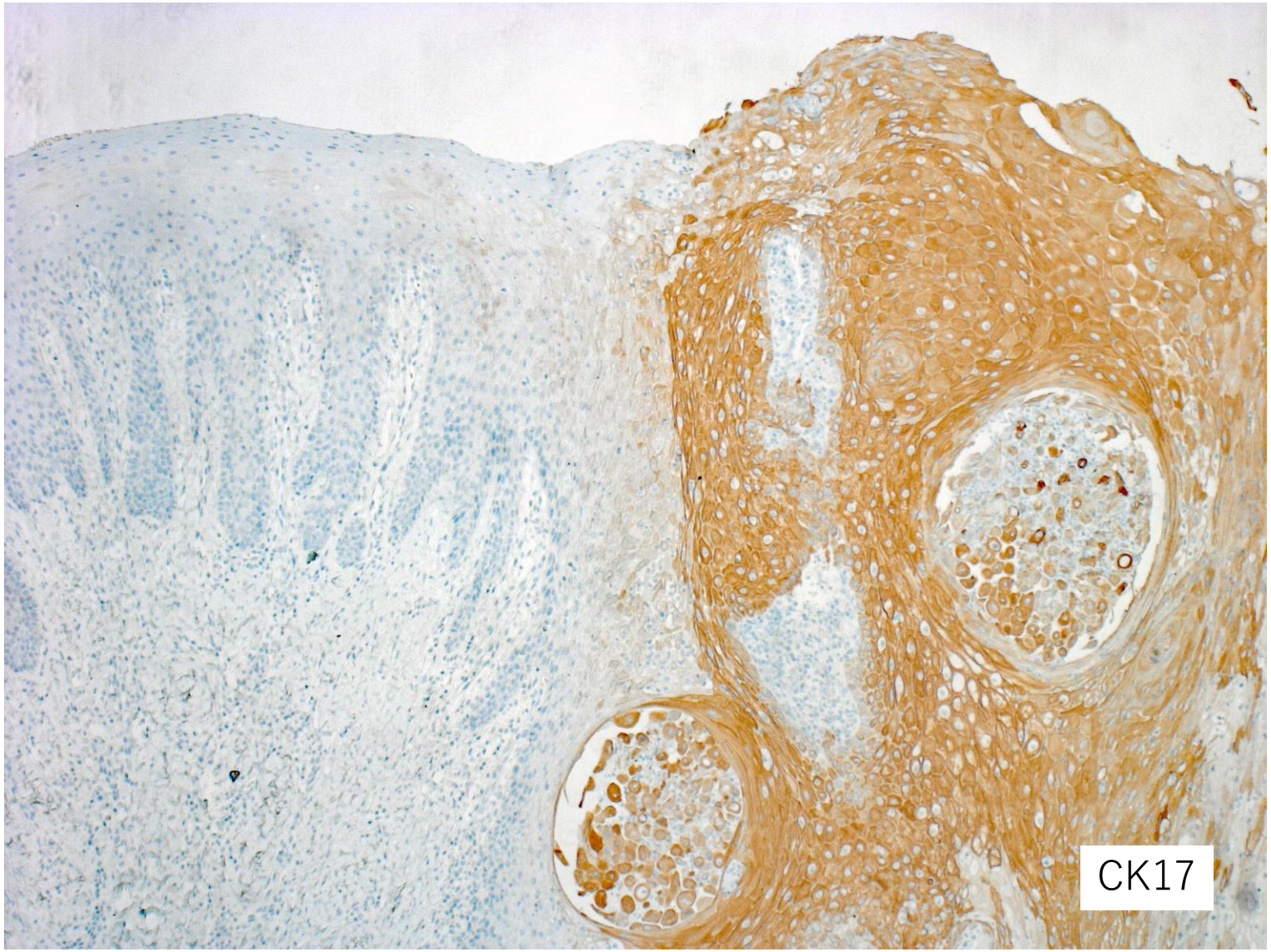
Verrucous carcinoma of the gum seen in a 53 y-o male patient. Downward growing cancer cells with minimal nuclear atypia (right half) is seen adjacent to non-cancerous squamous mucosa with reactive acanthosis (left half) (H&E-1a).

Case 1
(53M)



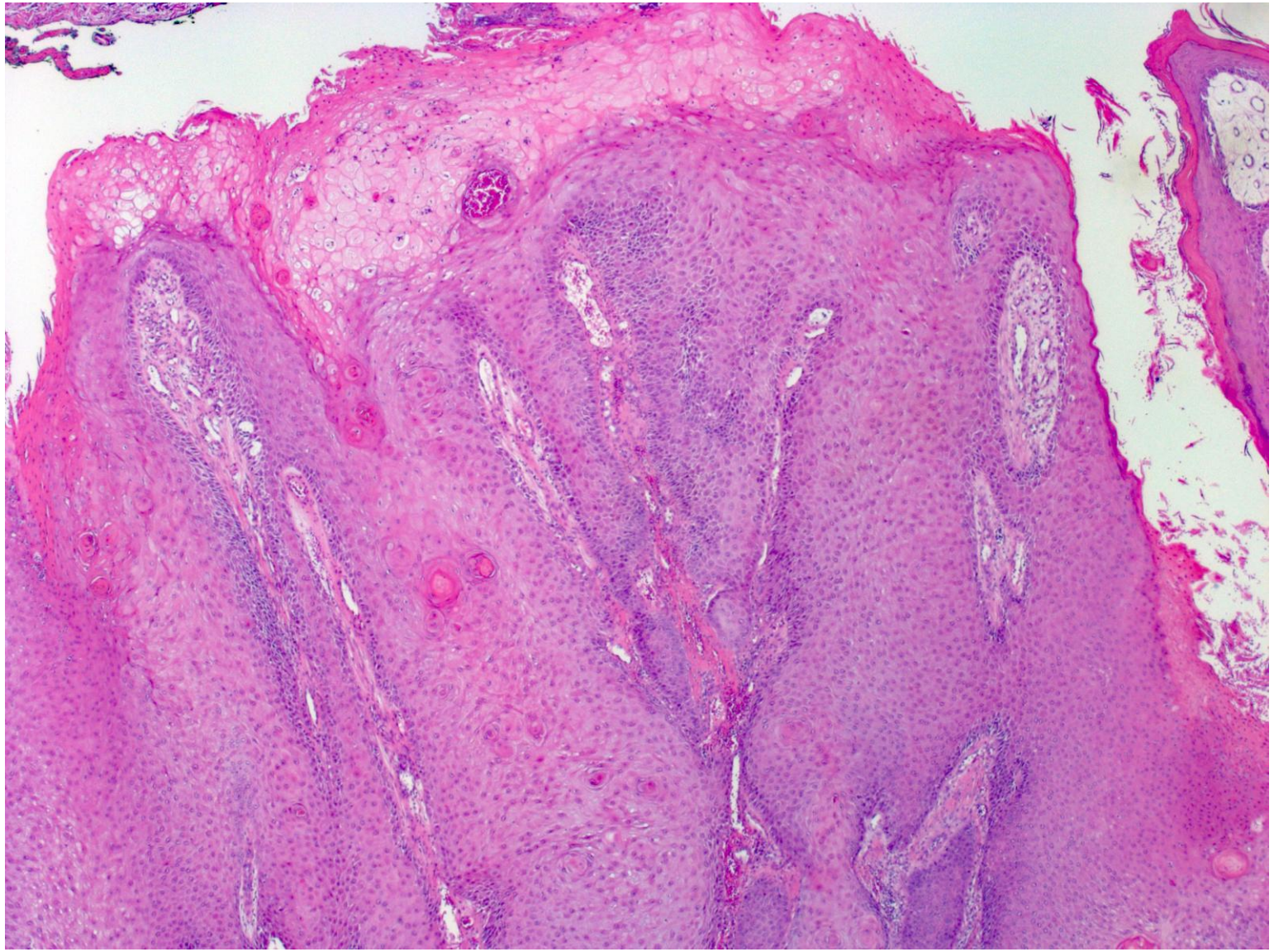
Verrucous carcinoma of the gum seen in a 53 y-o male patient. CK13 is expressed in the non-cancerous mucosa (left half), while the CK13 expression is weakened in the cancerous tissue (right half) (immunostaining for CK13).

Case 1
(53M)



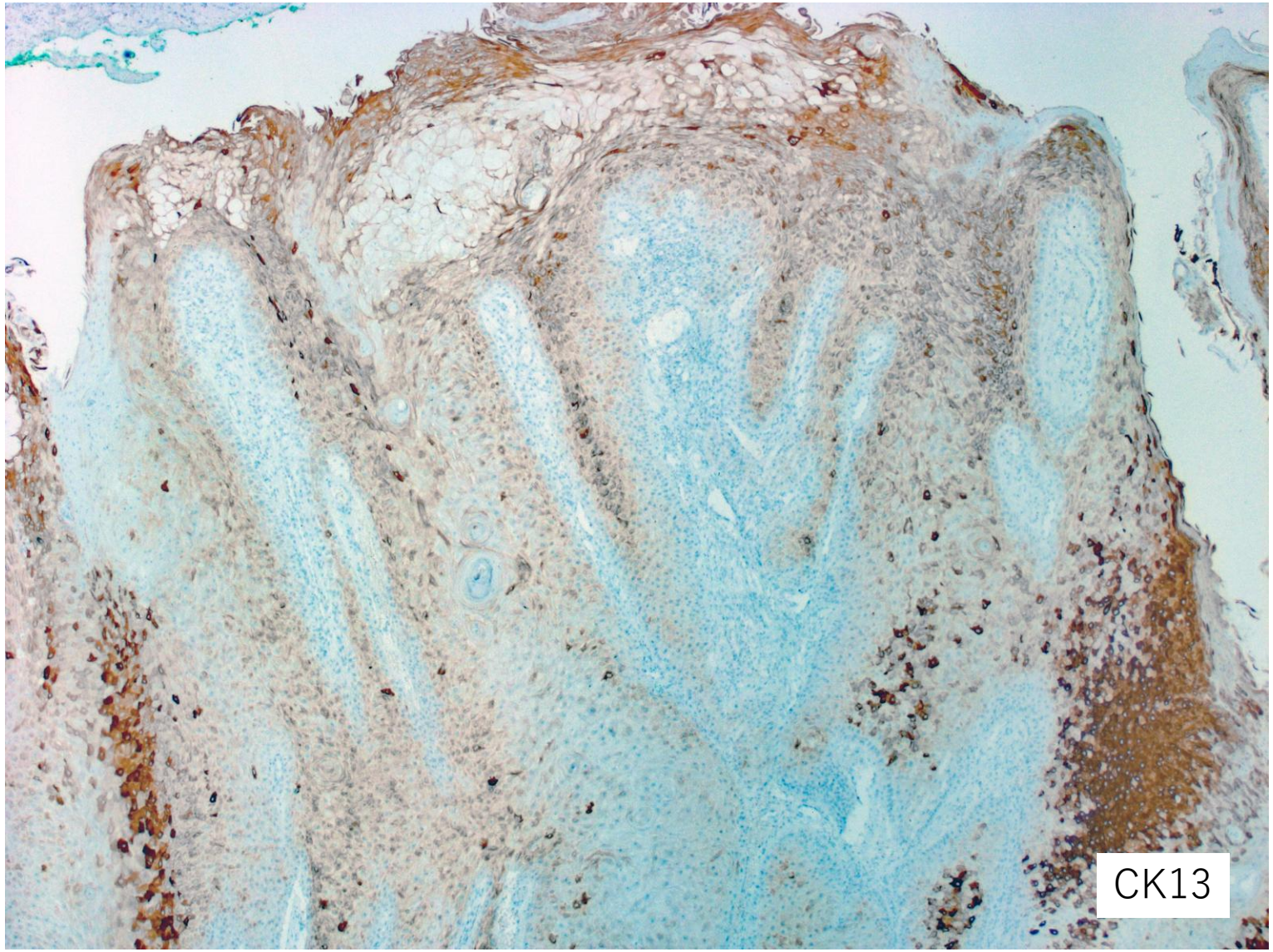
Verrucous carcinoma of the gum seen in a 53 y-o male patient. CK17 is not expressed in the non-cancerous mucosa (left half), while the CK17 expression is evident in the cancerous tissue (right half) (immunostaining for CK17).

Case 1
(53M)



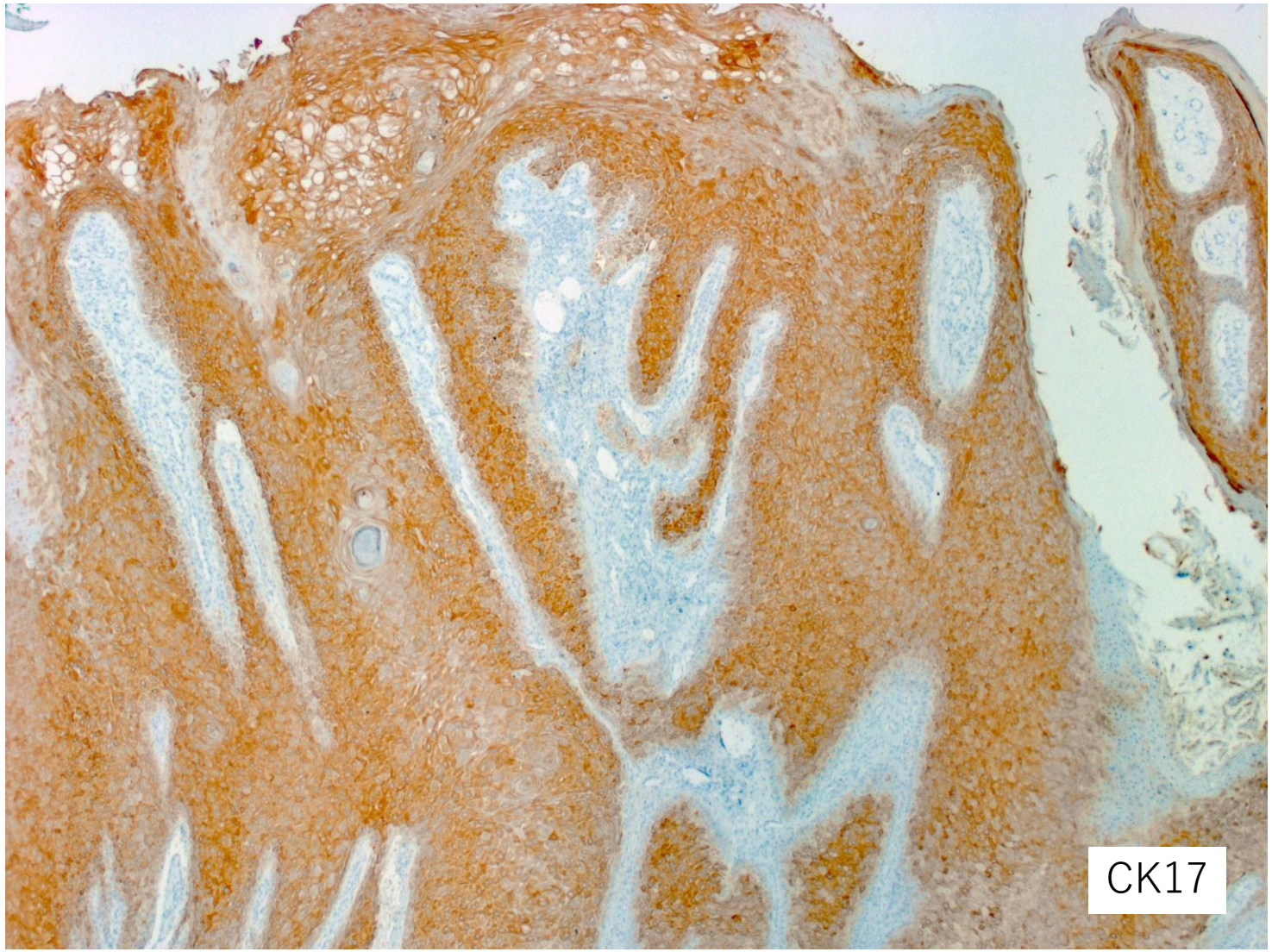
Verrucous carcinoma of the gum seen in a 53 y-o male patient. Downward growing invasive cancer cells with minimal nuclear atypia is seen in association with parakeratotic hyperkeratosis (H&E-1b).

Case 1
(53M)



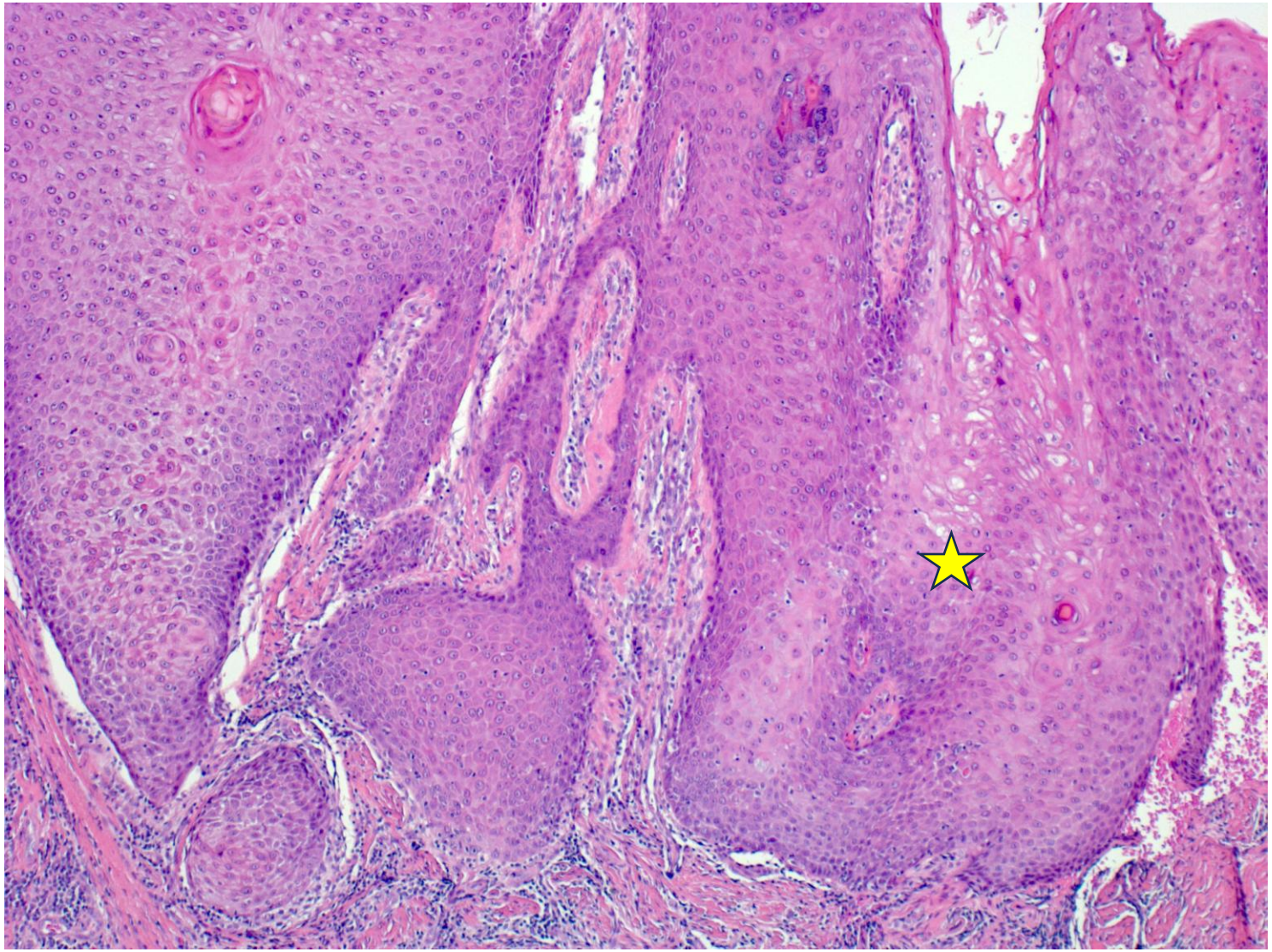
Verrucous carcinoma of the gum seen in a 53 y-o male patient. CK13 expression is focal in the downward growing invasive cancer cells with minimal nuclear atypia (immunostaining for CK13).

Case 1
(53M)



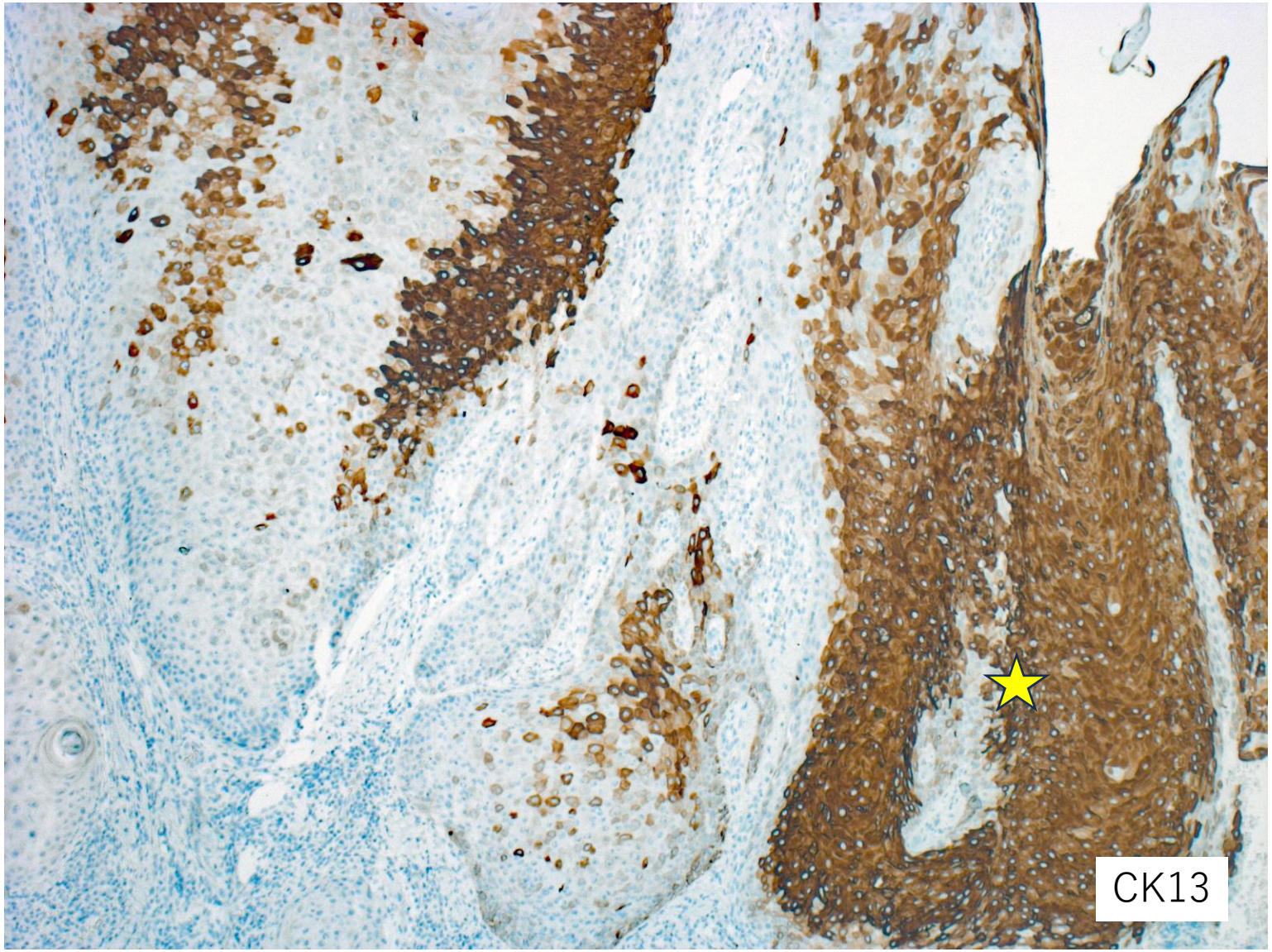
Verrucous carcinoma of the gum seen in a 53 y-o male patient. CK17 expression is diffuse in the downward growing invasive cancer cells with minimal nuclear atypia (immunostaining for CK17).

Case 1
(53M)



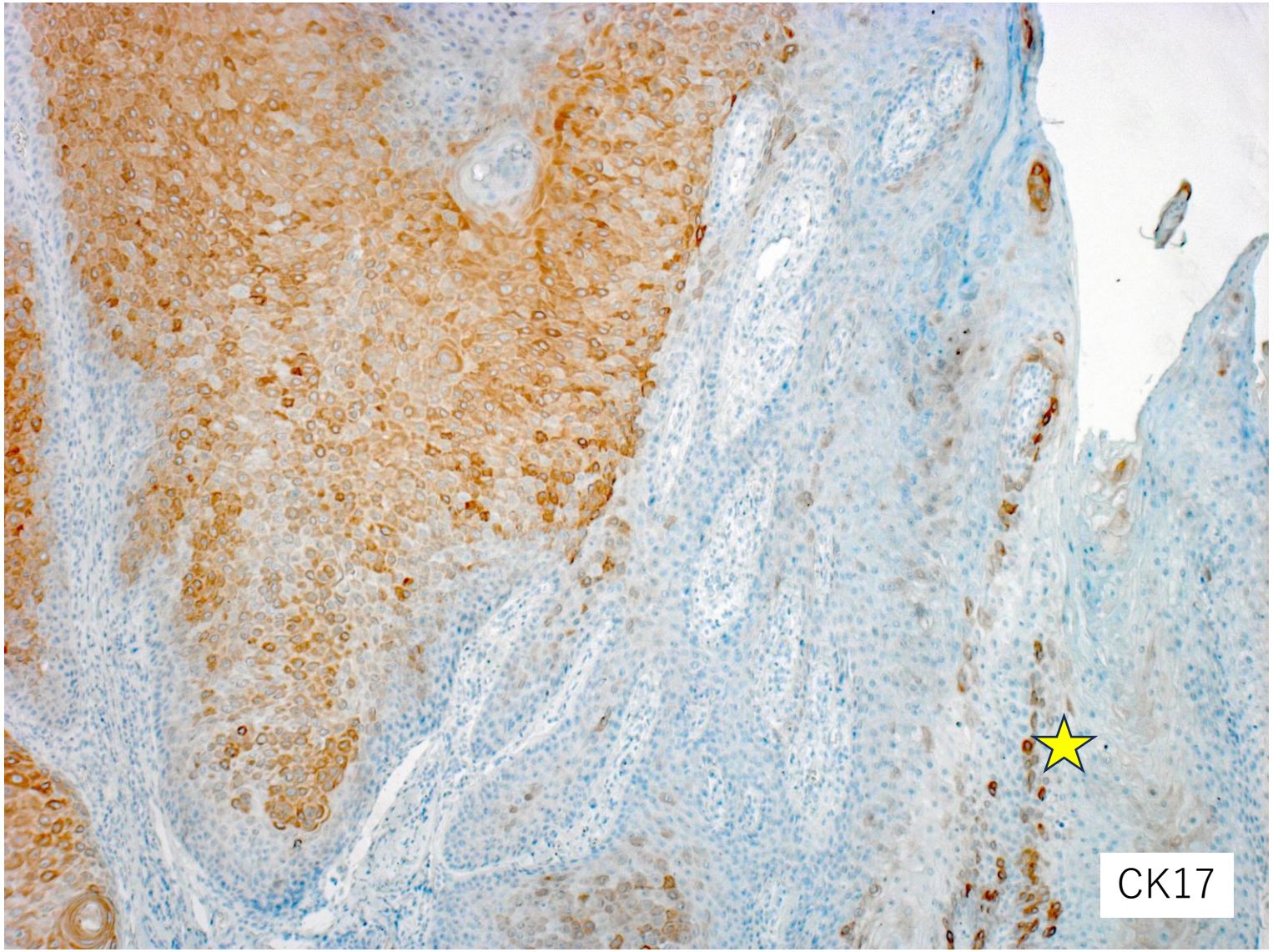
Verrucous carcinoma of the gum seen in a 53 y-o male patient. Downward growing invasive cancer cells with minimal nuclear atypia is seen. Asterisk indicates dysplastic cells with retained CK and negative CK17 expressions (H&E-1c).

Case 1
(53M)



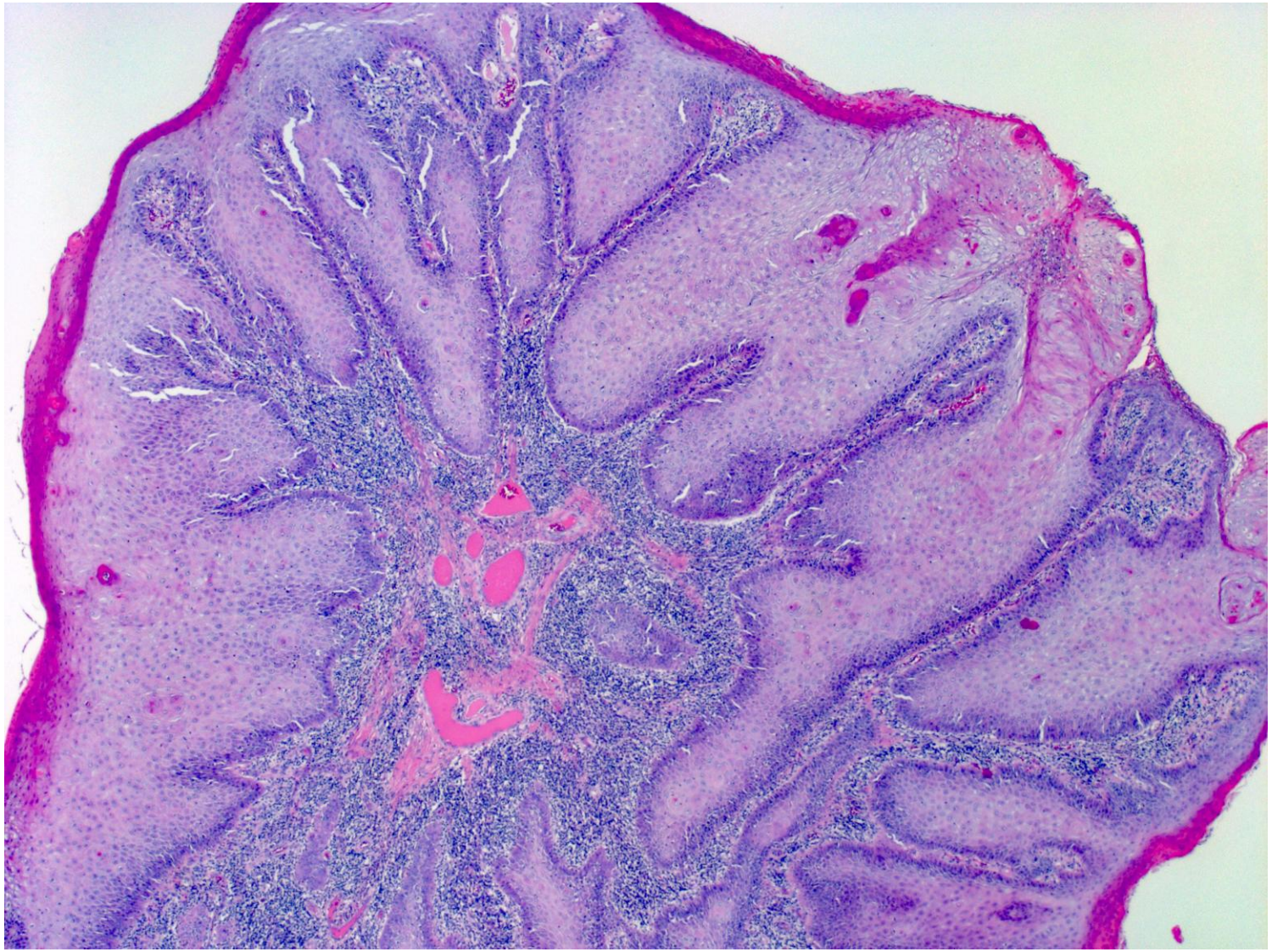
Verrucous carcinoma of the gum seen in a 53 y-o male patient. Downward growing invasive cancer cells with minimal nuclear atypia shows suppressed CK13 expression, but in the cancerous area labeled with asterisk, CK13 expression is retained (immunostaining for CK13).

Case 1
(53M)



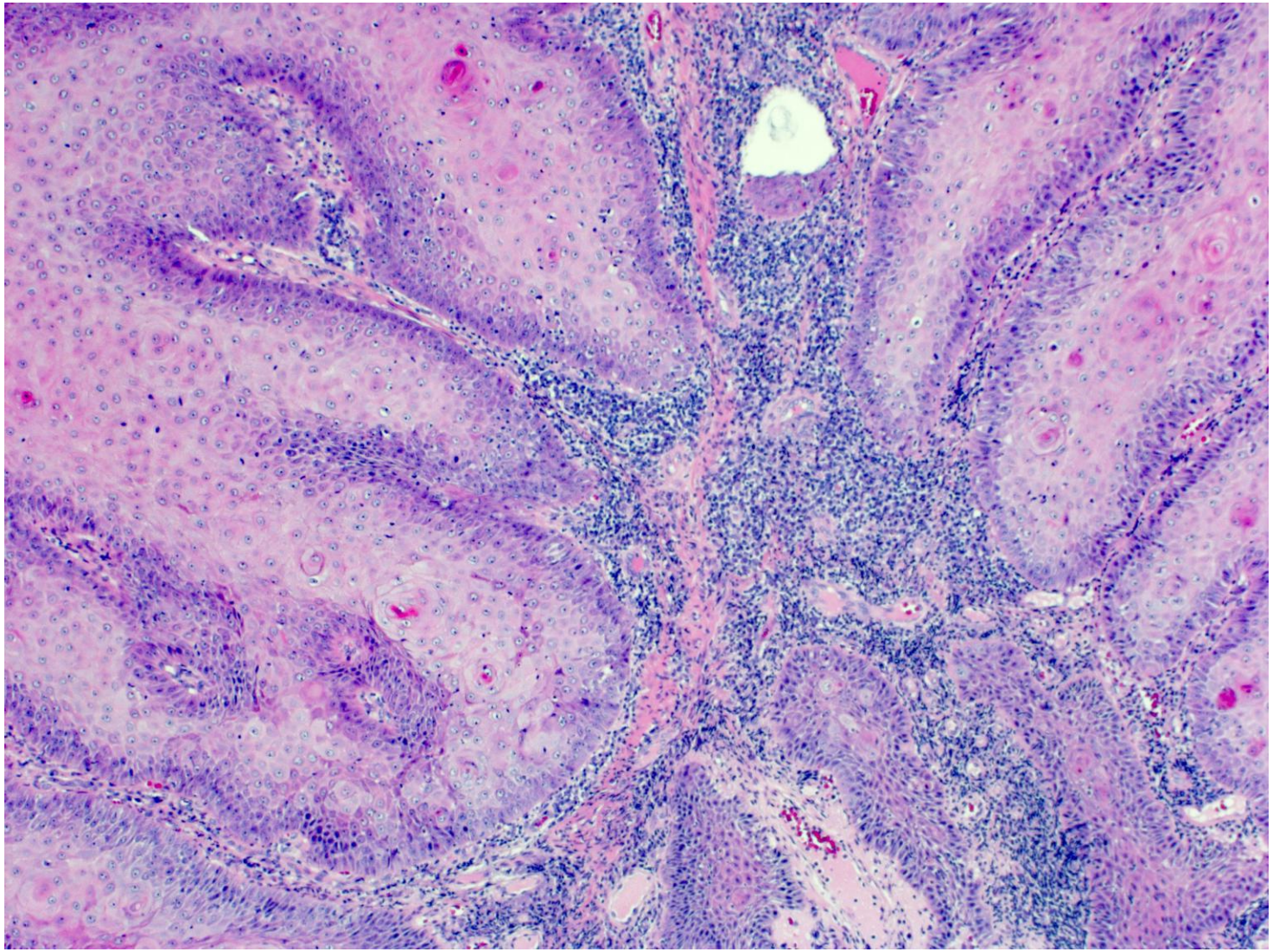
Verrucous carcinoma of the gum seen in a 53 y-o male patient. Downward growing invasive cancer cells with minimal nuclear atypia shows accentuated CK17 expression, but in the cancerous area labeled with asterisk, CK17 expression is only focal (immunostaining for CK17).

Case 2
(70F)



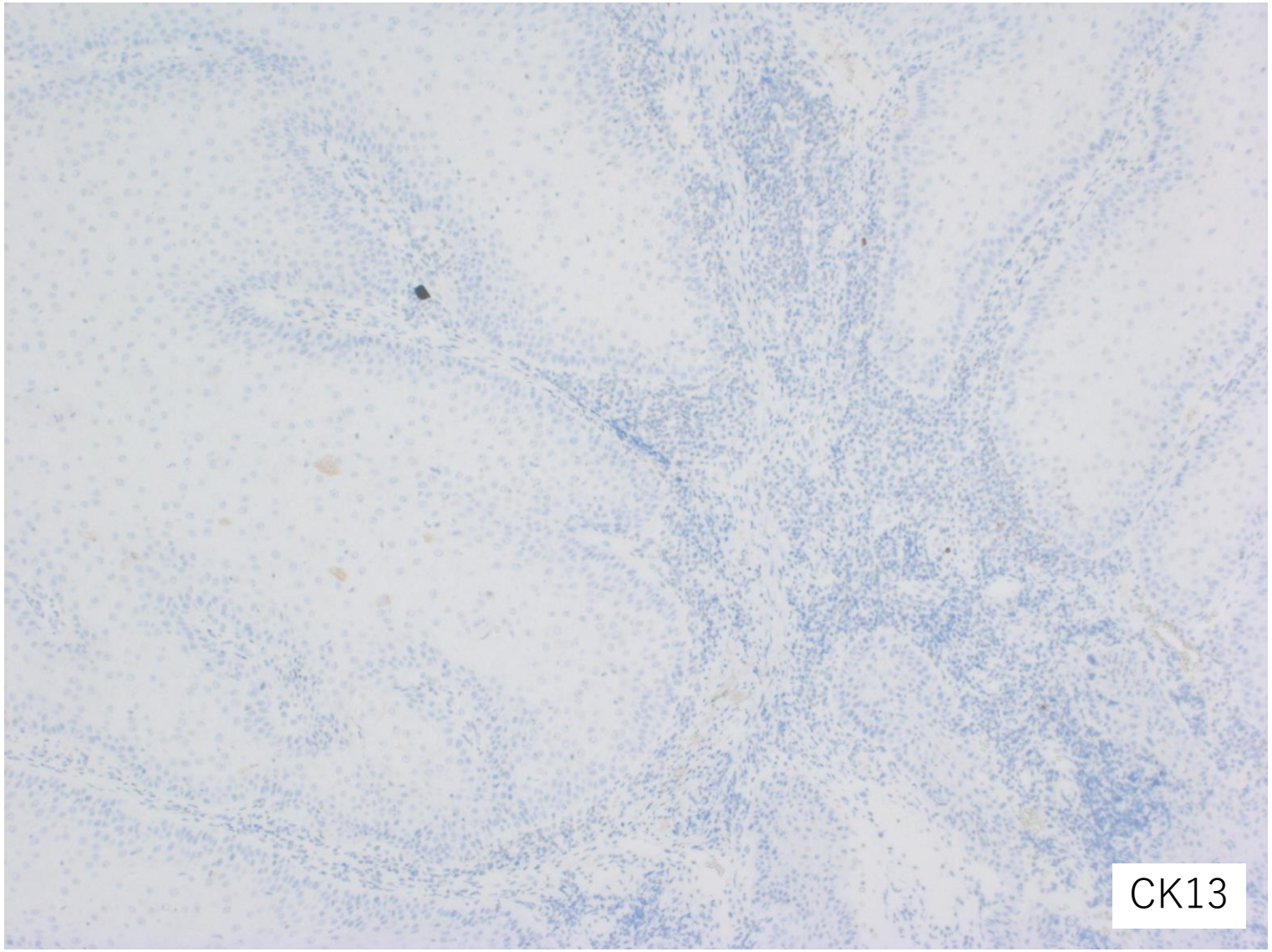
Verrucous carcinoma of the gum seen in a 70 y-o female patient. Downward growing invasive cancer cells with minimal nuclear atypia is seen in association with parakeratotic hyperkeratosis and inflammatory stromal reaction (H&E-2a).

Case 2
(70F)



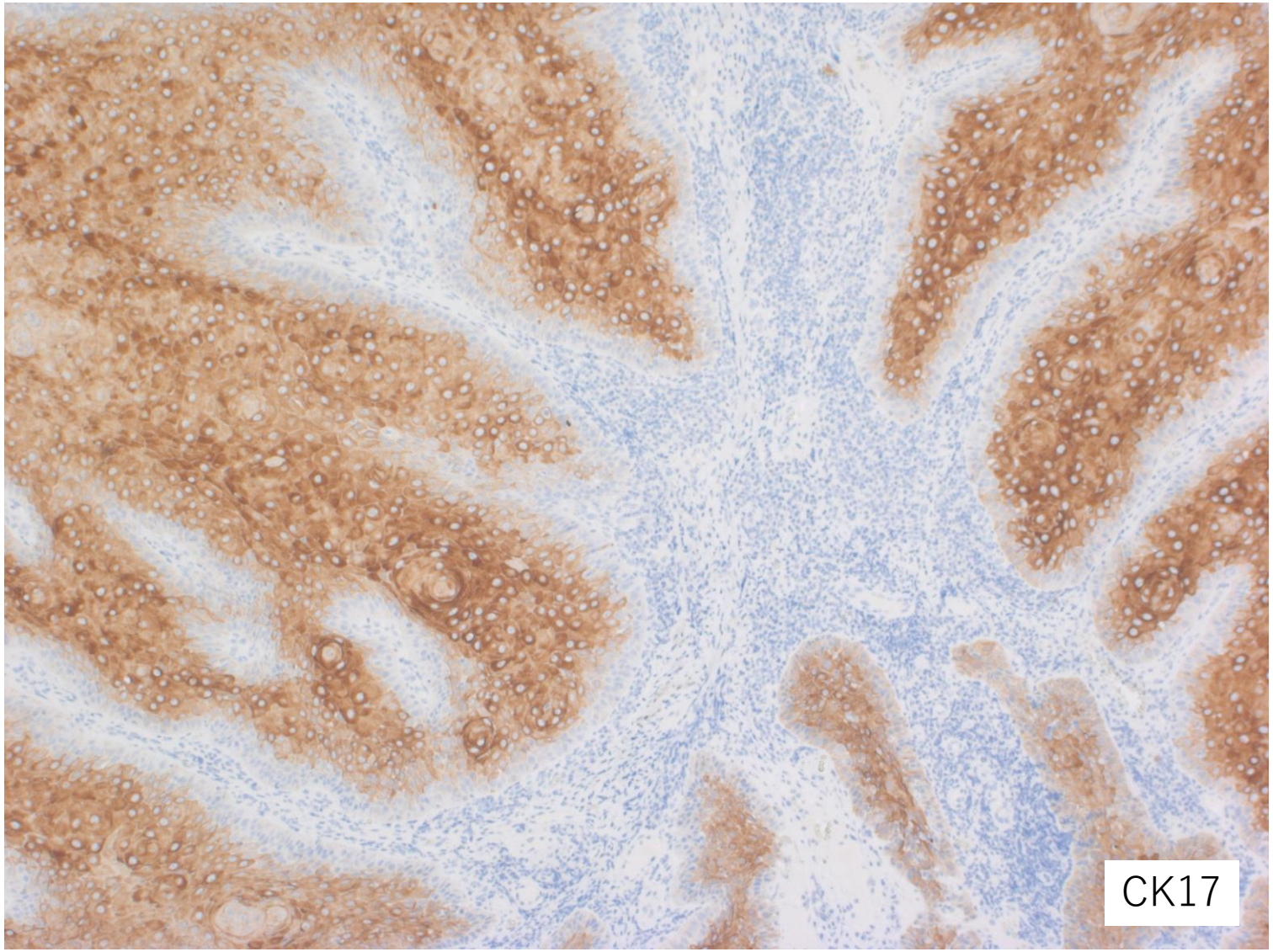
Verrucous carcinoma of the gum seen in a 70 y-o female patient. Downward growing invasive cancer cells with minimal nuclear atypia is seen in association with inflammatory stromal reaction (H&E-2a).

Case 2
(70F)



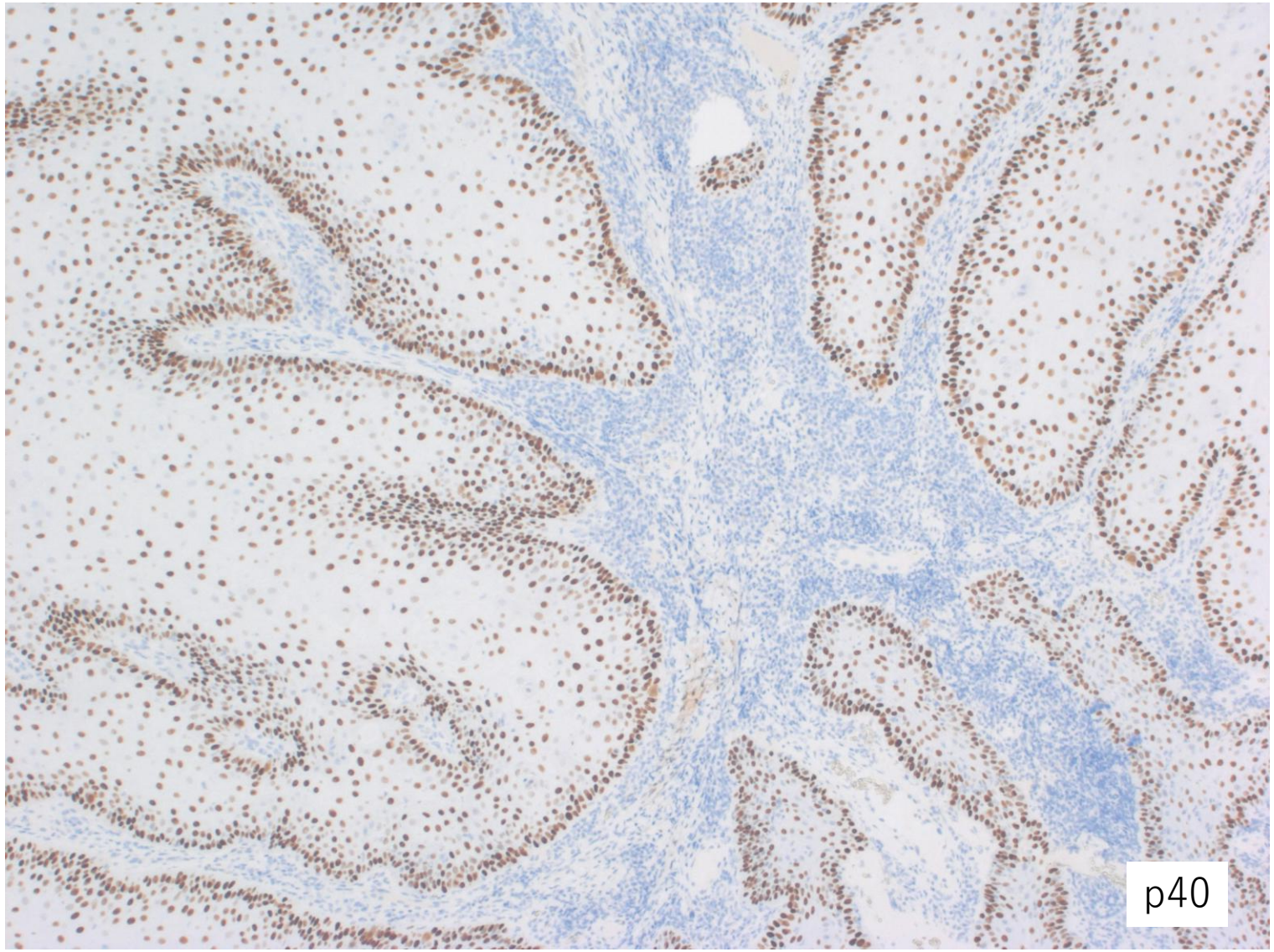
Verrucous carcinoma of the gum seen in a 70 y-o female patient. CK13 expression is completely negative in the downward growing invasive cancer cells with minimal nuclear atypia (immunostaining for CK13).

Case 2
(70F)



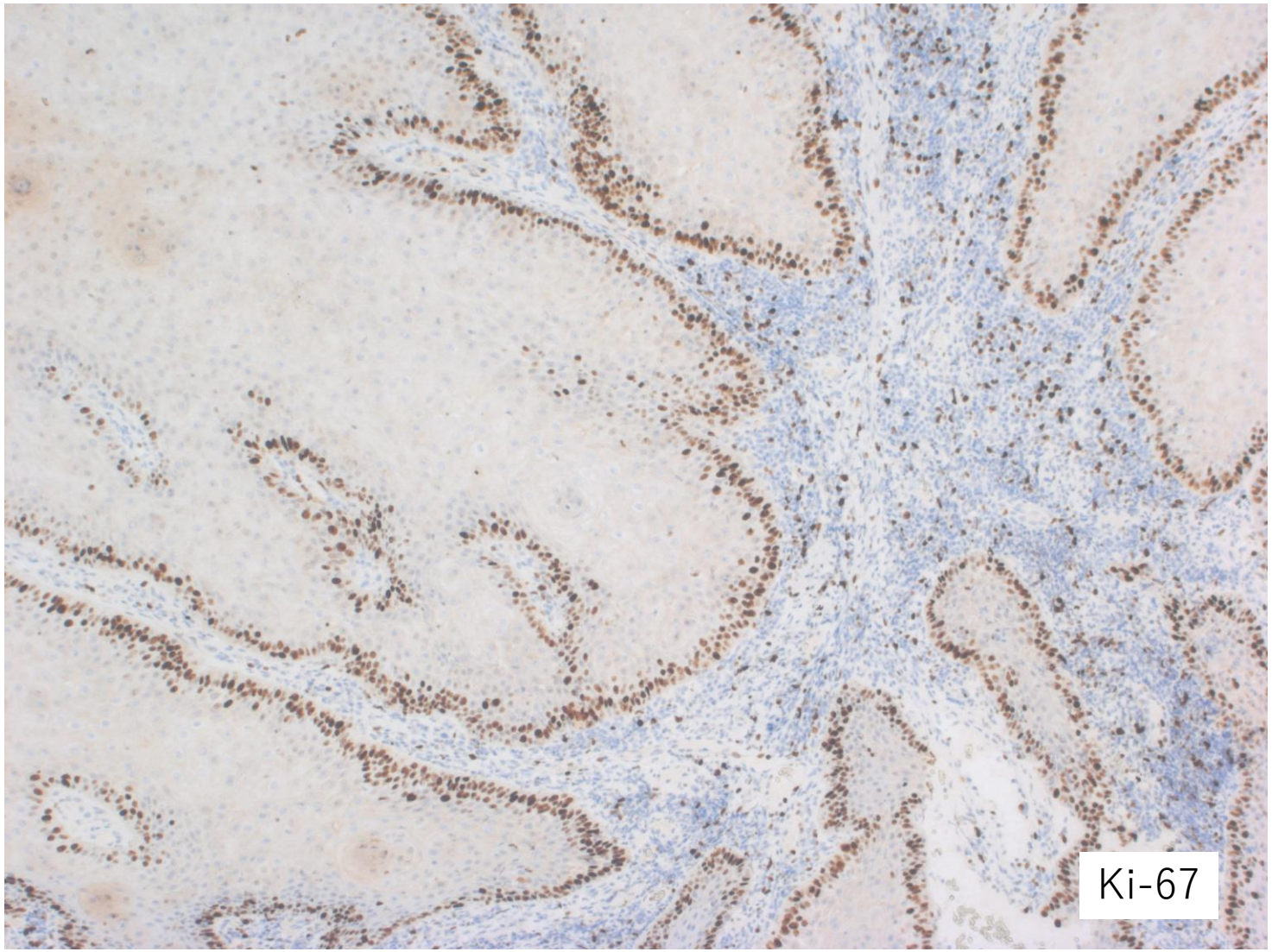
Verrucous carcinoma of the gum seen in a 70 y-o female patient. CK17 expression is diffusely seen in the downward growing invasive cancer cells with minimal nuclear atypia (immunostaining for CK17).

Case 2
(70F)



Verrucous carcinoma of the gum seen in a 70 y-o female patient. p40 is consistently expressed in the nuclei of the downward growing invasive cancer cells with minimal nuclear atypia (immunostaining for p40).

Case 2
(70F)



Verrucous carcinoma of the gum seen in a 70 y-o female patient. Ki-67-positive proliferative cells are confined to the basal and parabasal layers of the downward growing invasive cancer cells with minimal nuclear atypia, indicating a very well differentiation of the lesion (immunostaining for Ki-67).