Histological tumour type (Core)

Reason/Evidentiary Support

All sinonasal tumours should be given a type based on the most recent edition of the World Health Organization (WHO) Classification of Head and Neck Tumours.[1] The list of histologic types discussed in the chapter on sinonasal tumours in the 4th Edition of the WHO does not include some squamous cell carcinoma variants and salivary gland type tumours because they are described in sections devoted to other sites where they are more commonly encountered.

The sinonasal tract gives rise to a very large and diverse group of carcinomas, which may arise from the surface epithelium or the underlying seromucinous glands. Squamous cell carcinoma is, by far, the most common tumour to occur in the sinonasal tract, and it is subdivided primarily into keratinizing and non-keratinizing subtypes. Additional subtypes (e.g. spindle cell, basaloid, adenosquamous) are rare but should be noted if present. Sinonasal undifferentiated carcinoma, lymphoepithelial carcinoma, NUT carcinoma, and neuroendocrine carcinomas are also recognized tumour types of presumed surface origin. Adenocarcinomas of the sinonasal tract can be of surface or seromucinous gland origin. The surface-type adenocarcinomas should be subdivided into intestinal and non-intestinal types, while the seromucinous (minor salivary) gland carcinomas should be typed by the WHO classification of salivary gland tumours; adenoid cystic carcinoma is most common.

Additional tumour types were included as provisional entities in the WHO classification may be mentioned at the pathologist's discretion. These include human papillomavirus (HPV)-related multiphenotypic sinonasal carcinoma, *SMARCB1* (INI1) deficient sinonasal carcinoma, and sinonasal renal cell-like adenocarcinoma.

Accurate tumour typing is important because specific tumour types are associated with different prognoses and, in some cases, different treatments. For example, sinonasal undifferentiated carcinoma and NUT carcinoma have very poor outcomes while low-grade forms of non-intestinal type adenocarcinoma behave in a very indolent manner. As another example, lymphoepithelial carcinoma is known to respond well to external beam radiation, while salivary-type adenocarcinomas are, as a group, not highly radiosensitive.

Diagnostic accuracy is also expected to take on additional importance in the future as targeted, molecular-based therapies become more prominent. A notable example is NUT carcinoma, for which trials using bromodomain inhibitors are ongoing.[2] The use of targeted therapies may also be an option for certain intestinal-type adenocarcinomas in the future.[3,4]

WHO classification of tumours of the nasal cavity, paranasal sinuses and skull base[a1]

Descriptor	ICD-O codes
Carcinomas	
Keratinising squamous cell carcinoma	8071/3
Non-keratinising squamous cell carcinoma	8072/3
Spindle cell squamous carcinoma	8074/3
Lymphoepithelial carcinoma	8082/3
Sinonasal undifferentiated carcinoma	8020/3
NUT carcinoma	8023/3
Neuroendocrine carcinoma	
Small cell neuroendocrine carcinoma	8041/3
Large cell neuroendocrine carcinoma	8013/3
Adenocarcinoma	
Intestinal-type adenocarcinoma	8144/3
Non-intestinal-type adenocarcinoma	8140/3

a The morphology codes are from the International Classification of Diseases for Oncology (ICD-O). Behaviour is coded /0 for benign tumours; /1 for unspecified, borderline, or uncertain behaviour; /2 for carcinoma in situ and grade III intraepithelial neoplasia; and /3 for malignant tumours.

References

1 El-Naggar A, Chan JKC, Grandis JR, Takata T, Slootweg PJ (eds) (2017). *WHO Classification of Head and Neck Tumours (4th Edition)*. IARC, Lyon, France.

2 Stathis A, Zucca E, Bekradda M, Gomez-Roca C, Delord JP, de La Motte Rouge T, Uro-Coste E, de Braud F, Pelosi G and French CA (2016). Clinical Response of Carcinomas Harboring the BRD4-NUT Oncoprotein to the Targeted Bromodomain Inhibitor OTX015/MK-8628. *Cancer Discov* 6(5):492-500.

3 Zebary A, Jangard M, Omholt K, Ragnarsson-Olding B and Hansson J (2013). KIT, NRAS and BRAF mutations in sinonasal mucosal melanoma: a study of 56 cases. *Br J Cancer* 109(3):559-564.

4 Hoeben A, van de Winkel L, Hoebers F, Kross K, Driessen C, Slootweg P, Tjan-Heijnen VC and van Herpen C (2016). Intestinal-type sinonasal adenocarcinomas: The road to molecular diagnosis and personalized treatment. *Head Neck* 38(10):1564-1570.