Standaardrapport neusholte en paranasale sinussen

Conclusie

Neoadjuvante therapie: Kies een optie.

Tumorlokalisatie: Kies een optie.

Indien andere, specificeer:

Indien meerdere sinonasale lokalisaties, specificeer:

Lateraliteit: Kies een optie.

Indien meerdere sinonasale lokalisaties, specificeer:

Focaliteit: Kies een optie.

Indien multifocaal, specificeer aantal foci:

Indien niet beoordeeld kan worden, specificeer:

Histologisch tumortype[1]: Kies een optie.

Indien van toepassing, specificeer type:

Differentiatiegraad: Kies een optie.

Indien niet beoordeeld kan worden, specificeer:

[1] Bij neoplasmata van kleine speekselklieren moet de optie “speekselkliercarcinoom (specificeer)” gekozen worden. Het histologische subtype kan vervolgens gespecificeerd worden volgens de lijst opgenomen in het standaardrapport “Grote speekselklieren”.

Lokale uitbreiding: Kies een optie.

Indien lokale uitbreiding werd aangetoond:

Invasie van bot/kraakbeen [2]: Kies een optie.

Invasie van weke delen: Kies een optie.

Invasie van schedelbasis: Kies een optie.

Invasie van huid: Kies een optie.

Invasie van weefsel van het oog: Kies een optie.

Invasie op andere plaats dan hierboven beschreven: Kies een optie.

Indien invasie op andere plaats dan hierboven beschreven, specificeer:

Indien lokale uitbreiding niet beoordeeld kan worden, specificeer:

Lymfovasculaire invasie: Kies een optie.

Indien onderscheid tussen lymfevat- en bloedvatinvasie mogelijk, specificeer: Kies een optie.

Indien niet met zekerheid te bepalen, specificeer:

Perineurale invasie[3]: Kies een optie.

Diameter grootste aangetaste zenuwtak (in mm): Kies een optie.

Indien niet met zekerheid te bepalen, specificeer:

Definitieve minimale tumorvrije marge
(incl. eventuele naresecties en vriescoupes)[4]: Kies een optie.

Definitieve minimale tumorvrije marge (in mm):

Specificeer locatie van minimale marge, indien mogelijk:

Indien niet beoordeeld kan worden, specificeer:

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[2] De aanwezigheid van botinvasie beïnvloedt de stadiëring van de tumor en is een negatieve prognostische factor. Bot- en/of kraakbeeninvasie is een frequente bevinding bij sinonasale carcinomen. Zowel boterosie als destructie moeten worden gerapporteerd als onderdeel van het TNM-stadiëringssysteem. Voor meer informatie, zie 'Note 4 – Extent of invasion' onderaan dit document.

[3] De aan- of afwezigheid van peritumorale perineurale invasie kan invloed hebben op de behandeling en prognose. Het gaat hierbij om peritumorale perineurale invasie langs of voorbij de tumorgrens, en dus niet om intratumorale uitbreiding. Voor meer informatie, zie 'Note 6 – Perineural invasion' onderaan dit document.

[4] Bij sinonasale tumoren worden marges meestal alleen gerapporteerd als positief of negatief, waarbij de afstand tot het snedevlak onmogelijk te bepalen is. Een snedevlak met intraepitheliaal carcinoom moet als positief voor invasief carcinoom worden beschouwd. Voor meer informatie, zie 'Note 7 – Margin status' onderaan dit document.

pTNM classificatie (UICC TNM 8e editie met errata)[5]: pT

Kies de classificatie die van toepassing is:

Sinus maxillaris: Kies een optie.

Neusholte en sinus ethmoidalis: Kies een optie.

Voorvoegsels:

m (multipele primaire tumoren): Kies een optie.

r (recidief): Kies een optie.

y (na neoadjuvante therapie): Kies een optie.

[5] De pathologische stadiëring is gebaseerd op de 'TNM Classification of Malignant Tumours' (8e editie, UICC). Een beschrijving van elke pT-categorie is beschikbaar in 'Note 10 – Pathological staging' onderaan dit document.

Scope

Resectie- en biopsiestalen van mucosale maligniteiten in de neusholten en neusbijholten (paranasale sinussen), inclusief maligniteiten aan de rand van de schedelbasis.

Opmerkingen

- Voor resecties van recidieven kan de dataset pragmatisch worden gebruikt, hoewel sommige variabelen mogelijk niet toepasbaar of te beoordelen zijn.
- Bot- en weke delen tumoren worden in aparte ICCR datasets behandeld.
- Neuro-endocriene neoplasmen worden in een aparte dataset behandeld.
- Halsdissecties en klierexcisies worden behandeld in een aparte dataset. Deze dataset moet, indien van toepassing, in combinatie worden gebruikt.
- Voor afzonderlijke tumoren moet steeds een aparte dataset worden ingevuld.

Dataset gebaseerd op

Bishop JA, Agaimy A, Bal M, Franchi A, Gallia GL, Kahn S, Rooper L, Stelow E, Weinreb I, Helliwell T, Thompson LDR (2024). *Carcinomas of the Nasal Cavity and Paranasal Sinuses Histopathology Reporting Guide. 2nd edition*. International Collaboration on Cancer Reporting; Sydney, Australia. ISBN: 978-1-922324-52-8.

Bijkomende informatie[6]

Note 1 – Tumour site

The sinonasal tract consists of the nasal cavity and the paranasal sinuses (maxillary, ethmoid, frontal, and sphenoid). The nasal cavity can be further subdivided into the nasal septum, floor, lateral wall, and vestibule. Among sinonasal tract carcinomas, the most common site of tumour origin is the maxillary sinus, followed by the nasal cavity and ethmoid sinus. It is rare for carcinomas to arise from the frontal or sphenoid sinuses, except for neuroendocrine tumours in the sphenoid of pituitary origin.[12-16]

The precise tumour site within the sinonasal tract is important to record. First, different staging schemes are utilised for maxillary sinus carcinomas and those arising in the ethmoid sinus or nasal cavity.[17,18] Second, there is prognostic importance to the tumour location. For example, carcinomas primary to the nasal cavity have been shown to have an improved prognosis over carcinomas primary to the paranasal sinuses, likely because nasal carcinomas give rise to symptoms (e.g., nasal obstruction or epistaxis) and thus come to clinical attention sooner.[12,16,19,20] In addition, among maxillary sinus carcinomas, those arising from the anterior-inferior portion have a better prognosis than those arising from the superior-posterior portion, likely because the latter group has easier access to structures such as the orbit or skull base.[17,18] Finally, certain carcinomas are closely associated with specific sinonasal sub-sites. For example, intestinal-type adenocarcinomas and neuroendocrine carcinomas occur most often in the ethmoid sinuses, while squamous cell carcinoma (SCC) occurs most often in the maxillary sinus.[21-24]

It is recognised that many carcinomas affect more than one sinonasal anatomic sub-site. In this case, every affected site should be selected.

Note 2 – Histological tumour type

All sinonasal tumours should be classified based on the most recent edition of the WHO Classification of Head and Neck Tumours, 5th edition, 2024 (Table 1).[3] The list of histologic types discussed in the chapter on sinonasal tumours in the 5th edition of the WHO does not include salivary gland type tumours or neuroendocrine tumours because they are described in sections devoted to those topics. Tumours of these types should be reported using the this dataset, with reference to the ICCR Carcinomas of the major salivary glands dataset for guidance on histological typing.[25] Neuroendocrine neoplasms, specifically carcinomas (small cell and large cell) develop in this site and are recorded here. Neuroendocrine tumours grade 1 and 2 are vanishingly rare, and thus are not specifically included, but can be entered in 'other'.

The sinonasal tract gives rise to a very large and diverse group of malignant tumours.

Accurate tumour typing is important because specific tumour types are associated with different prognoses and, in some cases, different treatments.

Diagnostic accuracy is also expected to take on additional importance in the future as targeted,

[6] Bijkomende informatie ('notes') overgenomen en aangepast vanuit
Bishop JA, Agaimy A, Bal M, Franchi A, Gallia GL, Kahn S, Rooper L, Stelow E, Weinreb I, Helliwell T, Thompson LDR (2024). Carcinomas of the Nasal Cavity and Paranasal Sinuses Histopathology Reporting Guide. 2nd edition. International Collaboration on Cancer Reporting; Sydney, Australia. ISBN: 978-1-922324-52-8.

molecular- based therapies become more prominent. While routine histologic examination has historically been the mainstay for diagnosis, an increasingly large number of sinonasal malignancies require ancillary testing to diagnose (see **NOTE 14 – ANCILLARY STUDIES**). Because these ancillary techniques are not universally available, a diagnosis of 'Carcinoma, not otherwise specified' with an explanatory comment may be given if a diagnosis cannot be further refined with the testing methods available to the pathologist.

Table 1: World Health Organization classification of tumours of the nasal cavity, paranasal sinuses and skull base.[3]

Descriptor	**ICD-O codes**[a]
Carcinomas	
Keratinising squamous cell carcinoma	8071/3
Other squamous cell carcinoma subtypes: Papillary, verrucous, spindle cell, acantholytic, adenosquamous, carcinoma cuniculatum	
Non-keratinising squamous cell carcinoma	8072/3
NUT carcinoma	8023/3
SWI/SNF complex-deficient sinonasal carcinoma	8044/3
Sinonasal lymphoepithelial carcinoma	8082/3
Sinonasal undifferentiated carcinoma	8020/3
Teratocarcinosarcoma	9081/3
HPV-related multiphenotypic sinonasal carcinoma	8483/3
Adenocarcinoma	
Intestinal-type adenocarcinoma	8144/3
Non-intestinal-type adenocarcinoma	8140/3
Neuroendocrine neoplasms	
Small cell neuroendocrine carcinoma	8041/3
Large cell neuroendocrine carcinoma	8013/3
Carcinoma mixed with small cell neuroendocrine carcinoma[b]	8045/3
Carcinoma mixed with large cell neuroendocrine carcinoma[b]	8013/3

[a] These morphology codes are from the International Classification of Diseases for Oncology, third edition, second revision (ICD-0-3.2).[26] Behaviour is coded /0 for benign tumours; /1 for unspecified, borderline, or uncertain behaviour: /2 for carcinoma in situ and grade Ill intraepithelial neoplasia; /3 for malignant tumours, primary site: and /6 for malignant tumours, metastatic site. Behaviour code /6 is not generally used by cancer registries. Subtype labels are indented.

[b] This terminology is synonymous with the ICD-O terminology of combined small/large cell neuroendocrine carcinomas.

Note 3 – Histological tumour grade

The applicability of tumour grading in the sinonasal tract is dependent on the histologic type (see Table 2). Most newly-described entities have no established grading scheme, but rather are known to have inherent biologic behaviour (e.g., NUT carcinoma is very aggressive, while human papillomavirus (HPV)-related multiphenotypic sinonasal carcinoma is relatively indolent).[27,28]

Still, several grading systems for each tumour type are available, with differing merits, and as such, recording which system has been applied is more clinically meaningfully (use 'specify' to state the system used), with the ICCR deferring to the WHO Classification current edition for grading guidance and preference.[3]

Table 2: Applicable grading schemes for sinonasal tumour types.

Histologic tumour type	**Grading scheme**
Keratinising squamous cell carcinoma	Well-, moderately-, or poorly-differentiated
Non-keratinising squamous cell carcinoma	Not applicable
NUT carcinoma	Not applicable
SWI/SNF complex-deficient sinonasal carcinoma	Not applicable
Sinonasal lymphoepithelial carcinoma	Not applicable
Sinonasal undifferentiated carcinoma	Not applicable
Neuroendocrine carcinoma	High grade
Human papillomavirus (HPV)-related multiphenotypic sinonasal carcinoma	Not applicable
Intestinal-type sinonasal adenocarcinoma	Emerging data to support well-, moderately-, or poorly-differentiated scheme.[29]
Non-intestinal type sinonasal adenocarcinoma	Low grade or high grade
Salivary-type adenocarcinoma	See ICCR Carcinoma of major salivary glands dataset.[25]
Teratocarcinosarcoma	Not applicable

Note 4 – Extent of invasion

Bone and/or cartilage invasion is a frequent finding in sinonasal carcinomas. Both bone erosion and destruction have to be reported as part of the definition of the primary tumour in the TNM staging system.[17,18] Soft tissue infiltration and skull base involvement are incorporated into the staging.

Note 5 – Lymphovascular invasion

Lymphovascular invasion consists in the presence of neoplastic cells within an endothelial-lined space, either lymphatic or venous, and should be distinguished from retraction artefact. Immunohistochemical staining for an endothelial marker may help in this distinction.

Lymphovascular invasion is reported in up to 60% of sinonasal SSCs, but its clinical significance at this anatomic site remains to be determined.[30]

Cases that are still equivocal after taking additional steps may be reported as 'indeterminate' for lymphovascular invasion, but this designation should be sparingly used and it is useful to provide the reason in a comment in the report.

Note 6 – Perineural invasion

The frequency of perineural invasion in sinonasal carcinomas is lower than other head and neck sites, and varies according to the histologic subtype, being most frequent in adenoid cystic carcinoma, sinonasal undifferentiated carcinoma and SSC.[30,31] In sinonasal carcinomas, perineural invasion is associated with a high rate of positive margins, with variable results with respect to outcome.[30,32]

Note 7 – Margin status

As endoscopic procedures are now the predominant sinonasal tumour resection, margins are most often sent as numerous separate, fragmented specimens. Therefore, margins can usually only be reported as positive or negative, with distance to margin being impossible to determine. The significance of positive margins has been historically extrapolated from studies on oral cavity tumours,[33-35] but there is increasing evidence to support a worse outcome for sinonasal tumours as well.[32,36-39]

Surface dysplasia and carcinoma in situ are exceedingly rare in sinonasal carcinomas, but secondary surface spread from an invasive carcinoma can be seen.[28,40] For the purposes of this dataset, a margin with intraepithelial carcinoma should be regarded as positive for invasive carcinoma.

Note 8 – Precursor lesions

It is well established that sinonasal papillomas (especially the inverted and oncocytic subtypes) may give rise to sinonasal carcinomas, most often SSCs but rarely other types.[41,42] Surface dysplasia is rare in the sinonasal tract, but it is a characteristic precursor lesion in HPV-related multiphenotypic sinonasal carcinoma.[28] It has been suggested that some sinonasal non-salivary adenocarcinomas may arise from respiratory epithelial adenomatoid hamartoma or seromucinous hamartoma, but the precursor role of these lesions is unresolved.

Note 9 – Ancillary studies

While keratinising SSC – the most common sinonasal malignancy – can be diagnosed by routine microscopy, ancillary techniques are becoming increasingly necessary to diagnose many sinonasal tumours (see Table 3). If the specific technique is not performed, then a note to that effect should be entered, along with the most likely candidate category (i.e., if NUT immunohistochemistry is not available, state non-keratinising SCC, and suggest it may be in this category).

While parts of this element are deemed core, consideration should be given to temporarily downgrading these to non-core until resources allow.

Table 3: Core and non-core ancillary techniques for each sinonasal tumour type.

Histologic tumour type	Ancillary techniques
Keratinising squamous cell carcinoma	Not needed in most cases (non-core).
Non-keratinising squamous cell carcinoma	Diffuse expression of squamous markers (e.g., p40, CK5/6) required (core). Negative CD99 is useful to exclude adamantinoma-like Ewing sarcoma, and negative NUT to exclude NUT carcinoma (non-core). Many are human papillomavirus (HPV)-related, but HPV testing is not currently required (non-core).
NUT carcinoma	Demonstration of *NUT* gene rearrangement or positivity with monoclonal antibody against NUT protein is required (core).[43]
SWI/SNF complex-deficient sinonasal carcinoma	Loss of expression of either SMARCB1 or SMARCA4 by immunohistochemistry is required (core).[44,45]
Sinonasal lymphoepithelial carcinoma	Usually positive for Epstein-Barr virus (EBV) by in situ hybridization.[46] Useful but not required (non-core).
Sinonasal undifferentiated carcinoma	Diagnosis of exclusion, so other similar- appearing entities (e.g., non-keratinising squamous cell carcinoma, NUT carcinoma, SWI/SNF complex-deficient sinonasal carcinomas) must be excluded (core).[47]
Neuroendocrine carcinoma	Positive staining with at least one specific neuroendocrine marker (synaptophysin, chromogranin, INSM1) and an epithelial marker required (core). Other tumours which express these markers must be excluded, e.g., olfactory neuroblastoma, teratocarcinosarcoma.
HPV-related multiphenotypic sinonasal carcinoma	HPV-specific testing (in situ hybridization or PCR) is required (core). Testing should include type 33 which is most common.[48]
Intestinal-type sinonasal adenocarcinoma	Immunostaining with CDX2 and CK20 is useful but not required (non-core).[49]
Non-intestinal type sinonasal adenocarcinoma	Often positive for SOX10, S100, and DOG1, with a subset showing nuclear beta-catenin expression, but not required for diagnosis (non-core).[50,51]
Salivary-type adenocarcinoma	See ICCR Carcinoma of major salivary glands dataset.[25]
Teratocarcinosarcoma	SMARCA4 is often completely or partially lost and beta-catenin staining is frequently nuclear. Useful in a limited sample, but not required to diagnose (non-core).[52]

Note 10 – Pathological staging

By Union for International Cancer Control (UICC)/American Joint Committee on Cancer (AJCC) convention,[17,18] the designation 'T' refers to a primary tumour that has not been previously treated. The symbol 'p' refers to the pathologic classification of the stage, as opposed to the clinical classification, and is based on gross and microscopic examination. pT entails a resection of the primary tumour adequate to evaluate the highest pT category, pN entails removal of nodes adequate to validate lymph node metastasis, and pM implies microscopic examination of distant lesions. There is no pathologic M0 category as this designation requires clinical evaluation and imaging. Clinical classification (cTNM) is usually carried out by the evaluating clinician before treatment during initial evaluation of the patient or when pathologic classification is not possible.

Pathological staging is usually performed after surgical resection of the primary tumour and depends on documentation of the anatomic extent of disease, whether or not the primary tumour has been completely removed. If a biopsied tumour is not resected for any reason (e.g., when technically unfeasible) and if the highest T and N categories or the M1 category of the tumour can be confirmed microscopically, the criteria for pathologic classification and staging have been satisfied even though total removal of the primary cancer was not performed.

Primary tumour (pT)

TX	Primary tumour cannot be assessed
T0	No evidence of primary tumour
Tis	Carcinoma in situ

<u>Maxillary sinus</u>

T1	Tumour limited to the mucosa with no erosion or destruction of bone
T2	Tumour causing bone erosion or destruction, including extension into the hard palate and/or middle nasal meatus, except extension to posterior wall of maxillary sinus and pterygoid plates
T3	Tumour invades any of the following: bone of posterior wall of maxillary sinus, subcutaneous tissues, floor or medial wall of orbit, pterygoid fossa, or ethmoid sinuses
T4a	Tumour invades any of the following: anterior orbital contents, skin of cheek, pterygoid plates, infratemporal fossa, cribriform plate, sphenoid or frontal sinuses
T4b	Tumour invades any of the following: orbital apex, dura, brain, middle cranial fossa, cranial nerves other than maxillary division of trigeminal nerve (V2), nasopharynx, or clivus

<u>Nasal cavity and ethmoid sinus</u>

T1	Tumour restricted to one subsite of nasal cavity or ethmoid sinus, with or without bony invasion
T2	Tumour involves two subsites in a single site or extends to involve an adjacent site within the nasoethmoidal complex, with or without bony invasion
T3	Tumour extends to invade the medial wall or floor of the orbit, maxillary sinus, palate, or cribriform plate
T4a	Tumour invades any of the following: anterior orbital contents, skin of nose or cheek, minimal extension to anterior cranial fossa, pterygoid plates, sphenoid or frontal sinuses

T4b Tumour invades any of the following: orbital apex, dura, brain, middle cranial fossa, cranial nerves other than V2, nasopharynx, or clivus

TNM Descriptors

For identification of special cases of TNM or pTNM classifications, the 'm' suffix and 'y' and 'r' prefixes are used. Although they do not affect the stage grouping, they indicate cases needing separate analysis.

The 'm' suffix indicates the presence of multiple primary tumours in a single site and is recorded in parentheses: pT(m)NM.

The 'y' prefix indicates those cases in which classification is performed during or following initial multimodality therapy (i.e., neoadjuvant chemotherapy, radiation therapy, or both chemotherapy and radiation therapy). The cTNM or pTNM category is identified by a 'y' prefix. The ycTNM or ypTNM categorises the extent of tumour actually present at the time of that examination. The 'y' categorisation is not an estimate of tumour prior to multimodality therapy (i.e., before initiation of neoadjuvant therapy).

The 'r' prefix indicates a recurrent tumour when staged after a documented disease-free interval, and is identified by the 'r' prefix: rTNM.

For the pN classification of regional lymph nodes, see ICCR Nodal excisions and neck dissection specimens dataset.[2]

Reporting of pathological staging categories (pT,pN,pM) is based on the evidence available to the pathologist at the time of reporting. As indicated in UICC TNM8 and AJCC TNM8,[17,18] the final stage grouping of a patient's tumour is based on a combination of pathological staging and other clinical and imaging information.

Pathological staging should not be reported if the submitted specimen is insufficient for definitive staging, especially with biopsy samples (core needle, incisional or excisional). Staging is based on the submitted resection, and even if there is grossly residual disease or there is tumour at the margin, pT staging should only be reported on findings in the resection specimen and/or at operation.[17,18]

The reference document TNM Supplement: A commentary on uniform use, 5th Edition (C Wittekind et al. editors) may be of assistance when staging.[53]

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