

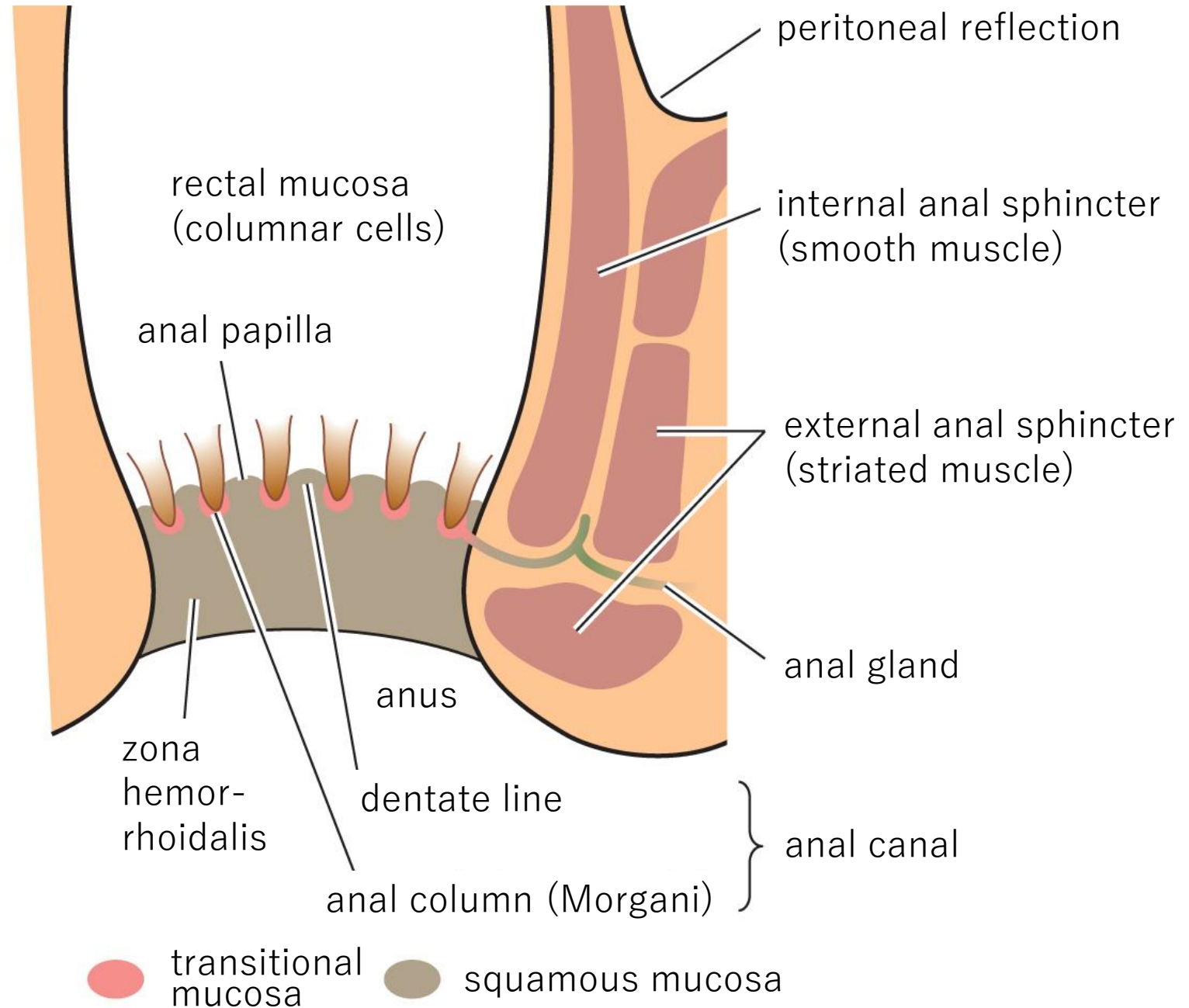
Normal anal glands

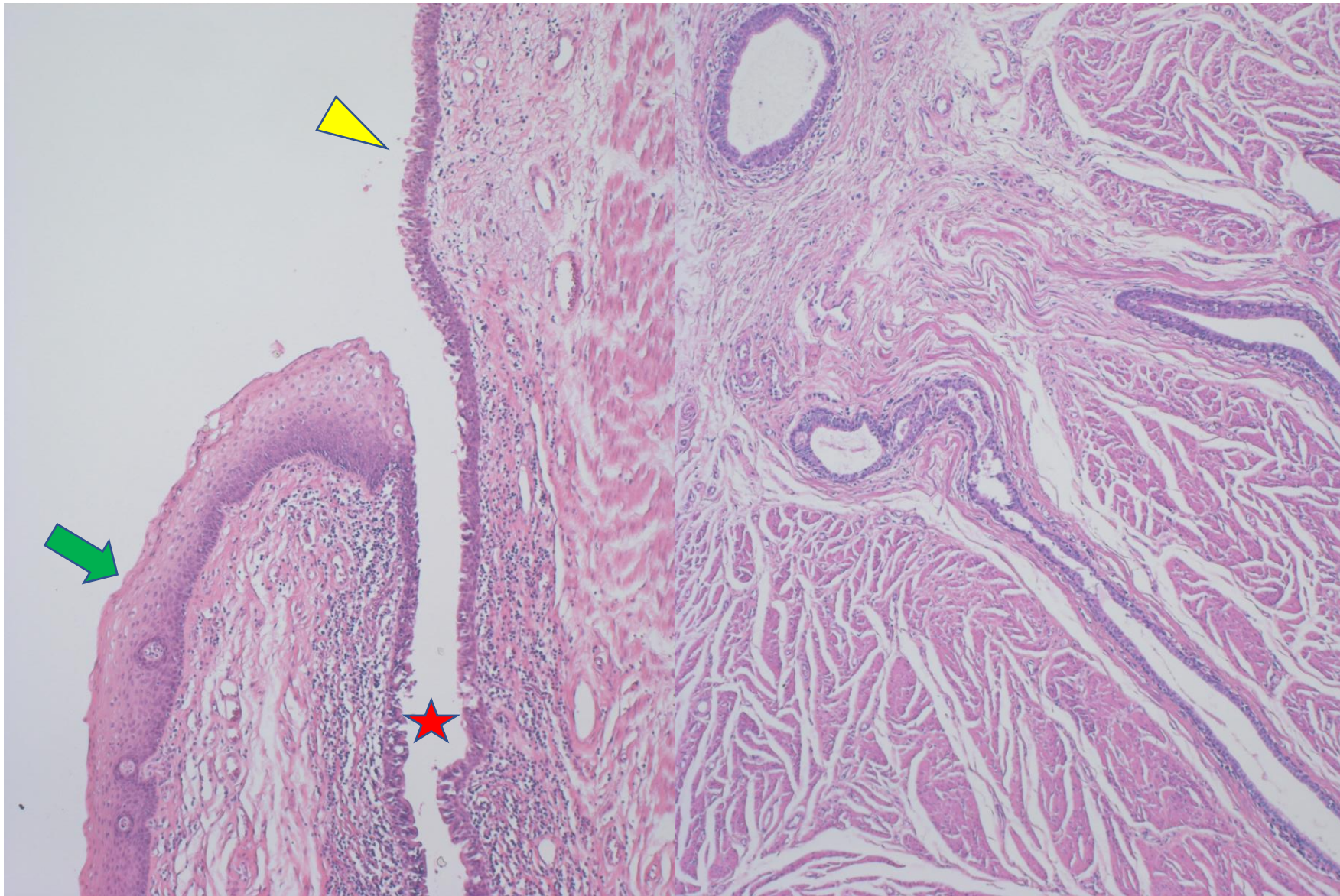
Normal anal glands drain into the transitional mucosa at the anorectal junction, and infection of the anal gland cause anal fistula. The human anal gland shows androgen-dependent acinar cell differentiation.

Immunoreactivities of prostatic acid phosphatase (PAP) and prostate-specific antigen (PSA) are demonstrated in non-mucinous cells of male anal glands, while female anal glands completely lack prostate-type acinar cells. In contrast, urethral glands express prostatic-type expression in both sexes. The rectal mucosa contains a few neuroendocrine cells expressing PAP, but without PSA immunoreactivity.

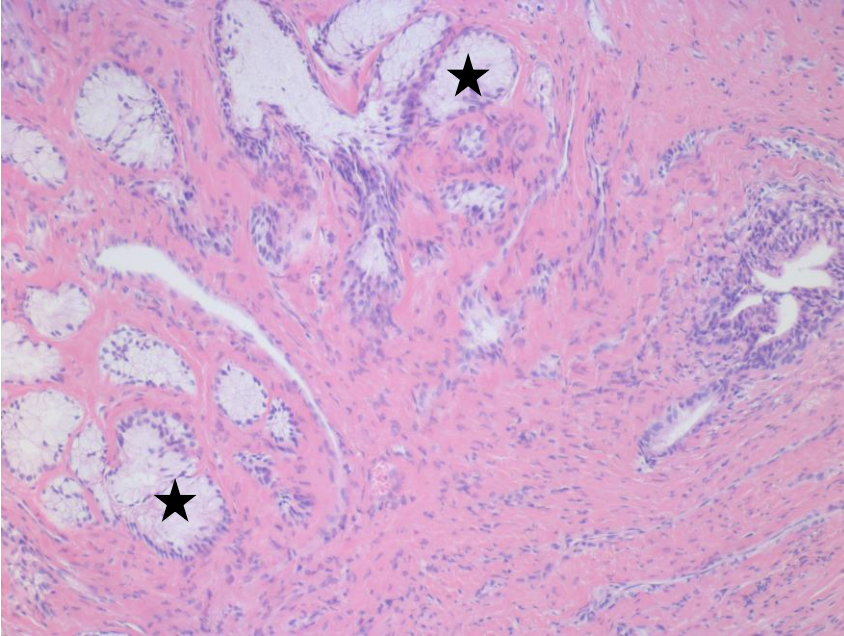
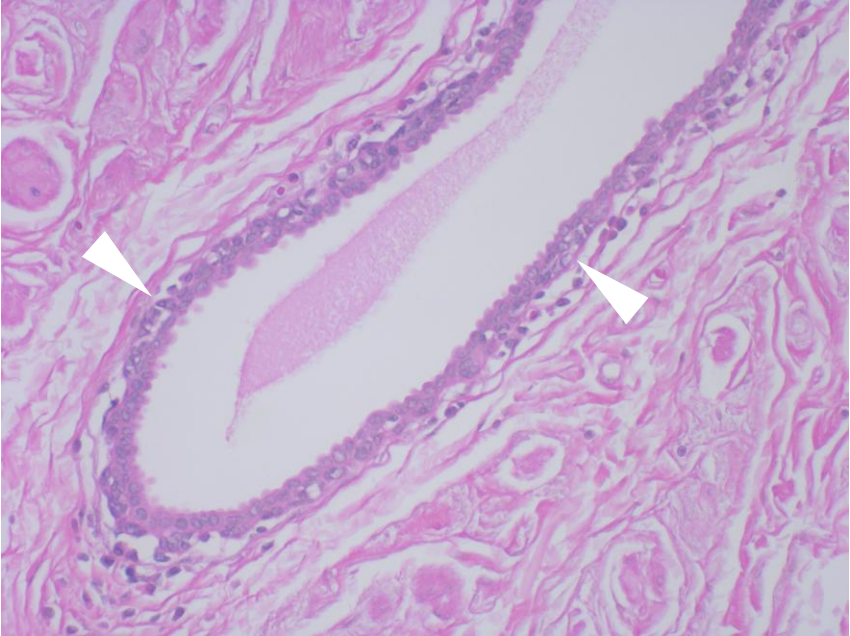
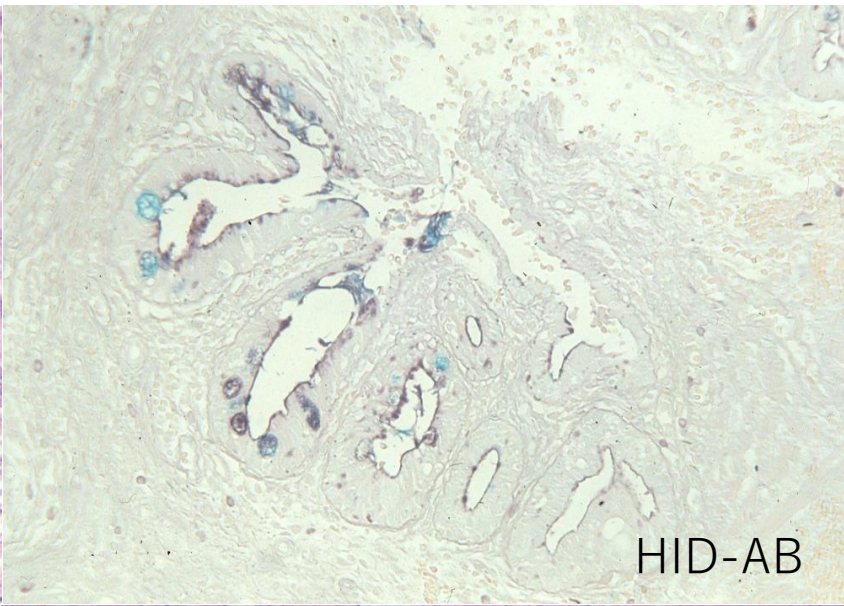
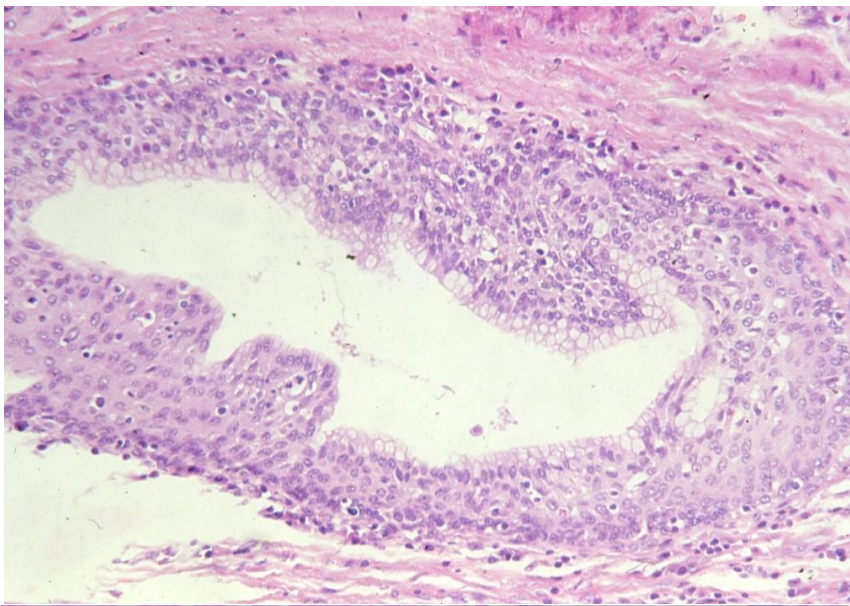
Ref: Komoshida S, Tsutsumi Y. Extraprostatic localization of prostatic acid phosphatase and prostate-specific antigen: Distribution in cloacogenic glandular epithelium and sex-dependent expression in human anal gland. Human Pathol 1990; 21(11): 1108-1111. doi: 10.1016/0046-8177(90)90146-v

Schema of normal anatomy of the anus

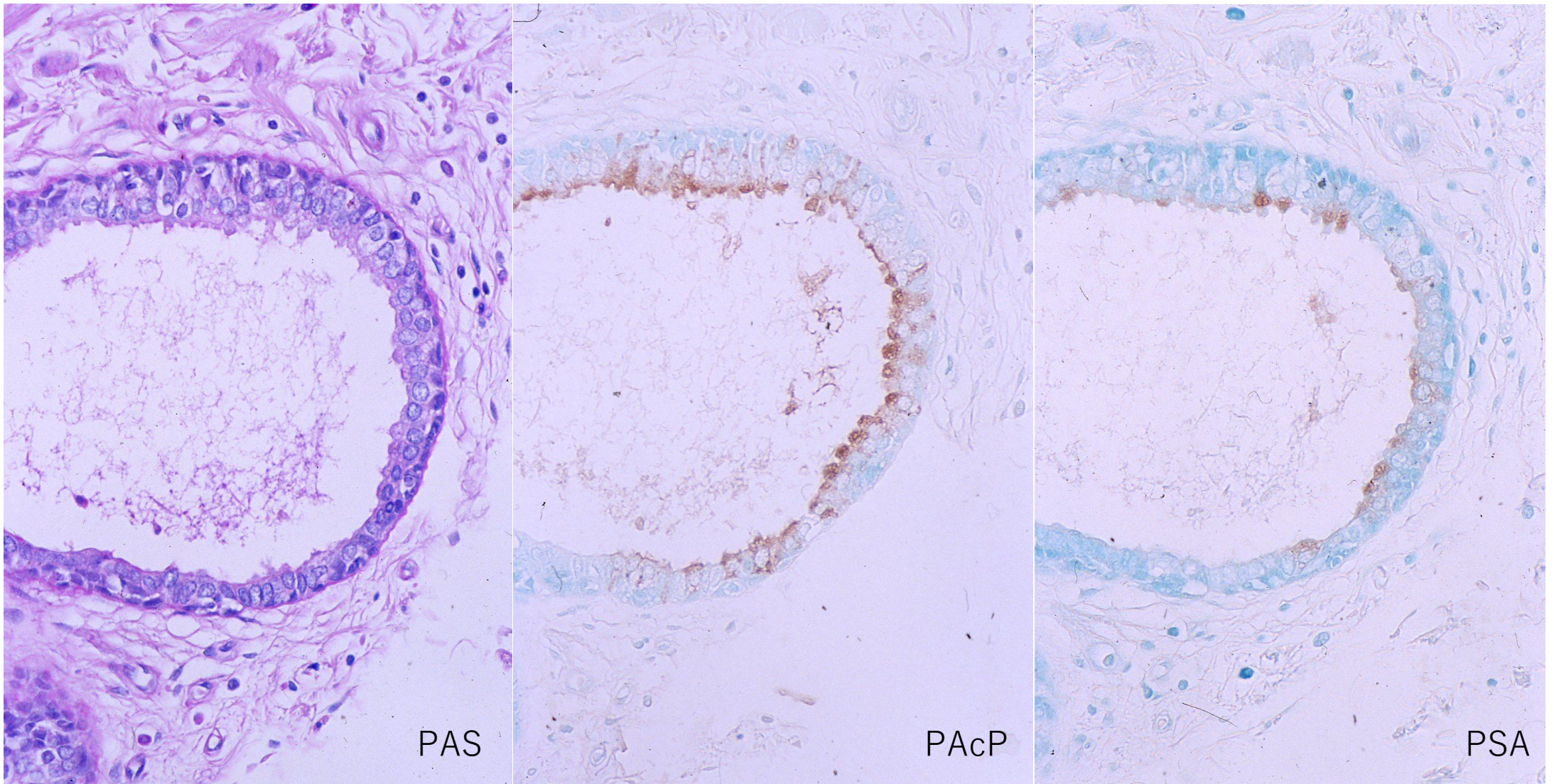




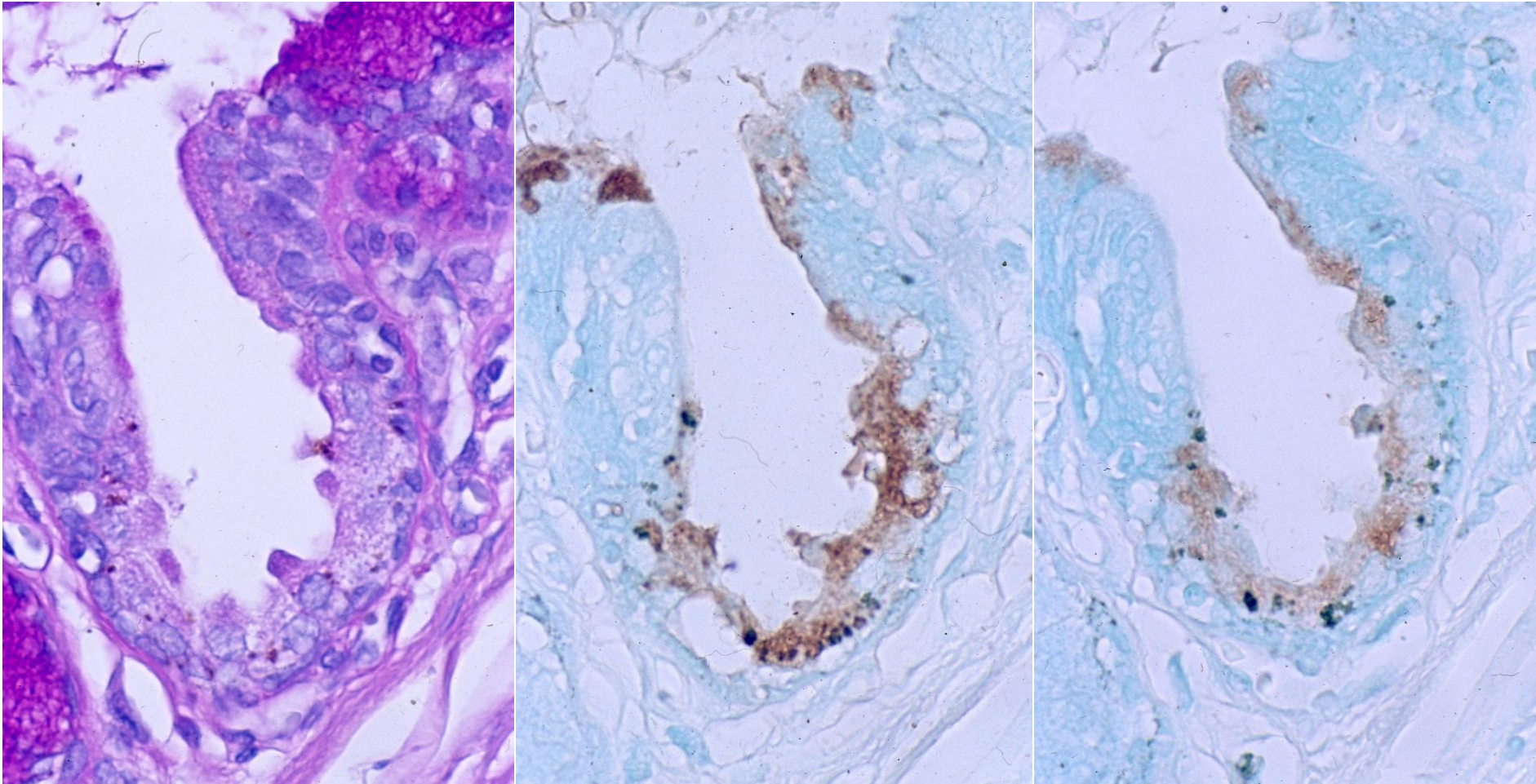
Normal anal glands (left: proximal part, right: distal part). The anal glands (asterisk) open to the transitional mucosa (arrowhead). Arrow indicates anal squamous mucosa. The anal glands lamify and extend into the internal sphincter muscle layer. H&E



Proximal (upper panels) and distal (lower panels) parts of the normal anal glands. The proximal gland shows stratified epithelial layer, and mucin-containing goblet cells are distributed. Both sialomucin (blue) and sulfated mucin (black) are demonstrated with high iron diamine-Alcian blue (HID-AB) staining. The distal part consists of two-cell layers, with basal cells (arrowheads) located outside. Mucin-secreting accessory glands may be associated (asterisks).



Male anal glands (left: PAS, center: PAcP, right: PSA). The male anal gland show differentiation toward acinar cells. The acinar cells express prostatic markers (PAcP and PSA). Such differentiation is not seen in the female anal gland. PAS reaction is negative for mucin.



Female paraurethral gland (Skene's gland) (left: PAS, center: PAcP, right: PSA). The PAS-negative acinar cells of Skene's gland are immunoreactive for both PAcP and PSA. Skene's gland corresponds to male prostatic gland. Ejaculation occurs in sexual orgasm. It is known that urine PSA levels show no sexual difference.