NDRS
NATIONAL DISEASE REGISTRATION SERVICE

National Disease Registration Service (NDRS)

Ear tumours

v3 December 2025

Welcome to this NDRS training module on tumours of the ear, which has been designed to help Cancer Administration staff gain a better understanding of the diseases and the terminology used by the clinical teams.

Tumours of the Ear

- For recording purposes, tumours of the inner- and middle-ear come under Head & Neck while tumours of the outer-ear generally come under Skin
- For clinical purposes, tumours of the ear may be covered by a different MDT depending on tumour location, morphology and stage. This may include:
  - Head & Neck MDT
  - Skin MDT
  - Sarcoma MDT
  - Neuroendocrine MDT
  - CTYA or relevant Paediatric MDT

While tumours of the ear may be covered by any of the MDTs shown - depending on the location, morphology and stage - it should be noted that middle- and inner-ear tumours are recorded as a subset of the Head & Neck tumour group, while tumours of the outer-ear would generally be recorded under Skin.

Agenda

- Ear
- Summary
- Acknowledgements

This module may be paused at any time

We're going to give you a brief introduction to tumours of the ear, including some of the symptoms that patients might experience. We'll look at the anatomy & physiology and we'll then go through diagnosis & treatment options. This module can be paused at any time.

Ear tumours

In this section we will cover:

- Causes and Risk Factors
- Signs and Symptoms
- Anatomy & Physiology
- Regional Lymph Nodes
- Diagnosis
- Morphology
- ICD10 coding
- Grade
- Stage
- Treatment

We'll start off by looking at the causes and risk factors …

Ear – Causes & Risk Factors

- The causes of many ear cancers are not fully understood
- Radiotherapy to the head and neck is thought to be a risk factor but further research is needed
- Known risk factors for tumours of the ear flap include:
  - Having fair skin
  - Exposure to ultraviolet light

While the root causes of many ear cancers are not really understood, known risk factors for tumours on the outer ear include fair skin and ultraviolet light exposure.

Ear – Signs & Symptoms

The symptoms of ear cancer depend on the location of the tumour but can include:

- Ear flap (pinna):
  - The main symptom is a spot or sore that doesn't heal within 4 weeks
- Ear canal:
  - Pain
  - Discharge from the ear
  - Loss of hearing
  - A lump in the ear canal
  - Facial weakness
  - Bleeding from the ear

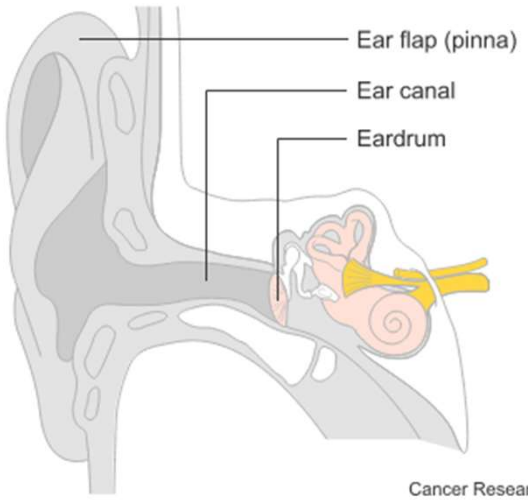
A tumour on the outer ear may appear to be a lesion that doesn't heal for a few weeks. Symptoms of a tumour in the ear canal might include ear pain, discharge or facial weakness.

Ear – Signs & Symptoms

- Middle ear:
  - Hearing loss
  - Earache
  - Paralysis on the side of the face near the affected ear
- Inner ear:
  - Pain
  - Headache
  - Hearing loss
  - Tinnitus (ringing in the ears)
  - Dizziness

A patient with a middle ear tumour might present with hearing loss or facial paralysis whereas a tumour of the inner ear may cause headaches, hearing loss or tinnitus

Ear – Anatomy & Physiology



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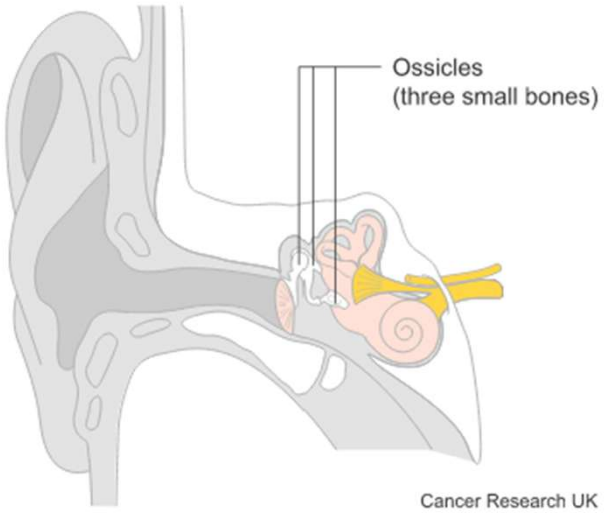
The ear is divided into three areas: Outer, middle and inner

The outer-ear consists of three parts:

- The ear flap (also called the pinna)
- The ear canal (meatus)
- The eardrum (tympanic membrane)

The outer ear is comprised of the ear flap, ear canal and eardrum.

Ear – Anatomy & Physiology

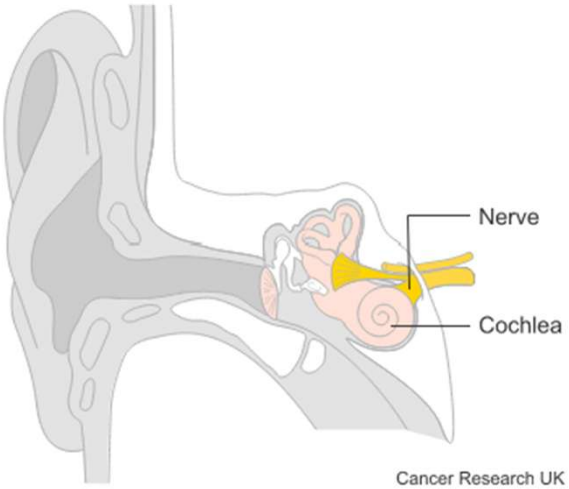


The middle ear is a small cavity containing three small bones (ossicles) that pass vibrations from the tympanic membrane to the inner ear:

- The hammer (malleus)
- The anvil (incus)
- The stirrup (stapes)

The middle ear passes vibrations from the eardrum to the inner ear using three small bones known as the hammer, anvil and stirrup

Ear – Anatomy & Physiology



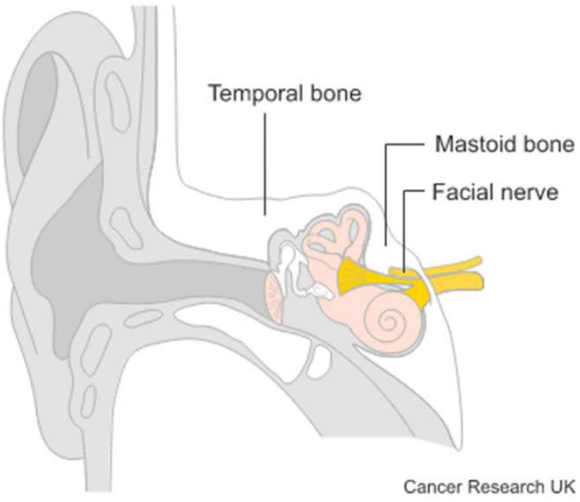
The inner ear is a fluid-filled space containing the cochlea, a spiral shaped tube

The cochlea contains tiny hair-like nerves that convert the vibrations to nerve impulses that travel to the brain via the auditory nerve

The inner ear also contains a number of fluid-filled cavities that help us to maintain postural balance

A structure called the cochlea within the inner ear converts vibrations into nerve impulses which are then transmitted to the brain. The inner ear also helps us to maintain balance

Ear – Anatomy & Physiology



The bone surrounding the ear is a part of the skull known as the temporal bone:

- The mastoid bone is the section of the temporal bone that protrudes behind the ear
- The inner part of the mastoid bone is composed of a honeycomb-like structure which houses the nerves that control the movement of the face and tongue

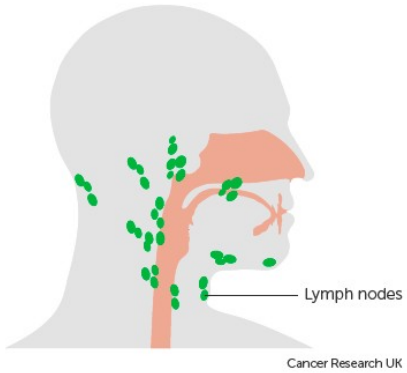
The temporal bone surrounds the ear. A subsection of the temporal bone, known as the mastoid bone, channels the nerves that control the movement of the face and tongue

Ear – Regional Lymph Nodes

The ipsilateral lymph nodes (those on the same side as the primary tumour) are regarded as regional for the ear

Contralateral nodes (on the opposite side of the body to the primary tumour) are also regarded as regional but will result in a higher N stage for stageable tumours

- Preauricular (just in front of the ear)
- Cervical



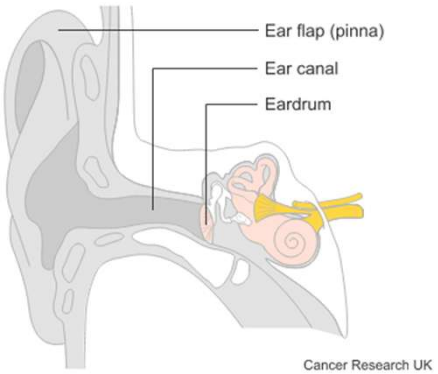
During an MDT, the clinical team might mention one or more groups of lymph nodes which may be ipsilateral (on the same side of the body as the primary tumour) or contralateral (on the opposite side) . Depending on any further planned staging investigations, mention of these lymph nodes for tumours of the outer ear may indicate that stage has been determined. Lymph nodes regarded as regional for the outer ear are listed here. Other groups of lymph nodes would be regarded as distant.

Ear – Diagnosis

Ear

- Biopsy (outer or middle ear lesions)
- MRI, CT or other imaging

- Hearing test for the unaffected ear



Diagnosis of a tumour may require a biopsy and imaging. The hearing in the unaffected ear may also need to be checked.

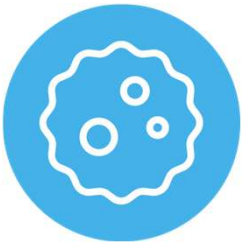
Ear – Morphology

Morphology of ear tumours is shown including the ICD-O-3 Morphology code

Keratinising squamous cell carcinoma – M8071/3 is the most common invasive morphology arising in the ear

Other types of invasive tumour in the ear canal, middle or inner ear include:

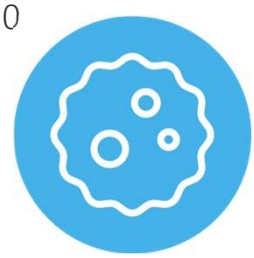
- Other sub-types of squamous cell carcinoma
- Adenocarcinoma – M8140/3
- Basal cell carcinoma – M8090/3
- Adenoid cystic carcinoma – M8200/3
- Melanoma – M8720/3 (please refer to the Skin training module for other sub-types of malignant melanoma: https://digital.nhs.uk/ndrs/data/cancer-data-training-materials)
- Middle ear neuroendocrine tumour (MeNET) – various morphologies (please refer to the Neuroendocrine Key Points training module https://digital.nhs.uk/ndrs/data/cancer-data-training-materials)



The most common morphology of tumour arising in the ear is a keratinising squamous cell carcinoma. Other possible morphologies include other sub-types of SCC, adenocarcinomas and melanomas. It's expected that the ICD-O-3 morphology code would be included on the pathology report

Ear – Morphology - Non-invasive tumours

Where a skin lesion is determined to have any ICD-O-3 morphology code in the range M8720 to M8790 with a behaviour code of /2 (indicating a non-invasive in-situ tumour) it would be classified as an in-situ melanoma in ICD10



- Melanoma in situ - M8720/2
- Precancerous melanosis, NOS - M8741/2
- Lentigo Maligna - M8742/2

Morphology coding is normally included in the pathology report

Non-invasive tumours of morphologies **other** than a melanoma in-situ do not require a COSD record

It should be noted that melanoma in-situ must also be recorded in your cancer data management system.

ICD10 coding – Invasive ear tumours

- C30.1 – Malignant neoplasm of middle ear (includes eustachian tube, inner ear & mastoid air cells)
- C41.0 – Malignant neoplasm of bone of skull and face
- C43.2 – Malignant melanoma of skin of external ear / external ear canal
- C44.2 – Non-melanoma of skin of external ear / external ear canal
- C47.0 – Malignant neoplasm of peripheral nerves of head, face and neck
- C49.0 – Malignant neoplasm of connective and soft tissue of head, face and neck (includes cartilage of ear)

Invasive tumours are coded with a C-prefix in ICD10…

ICD10 coding – Non-invasive ear tumours

- D03.2 – Melanoma in situ of ear and external auricular canal

Melanoma in situ of the ear require a COSD record and as such must also be recorded in your cancer data management system

- D04.2 – Carcinoma in-situ, skin of ear and external auricular canal

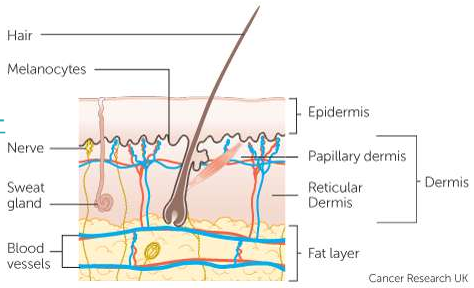
Non-invasive carcinomas of the skin of the ear do not require a COSD record. NDRS sources information on these tumours directly from the pathology laboratories

… while melanoma in-situ are given a D-prefix code and, as mandated conditions for the registry, must be recorded in your cancer data management system. D coded carcinomas do not require a COSD record as we obtain information on these tumours from the path labs

Melanoma and non-melanoma of the outer ear

- For malignant melanoma, melanoma in-situ and invasive non-melanoma of the outer ear, additional data may need to be recorded such as Breslow depth, mitotic rate or Clark level

- Please refer to the NDRS training module for Skin: https://digital.nhs.uk/ndrs/data/cancer-data-training-materials



Invasive skin lesions may require additional data items to be recorded. Depending on the morphology, this may mean recording the Breslow depth, mitotic rate or Clarke level. For more details on recording melanoma and non-melanoma of the outer-ear, please refer to the Skin training module

Ear – Grade

- Grade 1 (well differentiated / low grade) - Tumours look very similar to the normal tissue and retain a degree of functionality. Grade 1 tumours have the best prognosis
- Grade 2 (moderately differentiated / intermediate grade) - Tumours are formed of cells that somewhat resemble the normal tissue and retain limited functionality
- Grade 3 (poorly differentiated / high grade) - Tumours have very abnormal cells with little or no functionality. Grade 3 tumours have the worst prognosis

Grade does not apply to melanoma or melanoma in-situ

Grade is determined by the visual similarity of the tumour cells to normal, healthy cells. The greater the difference in appearance, the higher the grade.

Ear – Stage

- Invasive tumours of the outer-ear are staged as follows:
  - For diagnosis dates up to 31st December 2025 use UICC TNM v8
  - For diagnosis dates from 1st January 2026 use UICC TNM v9
- Please note that the TNM version must be accurately recorded – if you are unable to amend the version on your cancer data management system, please refer to your line manager
- If, after 1st January 2026, your cancer data management system has not been amended to include TNM v9 please record the TNM v9 stage and add the following statement to the Primary Diagnosis Subsidiary Comment field: Patient staged using TNM9 not TNM8 as per CR2070

Invasive neoplasms of the outer ear are staged using the appropriate UICC TNM version.

Ear – Stage

- For details on recording stage, please see the NDRS training module KPI-TNM Staging 101, available on this link:

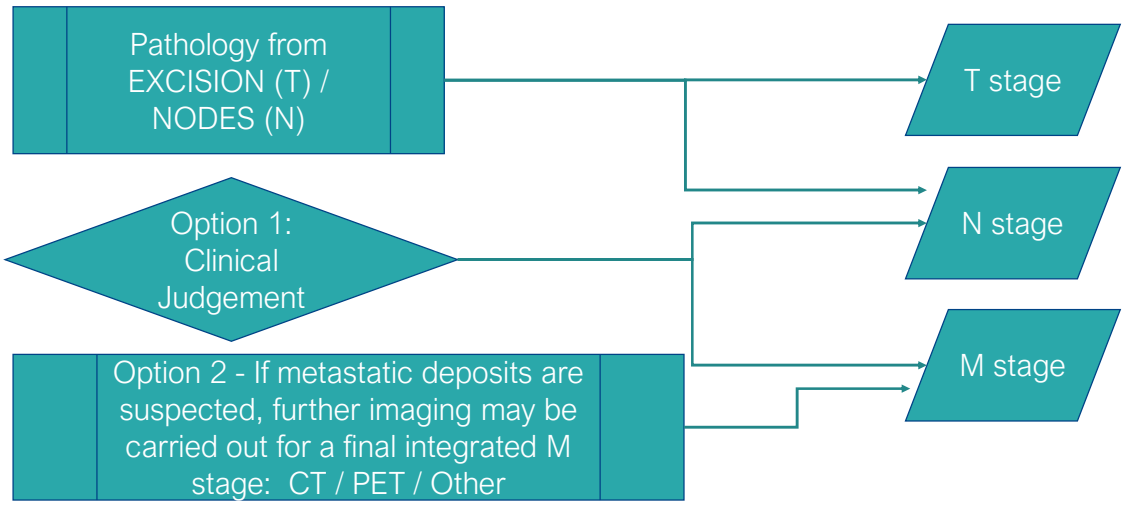
  https://digital.nhs.uk/ndrs/data/cancer-data-training-materials

- Staging data sheets can also be downloaded from the NDRS website for clinical use: https://digital.nhs.uk/ndrs/data/cancer-data-training-materials/staging-sheets

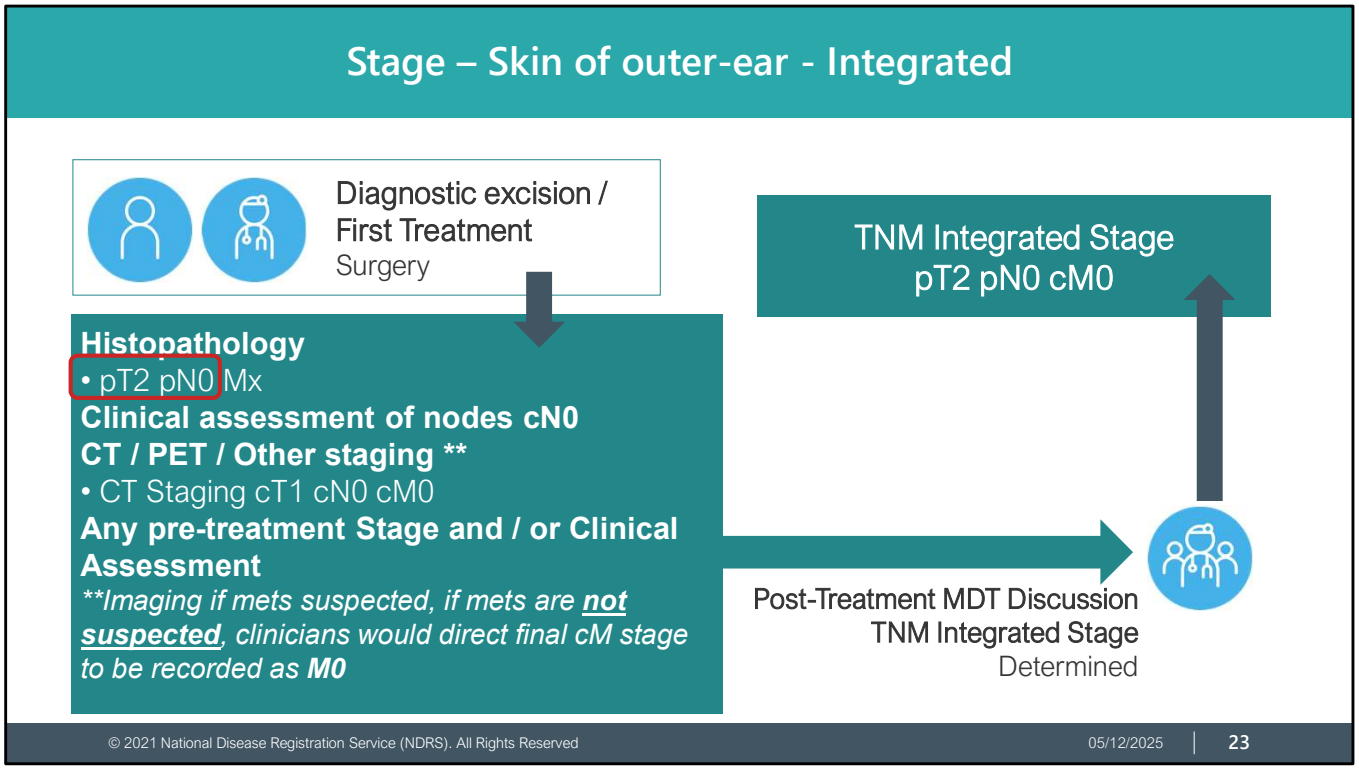
- Invasive tumours of the middle- and inner-ear are not considered stageable

For more details on recording stage, please see the NDRS training module KPI-TNM Staging 101 and the relevant staging data sheets, available on the NDRS website. It should be noted that invasive tumours of the middle- and inner-ear are not considered stageable.

Stage – Skin of outer-ear - Integrated



If the outer-ear tumour is a skin lesion, the patient would be both diagnosed and treated by the surgical excision of the lesion if it's of a suitable size and location. Additionally, imaging is not routinely carried out for skin lesions meaning that the assessment of N and M stages may rely on clinical judgement alone

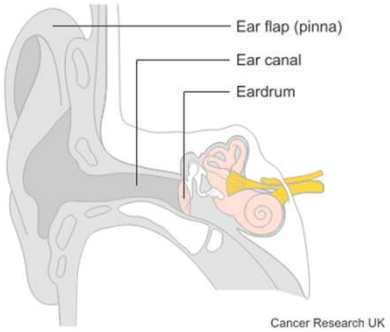


The full Integrated stage can however be determined by the clinical team: the pathological T stage is combined with any other information collected … such as either a pathological or clinical N stage and an assessment of metastasis which is usually arrived at by clinical means. Where there's no suspicion of mets, it's expected that the clinical team would direct administrators to record M0.

Ear - Treatment – Overview

Treatment for tumours of the ear will depend on the location, type and size / stage of the tumour as well as the general health of the patient

- Surgery – sometimes offered for tumours in any part of the ear
- Radiotherapy – this may be offered as a main or adjuvant treatment +/- chemotherapy
- Chemotherapy – this may be offered with radiotherapy for tumours of the middle- or inner-ear as a neo-adjuvant treatment to shrink a tumour prior to surgery or alone as a non-curative option to control symptoms



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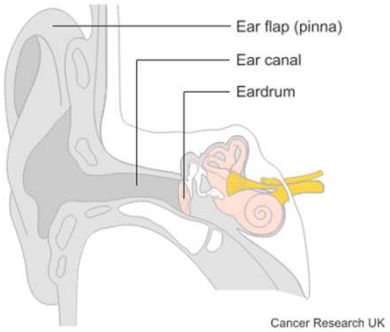
Treatment of ear tumours will vary according to the location, type and stage. Surgery may be offered for tumours in any part of the ear, as may Radiotherapy. Chemotherapy may be offered either in conjunction with radiotherapy as a neo-adjuvant treatment or alone with palliative intent.

Ear - Treatment – Surgery (outer-ear)

Surgery as a treatment for tumours of the outer ear may be:

- Excision biopsy – for small, early-stage tumours
- Mohs surgery – micrographic surgery where the tumour margins are examined under a microscope during the surgery. Further tissue is only removed if the margins are not clear to minimise the damage to healthy tissue around the tumour
- Wide local excision +/- skin graft – a larger area of the ear tissue is removed and depending on the size a graft of skin from elsewhere in the body may be required



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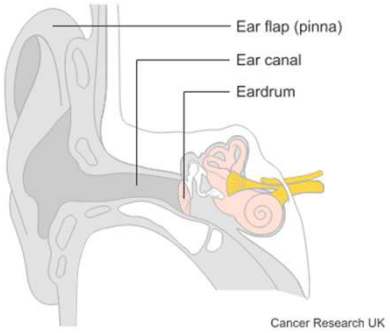
Surgical excision for the outer-ear can range from an excision biopsy for small early-stage tumours, a Mohs micrographic surgery or a wide local excision…

Ear - Treatment – Surgery (outer-ear)

- Lymph node and salivary gland surgery – the surgery may include removal of nearby lymph nodes and the nearest salivary gland
- Removal of the outer ear – where the cancer affects most of the outer ear, excision of the entire outer structure may be offered
  - Reconstruction with living tissue – a complex process that requires multiple surgical procedures
  - Application of a prosthetic ear – pins are inserted into the bone behind the ear to which a removable silicone prosthetic can be attached



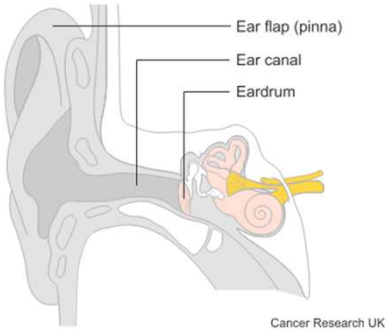
… to excision of nearby lymph nodes, salivary glands or the outer-ear in its entirety.

Ear - Treatment – Surgery (middle- and inner-ear)

Surgery as a treatment for tumours of the middle- and inner-ear may require removal of all or part of:

- The ear canal
- The temporal bone
- The middle-ear
- The inner-ear
- The lymph nodes surrounding the ear
- On rare occasions, the facial nerve

- Depending on the structures removed, hearing and balance may be affected



Middle- or inner-ear tumours may require the surgical excision of different parts of the bone, the ear structure or on occasion the facial nerve.

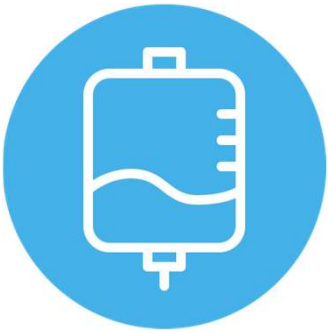
Ear - Treatment - Radiotherapy

- Radiotherapy is an alternative to surgery for some types of middle- and inner-ear cancer as it may cure early-stage tumours and avoid major surgery
- The type of radiotherapy used is known as intensity modulated radiotherapy (IMRT) which shapes the radiation beam to closely fit the area of the cancer
- Radiotherapy may be given in conjunction with chemotherapy
- Radiotherapy may also be given as adjuvant or palliative treatment

Radiotherapy may be a suitable alternative to surgery depending on the type and stage of the tumour. It may also be offered adjuvantly or as a palliative treatment to control symptoms

Ear - Treatment - Chemotherapy

- Chemotherapy is not offered as a stand-alone curative treatment for tumours of the ear
- Chemotherapy is sometimes offered prior to surgery in order to shrink tumours of the middle- and inner-ear
- Chemotherapy may be offered in conjunction with radiotherapy as an adjuvant treatment
- Chemotherapy may also be offered as a palliative treatment to control symptoms



Whilst not offered as an alternative to surgery, chemotherapy may be offered neo-adjuvantly (to shrink a tumour prior to surgical excision), as an adjuvant treatment together with radiotherapy or as a palliative treatment

Summary

In summary …

Summary

- Risk factors for most ear tumours are not well understood but UV light exposure has been identified as a risk for outer-ear tumours

UV light exposure is a known risk factor for tumours of the outer-ear although the risk factors for other ear tumours are not currently well understood

Summary

- Risk factors for most ear tumours are not well understood but UV light exposure has been identified as a risk for outer-ear tumours
- Signs of an ear tumour may include non-healing lesions, pain, discharge from the ear or balance issues, depending on the location of the tumour

Depending on the location, symptoms of an ear tumour may include pain, discharge or balance issues

Summary

- Risk factors for most ear tumours are not well understood but UV light exposure has been identified as a risk for outer-ear tumours
- Signs of an ear tumour may include non-healing lesions, pain, discharge from the ear or balance issues, depending on the location of the tumour
- Investigations may require a biopsy or some form of imaging

Investigations may include a biopsy and some form of imaging

Summary

- Risk factors for most ear tumours are not well understood but UV light exposure has been identified as a risk for outer-ear tumours
- Signs of an ear tumour may include non-healing lesions, pain, discharge from the ear or balance issues, depending on the location of the tumour
- Investigations may require a biopsy or some form of imaging
- All invasive tumours must be recorded in your cancer data management system, along with any melanoma-in-situ

All invasive tumours, plus any melanoma in-situ, must be recorded in your cancer data management system

Summary

- Risk factors for most ear tumours are not well understood but UV light exposure has been identified as a risk for outer-ear tumours
- Signs of an ear tumour may include non-healing lesions, pain, discharge from the ear or balance issues, depending on the location of the tumour
- Investigations may require a biopsy or some form of imaging
- All invasive tumours must be recorded in your cancer data management system, along with any melanoma-in-situ
- Stage must be recorded for all stageable invasive tumours of the outer-ear. Tumours of the middle- and inner-ear are not considered to be stageable

Outer-ear tumours require a stage to be recorded. Middle- and inner-ear tumours are not considered stageable

Summary

- Risk factors for most ear tumours are not well understood but UV light exposure has been identified as a risk for outer-ear tumours
- Signs of an ear tumour may include non-healing lesions, pain, discharge from the ear or balance issues, depending on the location of the tumour
- Investigations may require a biopsy or some form of imaging
- All invasive tumours must be recorded in your cancer data management system, along with any melanoma-in-situ
- Stage must be recorded for all stageable invasive tumours of the outer-ear. Tumours of the middle- and inner-ear are not considered to be stageable
- Treatment is determined according to the type, location and stage of the tumour as well as the general health of the patient

The type, location and stage of a tumour may determine the treatment plan

Summary

- Additional guidance on recording COSD data including morphology, topography, staging and recording a diagnosis can be found at: https://digital.nhs.uk/ndrs/data/cancer-data-training-materials
- Staging data sheets can also be downloaded from the NDRS website for clinical use: https://digital.nhs.uk/ndrs/data/cancer-data-training-materials/staging-sheets

Additional training modules as well as Staging sheets for clinical use may be downloaded from the NDRS website.

Summary

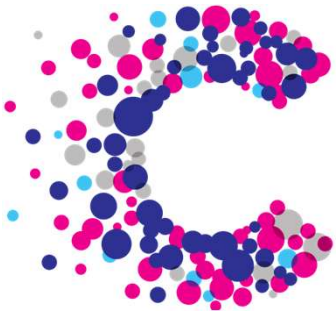
- If in any doubt as to whether you should be recording a diagnosis, please refer to the latest COSD User Guide, Appendices A, B & C
- For guidance on the required staging system, please refer to the latest COSD User Guide, Appendix E

- https://digital.nhs.uk/ndrs/data/data-sets/cosd#downloads

Do please remember, guidance **is** available on our website. You can download the COSD User Guide by clicking on this link and selecting the COSD version appropriate to your trust.

Acknowledgements

Many thanks to Cancer Research UK for the use of their images within this training module.



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We'd like to thank Cancer Research UK for the use of their images within this training module.

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If you have any questions on the information contained within this module or about COSD in general, do please feel free to email your regional Data Liaison Manager