

Oral Pathology - Cysts, Tumours & Biopsies

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Description:

Oral pathology encompasses the diagnosis, management and surgical treatment of diseases, growths and abnormalities affecting the mouth, jaws and surrounding structures. This includes cysts, benign tumours, pre-cancerous...

Details:

Collins Street Specialist Centre — Oral Pathology: Cysts, Tumours and Biopsies

What is oral pathology?

Oral pathology covers the diagnosis, management and surgical treatment of diseases, growths and abnormalities affecting the mouth, jaws and surrounding structures. That includes jaw cysts, benign tumours, pre-cancerous lesions, oral cancers and a wide range of other conditions arising within the oral and maxillofacial region.

At Collins Street Specialist Centre, our oral and maxillofacial surgeons are trained across the full spectrum of oral pathological conditions — from initial identification and biopsy through to definitive surgical treatment and long-term follow-up.

When might you need an oral pathology assessment?

A referral to an oral and maxillofacial surgeon is appropriate when you present with any of the following:

- A persistent lump or swelling in the mouth, jaw, face or neck that hasn't resolved over time
- An unusual lesion or ulcer that's been present for more than two to three weeks
- White or red patches on the oral tissues — known clinically as leukoplakia or erythroplakia — which may indicate pre-cancerous change
- Unexplained numbness or tingling affecting the lip, tongue or face
- A cyst identified on radiograph during a routine dental examination
- Jaw swelling or expansion that may suggest a developing cyst or tumour
- Difficulty swallowing, a persistent sore throat or voice changes identified as potentially oral in origin
- A biopsy recommendation from your dentist or treating medical practitioner
- A non-healing extraction socket that may indicate underlying pathology
- Persistent changes in the colour or texture of the oral mucosa that concern your dentist

Types of Oral Lesions

Jaw Cysts

Cysts are fluid-filled sacs that develop within the jawbone or soft tissues of the mouth. They are among the most common pathological conditions affecting the jaws. Commonly encountered types include:

- **Dentigerous cysts** — These develop around the crown of an unerupted tooth, most commonly around impacted wisdom teeth. They are often discovered incidentally on routine dental X-rays and may grow to considerable size without symptoms
- **Radicular cysts** — Arising from the apex of a non-vital (dead) or infected tooth, these are the most common type of jaw cyst. They develop as a

consequence of chronic periapical infection and may persist even after the causative tooth has been extracted - **Keratocystic odontogenic tumours (KCOTs)** — Previously called odontogenic keratocysts, these lesions are particularly important because of their tendency to recur after treatment. They can be locally aggressive, expanding through the jaw and displacing adjacent teeth - **Lateral periodontal cysts** — Less common, these develop along the lateral root surface of a vital tooth - **Nasopalatine duct cysts** — Arising in the midline of the anterior hard palate, these are the most common non-odontogenic cyst of the jaws

Left untreated, jaw cysts expand progressively, compromising bone integrity and placing adjacent teeth, nerves and structures at risk. Large cysts may weaken the jaw to the point where pathological fracture becomes a concern.

Benign Tumours

Benign tumours are non-cancerous growths that frequently require surgical management because of their size, anatomical location or tendency to recur:

- **Ameloblastomas** — The most clinically significant benign odontogenic tumour. Ameloblastomas grow slowly but are locally aggressive, infiltrating surrounding bone. They have a notable tendency to recur if not completely removed, and management may require segmental jaw resection with immediate reconstruction for larger lesions - **Odontomas** — The most common odontogenic tumour, though they are technically classified as hamartomas (developmental malformations) rather than true neoplasms. They appear as disorganised masses of dental tissue and are common in children and adolescents. Compound odontomas contain small tooth-like structures; complex odontomas are amorphous masses of dental tissue - **Fibromas** — Benign fibrous growths that can develop on the gums, cheeks, tongue or palate. They are usually the result of chronic irritation and are treated with simple surgical excision - **Giant cell lesions** — Central giant cell granulomas are benign but sometimes aggressive lesions of the jaw. They can cause significant bone destruction and displacement of teeth - **Haemangiomas and vascular malformations** — Blood vessel abnormalities within the oral tissues that may require surgical management or, in some cases, interventional radiology

Oral Cancer

Oral cancers, of which squamous cell carcinoma is the most common, also include salivary gland malignancies, mucosal melanoma, lymphomas and other tumour types. Common risk factors include tobacco use, excessive alcohol consumption, human papillomavirus (HPV) infection, and chronic sun exposure (for lip cancers).

Early detection matters significantly: the five-year survival rate for oral cancer caught at an early stage is substantially higher than for late-stage diagnoses, which is why timely assessment is worth taking seriously. Warning signs include persistent mouth ulcers, unexplained lumps, red or white patches, difficulty swallowing, and unexplained numbness.

Pre-Cancerous Conditions

Pre-cancerous conditions require careful monitoring and, in many cases, biopsy to determine whether malignant transformation is occurring:

- **Oral leukoplakia** — White patches on the oral mucosa that cannot be rubbed off and cannot be attributed to another identifiable cause. The rate of malignant transformation varies but warrants ongoing surveillance - **Erythroplakia** — Red patches on the oral mucosa that carry a higher risk of malignant transformation than leukoplakia. Any red mucosal patch that persists beyond two weeks should be assessed - **Oral submucous fibrosis** — A progressive condition associated with betel nut (areca nut) use, characterised by stiffening of the oral mucosa and progressive limitation of mouth opening - **Oral lichen planus** — While most forms are benign, the erosive variant carries a small but measurable risk of malignant change and requires long-term monitoring

Biopsy Types and What to Expect

Biopsy is the definitive method for establishing a histological diagnosis of any oral lesion. Understanding the different types helps patients prepare for the procedure:

Incisional Biopsy

A small representative sample is taken from part of the lesion for laboratory analysis. This is used when the lesion is large and complete removal would be premature before a diagnosis is established. The sample is typically taken from the most suspicious-looking area — often the margin between normal and abnormal tissue.

The procedure is performed under local anaesthetic. The area is numbed, a small section of tissue (usually a few millimetres in diameter) is removed with a scalpel, and one or two stitches close the site. Discomfort is mild and resolves within a few days.

Excisional Biopsy

The entire lesion is removed in one piece, serving both diagnostic and therapeutic purposes. Excisional biopsy is appropriate for smaller lesions where complete removal is straightforward and where the clinical suspicion for malignancy is low.

The procedure is similar to incisional biopsy but involves removing the entire lesion with a small margin of normal surrounding tissue. Stitches close the site, and the specimen is sent for pathological analysis.

Brush Biopsy (Oral Cytology)

A specialised brush is used to collect surface cells from a suspicious mucosal area. The collected cells are placed on a slide or in a liquid medium and sent for cytological analysis. This technique is non-invasive and painless, making it useful as a screening tool, though a positive or suspicious result typically requires confirmation with a formal incisional or excisional biopsy.

Fine Needle Aspiration (FNA)

A thin needle is inserted into a lump or swelling (often in the neck or salivary glands) to extract cells for analysis. FNA is particularly useful for investigating lymph node enlargement and salivary gland masses. The procedure is quick, minimally invasive, and performed under local anaesthetic or without anaesthetic for superficial lesions.

What Happens to the Tissue Sample?

After collection, the tissue sample is sent to a specialist oral pathology laboratory, where it is:

1. ****Fixed**** in formalin to preserve the tissue structure
2. ****Processed**** — embedded in paraffin wax and cut into ultra-thin sections
3. ****Stained**** with haematoxylin and eosin (H&E;) and potentially additional special stains or immunohistochemical markers
4. ****Examined**** under the microscope by a specialist pathologist
5. ****Reported**** — a detailed pathology report describing the histological findings and the diagnosis is sent to your surgeon

Results are typically available within one to two weeks. Your surgeon will walk you through the findings and outline the most appropriate management options.

Surgical Treatment

Treatment is determined by the confirmed diagnosis and your individual clinical circumstances.

For Cysts

****Enucleation**** — complete surgical removal of the cyst and its lining — is the standard approach for most jaw cysts. It's performed under local anaesthesia with sedation, or under general anaesthesia for larger lesions.

****Marsupialisation**** creates a window in the cyst wall to allow gradual decompression and shrinkage before definitive removal. This staged approach suits very large cysts where immediate excision would risk significant loss of jawbone or damage to adjacent teeth and nerves.

****Bone grafting**** may be needed after removing larger cysts to restore jaw volume and structural integrity. Grafting material may come from elsewhere in the patient's body, from processed bone bank material, or from synthetic bone substitutes.

For Benign Tumours

Surgical excision with appropriate margins is tailored to reduce recurrence risk. The extent of surgery depends on the tumour type — ameloblastomas, for example, may require wider margins or segmental resection due to their infiltrative nature, while fibromas can be simply excised.

Any resulting defect is reconstructed using bone grafts, soft tissue flaps or prosthetic materials as required. Structured long-term follow-up is particularly important for lesions with a higher recurrence risk.

For Oral Cancers

Treatment typically involves:

- Surgical excision of the tumour with clear histological margins
- Neck dissection (removal of regional lymph nodes) where spread has occurred or is considered likely
- Reconstruction of the surgical defect — which may involve transferring vascularised tissue from elsewhere in the body (free flap reconstruction)
- Coordination with oncology colleagues for adjuvant radiotherapy or chemotherapy where indicated
- Rehabilitation planning covering prosthetic reconstruction and speech therapy where clinically relevant

When to Worry About Mouth Sores

Most mouth sores — aphthous ulcers (canker sores), bite injuries, burns from hot food — heal within one to two weeks and are nothing to worry about. However, seek assessment if:

- A mouth ulcer or sore has been present for ****more than two to three weeks**** without healing
- A lesion is ****painless**** — paradoxically, painless sores can be more concerning than painful ones
- You notice a ****lump or thickening**** in the cheek, tongue, floor of the mouth or gum
- There are ****unexplained white, red or speckled patches**** on the oral mucosa
- You experience ****numbness or tingling**** in the lip, tongue or face that has no obvious cause
- You have ****difficulty swallowing or chewing**** that has developed gradually
- You notice a ****persistent sore throat or hoarseness**** not attributable to a cold or infection
- There is ****unexplained bleeding**** from the mouth

The key message is this: if something in your mouth doesn't look or feel right and hasn't resolved within two to three weeks, have it assessed. Early detection of oral pathology — particularly pre-cancerous and cancerous conditions — dramatically improves outcomes.

Recovery and Aftercare

Recovery varies considerably depending on what was done.

- ****Minor biopsies and small cyst removals**** typically resolve within one to two weeks, with mild postoperative discomfort managed effectively with standard analgesia
- ****Major cyst enucleation or tumour removal**** may require several weeks, with swelling, bruising and temporary dietary modification to be expected
- ****Cancer surgery with reconstruction**** involves a hospital admission and a structured, multidisciplinary rehabilitation programme

Follow-up imaging monitors healing and checks for any evidence of recurrence. Regular long-term review is essential — particularly for conditions prone to recur, such as keratocystic odontogenic tumours, and for patients who have undergone treatment for oral cancer.

Why See an Oral and Maxillofacial Surgeon?

Oral and maxillofacial surgeons are well placed to manage the full range of oral pathological conditions for several reasons:

- Their dual training in dentistry and medicine — 15 to 17 years of continuous study — gives them the breadth of knowledge to diagnose and treat conditions that span both disciplines - They hold training in surgical oncology of the head and neck, covering tumour resection and complex reconstruction - They can perform procedures under local anaesthesia, conscious sedation or general anaesthesia depending on the complexity of each case - They have the surgical skills to reconstruct defects arising from tumour or cyst removal, including bone grafting and soft tissue repair - They work within a coordinated care model alongside oncologists, radiologists, specialist oral pathologists and allied health professionals

Our Specialists

****A/Prof Patrishia Bordbar**** is a specialist oral and craniomaxillofacial surgeon with dual qualifications in dentistry (BDSc) and medicine (MBBS Hons) from the University of Melbourne. She is a Clinical Associate Professor at the University of Melbourne and Past President of ANZAOMS, with extensive experience in the diagnosis and surgical management of oral and maxillofacial pathology, including complex reconstruction.

****Dr Ricky Kumar**** is a specialist oral and maxillofacial surgeon with dual qualifications in medicine and dentistry, and fellowship experience from the Royal Children's Hospital Melbourne and Oxford University Hospitals. He has particular expertise in paediatric maxillofacial pathology.

Related Treatments

- Bone Grafting — jaw reconstruction following cyst or tumour removal - Facial Trauma Reconstruction — related reconstructive surgical techniques - Wisdom Teeth Removal — cysts can develop around impacted wisdom teeth

****Concerned about a lump, sore or unusual change in your mouth?**** Contact Collins Street Specialist Centre on (03) 9654 5705 to arrange an assessment with one of our specialist oral and maxillofacial surgeons. Early diagnosis makes a meaningful difference in outcomes.

All oral pathology diagnosis and surgery at Collins Street Specialist Centre is performed by Dental Board-registered specialist oral and maxillofacial surgeons. To verify a practitioner's specialist registration, visit the AHPRA Register of Practitioners.