

Department of Oral Pathology & Microbiology

FDS, RUAS

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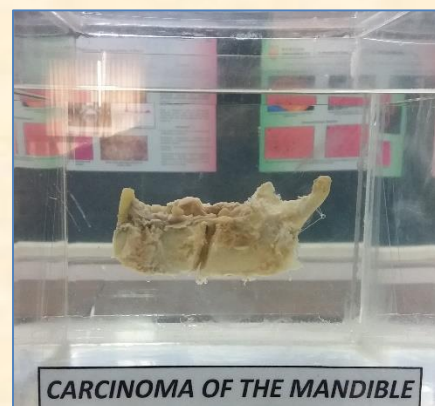
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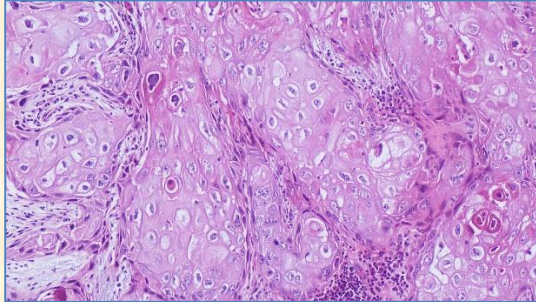
Oral Pathology Museum:

Museum technologies provide a wide array of choice of museums to those who wish to exploit technology to attract, excite and ensure an unrivalled visitor experience, as well as capture and sustain share of mind and heart. Museum being a combination of both art and science requires skilled workmanship, meticulous planning and execution to exhibit a specimen to its optimal elegance due to its relatively smaller size and fragile nature.



SERVICES OFFERED:

- **Histopathology**

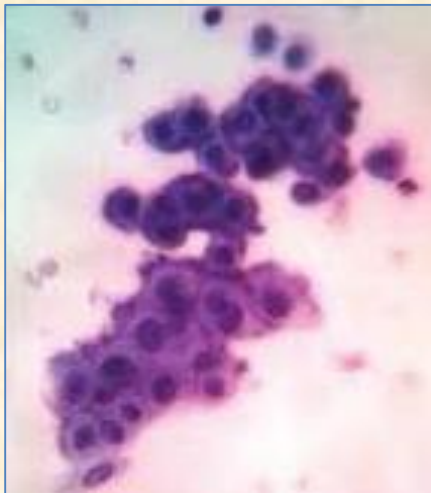


Histology and Histopathology are frequently deliberated and explained together. In fact, the notion of histopathology is inseparable from that of histology. Basic knowledge is important in understanding of normal histology and histopathological interpretation for the diagnosis of lesions.

We provide the following histopathological facilities in our department:

- Complete provisions for routine histopathological tissue processing, staining and interpretation. Consultation and advice for all histology and pathology enquiries

- **Cytology**



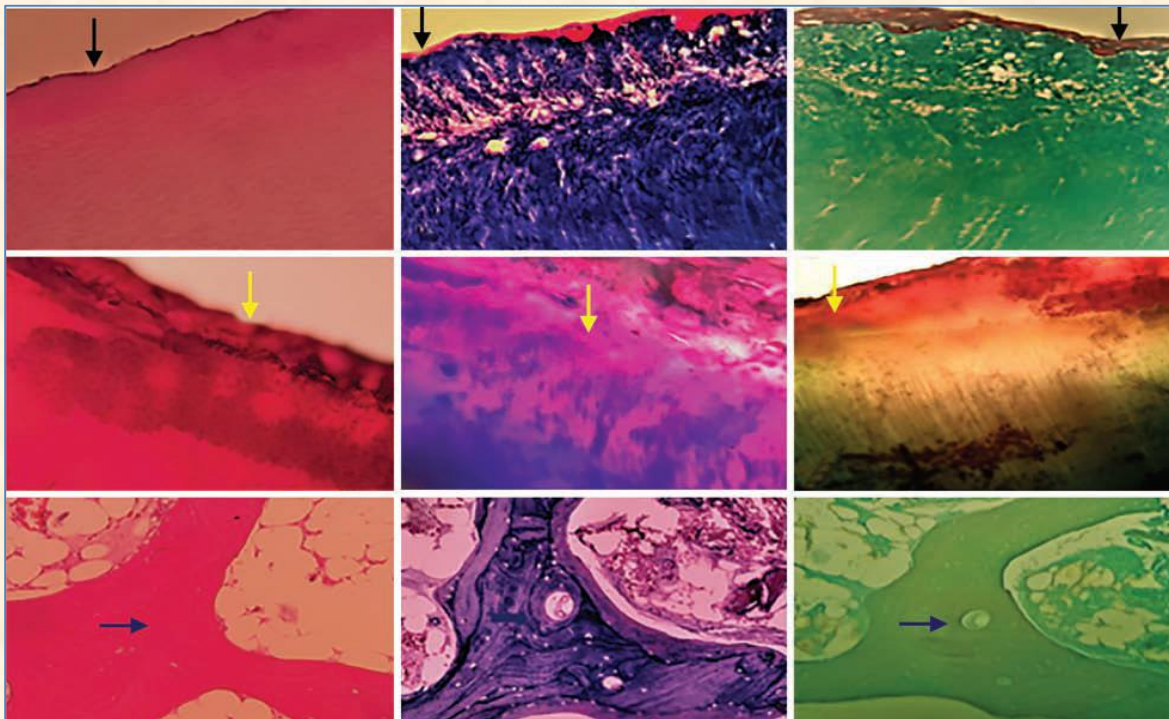
Exfoliative cytology and Fine needle aspiration cytology deals with the microscopic study of cells shed or obtained from the oral mucosa and body fluids for diagnostic purposes. It is a simple, non-aggressive technique that is well accepted by the patient, and is therefore an attractive option for the screening and early diagnosis of infections, benign and malignant lesions.

- **Hematology**



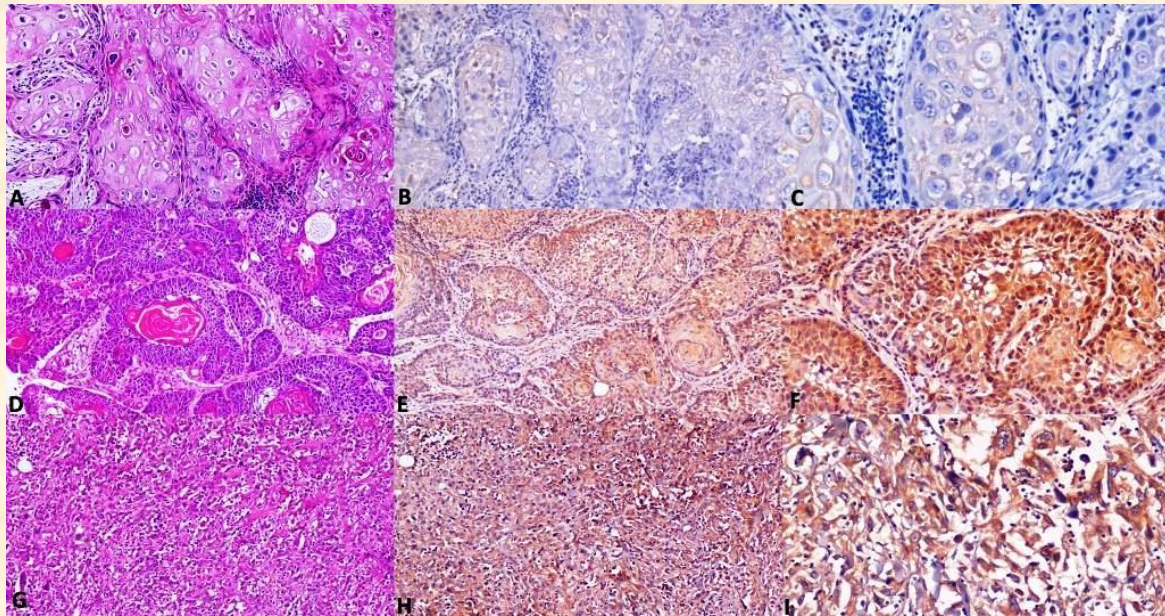
Hematology is the study of blood and blood-forming organs, including the diagnosis, treatment, and prevention of diseases of the blood, bone marrow, and immunologic, hemostatic, and vascular systems. Hematologic analysis is often used prior to invasive dental procedures for the diagnosis and treatment of blood disorders. The services offered include, Fasting/Random/Postprandial blood sugar, Hemoglobin estimation, Differential WBC count, ESR, Bleeding/Clotting time, Blood grouping and PRF preparation.

- **Special Staining**



Special stains use a variety of dyes and techniques to stain particular tissues, structures or pathogens to assist pathologists with tissue-based diagnosis. Some of the routinely used special stains for the diagnosis of oral pathologic lesions are Periodic Acid Schiff, Masson's Trichome, Van Gieson and Mucicarmine stains.

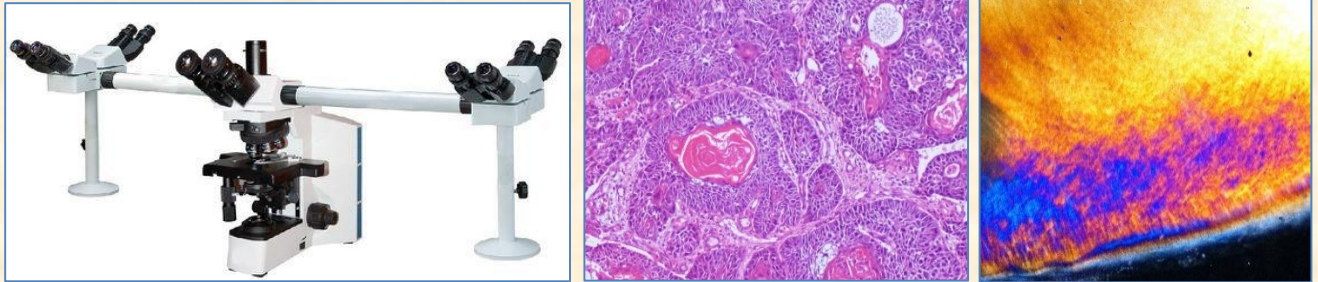
- **Immunohistochemistry**



Immunohistochemistry is the localization of antigens in tissue sections by the use of labelled antibody as specific reagents through antigen-antibody reactions and subsequent visualization using a chemical reaction to locate the antigen.

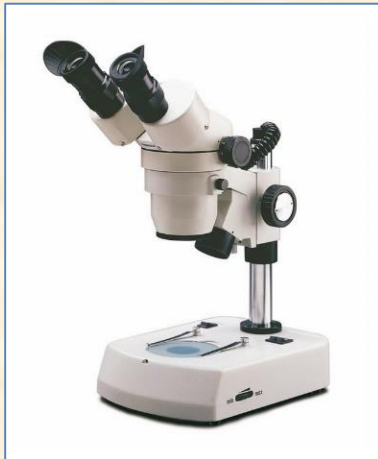
COLLABORTIVE RESEARCH:

- **Penta-head Research Microscope (Brightfield, Polarizing, Darkfield and Phase contrast attachments)**



Scientific microscopes or research microscopes are designed for applications in the field of research

- **Stereomicroscope**



The stereo, stereoscopic or dissecting microscope is an optical microscope variant designed for low magnification observation of a sample, typically using light reflected from the surface of an object rather than transmitted through it

- **High quality Photomicrography with Image Analysis Software**



Image analysis is the extraction of meaningful information from digital images by means of image processing techniques. It can be used to process, analyze and present images obtained from a microscope which has wide applications in cancer research, drug testing, etc. It is a quantitative structural technique that allows objective information to be acquired from sections of cells and tissues, and the method possesses the potential to discriminate between the lesions when the diagnosis is ambiguous.

- **Immunohistochemistry Laboratory**



The Immunohistochemistry laboratory offers a variety of immunohistochemical services in the field of surgical pathology and research projects

CORE AREAS OF RESEARCH:

The Department of Oral Pathology focusses on Translational Research – From Bed to Bench side

emphasizing Molecular Research and Genomic analysis.

Artificial Intelligence and Machine Learning in Oral Cancer on histopathologic slides

1. Sponsored Research

- Biomarkers in Oral cancer and pre-cancer
- Biologic Behaviour of Oral Cancer and pre-cancer
- Photomicrography and Image analysis/processing
- Publications in Impact factor, PubMed and Scopus indexed Journals ([Link](#))

2. Postgraduate Research

- Oral cancer biomarker studies
- Molecular studies in Oral Cancer Tissues
- Histotechniques in Oral Cancer & Pre-cancer
- Clinicopathologic Correlation in Oral Cancer
- Survival Analysis in Oral Cancer
- Analysis of Metastasis in Oral Cancer
- Biofriendly laboratory substitutes
- Biologic behaviour of Odontogenic Tumors and Cysts
- Differential Diagnosis of Salivary gland tumors, developmental disturbances, mesenchymal tumors, skin diseases, bone diseases and infections

3. Undergraduate Research

- Analysis of FNAC smears
- Cytological analysis in Oral Cancer
- Chair side smear preparation for fungal infections
- Forensic Odontology
- Assessment of Mitotic figures in Cancer
- Research involving ground section and Decalcified sections
- Special staining to arrive at final diagnosis
- Histotechniques to determine prognosis
- Usage of Specialized Microscopy for pilot studies
- Analysis of Hematological Investigations