

## Anal and perianal SCC

**Definition:** Squamous cell carcinoma (SCC) arising in the anal canal or in the peri-anal region. This is the most common type of anal canal carcinoma.

**Aetiology:** At least 95% are related to HPV infection (89% HPV 16).

**Anatomical considerations:** The anal canal begins at the upper border of the internal sphincter at the anorectal ring (typically located 2cm proximal to the dentate line) and ends where the squamous mucosa of the anal canal blends with the perianal skin (identified histologically by the presence of skin appendages). The proximal anal canal is lined by colorectal glandular mucosa, the mid anal canal by transitional mucosa and the distal anal canal by squamous mucosa. HPV infection typically begins in the transitional mucosa.

By convention, tumours that cannot be completely visualised with gentle traction on the buttocks are considered *intra-anal*. Tumours that can be completely visualised and are within 5cm of the anal canal are considered *peri-anal*. Tumours greater than 5cm from the anal canal are considered *skin primaries* (unless they enter the zone of the vulva). This designation can have significant impact on the choice of therapy; current protocols for anal cancer recommend combined chemoradiation whereas small perianal lesions can be treated by surgical excision with clear margins.

Tumours located above the dentate line drain to the mesorectal lymph nodes, whereas those distal to the dentate line will drain to the superficial inguinal and external iliac lymph nodes.

**Pathology:** There are a number of issues to note regarding the pathological reporting of anal and perianal SCC.

1. **Nomenclature.** Previously a number of entities such as basaloid, transitional, keratinising and non-keratinising squamous carcinoma (amongst others) were recognised. The current WHO classification no longer includes these histological variants but considers them all to be squamous cell carcinoma which can be graded as well, moderately or poorly differentiated (Fig 1). There is no prognostic significance to the previously described subtypes.

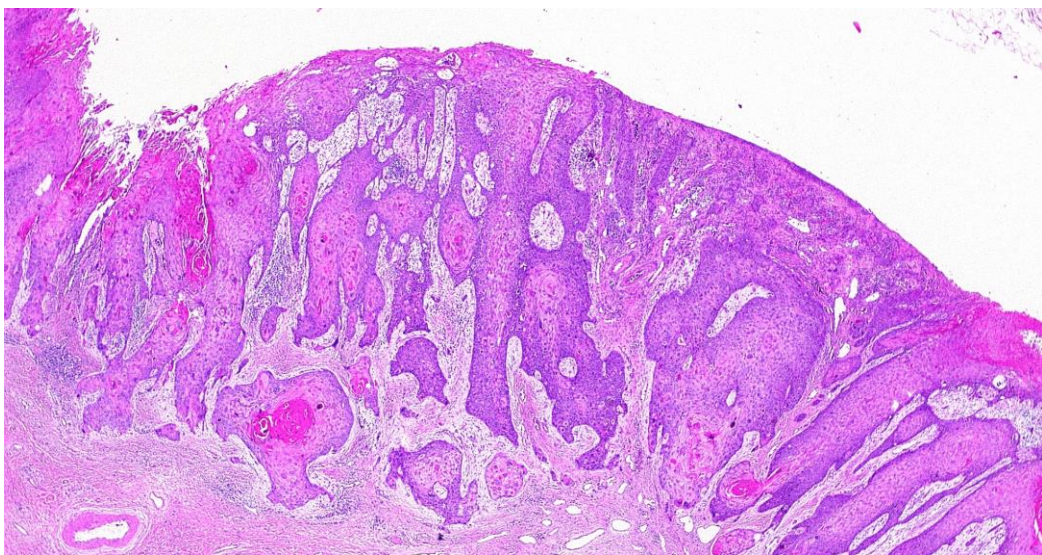
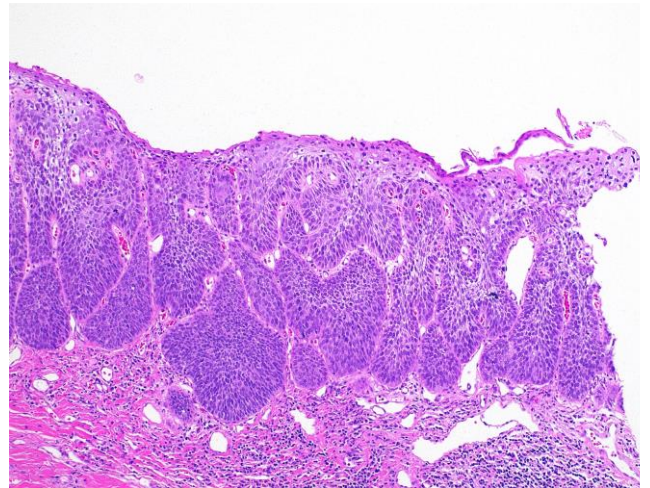


Fig 1. Well differentiated squamous cell carcinoma

Fig 2. HSIL (AIN III) mimicking early invasive SCC



2. SCC vs HSIL. The major diagnostic difficulty we encounter is the distinction of complex HSIL (AIN) from early SCC. The distinction can be difficult because of so-called “pushing invasion” of tumour into the submucosa and irregular growth down adnexal structures mimicking invasion (Fig 2). In some cases a definite distinction cannot be made and the pathological uncertainty is communicated in the report (e.g. features suspicious for early invasion).
3. Superficial invasive SCC. This is a recently defined entity with criteria based on experience with cervical neoplasia. It is defined by horizontal extent less than 7mm, depth less than 3mm and able to be excised with a clear margin. At present the standard of care for these early carcinomas remains chemoradiation therapy but trials assessing the possibility of local excision are underway.
4. Verrucous carcinoma and Giant condyloma of Buschke and Lowenstein. There is controversy as to whether these are synonymous or separate entities. Regardless they are considered to be locally invasive lesions without metastatic potential that present as a large bulky exophytic growth. Histologically they show only minimal cytological atypia and a “pushing” pattern of invasion. Definite diagnosis of these tumours on biopsy specimens can be impossible because of the lack of atypia and an infiltrative growth pattern and requires knowledge of the clinical scenario.

**Staging:** Staging of anal carcinoma is based on the size of the lesion rather than depth of invasion. Perianal SCC is staged using skin cancer criteria.

**References:**

Dedicated issue on anal squamous neoplasia in: Seminars in Colon and Rectal Surgery. 2017 June 28(2)