Pattern of invasion for HPV-associated adenocarcinomas (Non-core)

Recently, a system of assessing cervical adenocarcinomas (ACAs) based upon their invasive growth pattern has been developed, the Silva Pattern Classification, and this has been shown to be reproducible amongst pathologists and to correlate with the risk of lymph node metastasis and patient outcomes.[1-5] If these findings are confirmed by additional studies it may be argued whether this system could be considered a complement to, or even an alternative to, conventional grading. The latter has traditionally been based upon the cytoarchitectural pattern of the neoplasm itself but as noted above, tumour-stromal relationships including the pattern of stromal invasion have been included in earlier grading schemes of cervical squamous cell carcinoma. It is important to highlight that the pattern classification is only applicable to human papillomavirus (HPV)-associated cervical ACAs on complete resections (loop electrosurgical excision procedure (LEEP) or cone with negative margins, trachelectomies, hysterectomies). Studies have shown that the pattern classification is not clinically relevant in HPV independent cervical ACAs,[6] and therefore, should not be applied in those scenarios. One study has also shown that the pattern classification is highly concordant between LEEP and hysterectomy, but this was not shown for biopsies and hysterectomies.[5]

The Silva Pattern Classification system for HPV-associated cervical ACAs was developed in 2013 in an attempt to correlate histologic invasion patterns to outcomes, regardless of tumour size or stage so that patients could potentially be spared unnecessary lymphadenectomies for cases with no risk of nodal involvement.[2] Pattern A endocervical ACAs are characterised by well-formed glands frequently forming groups with relatively well preserved lobular architecture without destructive stromal invasion, single cells or detached clusters of tumour cells. There should be no solid growth or high grade cytology but complex intraglandular proliferations are acceptable (cribriforming or papillae). Lymphovascular invasion should be absent in these lesions. Pattern B tumours show localised (limited/early) destructive invasion arising in a background of pattern A glands. Individual cells or clusters of tumour cells are seen in desmoplastic or inflamed stroma, and these foci can be single, multiple or linear at the base of the tumour, but should not exceed 5 millimetres contiguously. Pattern C tumours show diffuse destructive invasion that usually elicits a desmoplastic/inflammatory response. The glands can be angulated, or have a canalicular/labyrinthine appearance, and incomplete/fragmented (as seen in microcystic, elongated and fragmented (MELF) pattern of endometrioid carcinomas) glands are frequent, sometimes associated with mucin lakes. Solid or confluent growth can also be seen. Lymphovascular invasion can be present in either pattern B or C and should be documented separately. In the original study, the risk of lymph node metastases for the various patterns was 0%, 4.4%, 23.8% for patterns A, B and C, respectively. Subsequent studies have reproduced the original findings and also showed good reproducibility amongst pathologists.[4,7-9] While more and larger prospective studies to evaluate and confirm these retrospective results are necessary, gynaecologic surgeons are increasingly becoming aware of the classification system and this may in the future become an important part of surgical planning and prognostication. It should be emphasised that the classification can only be applied in HPV-associated ACAs which have been completely resected on loop/cone/trachelectomy/hysterectomy specimens.

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