# Reporting of oral pathology biopsy specimens: Steps to follow and points to keep in mind

Oral and maxillofacial pathology is a branch of dentistry that involves theoretical knowledge, teaching acumen, laboratory expertise, microscopic analysis, and signing out reports with a final diagnosis. There is no scope of "knowing less" of any of the above as patient care and accurate treatment planning depend upon the signed-out report of an oral pathologist for all received oral and maxillofacial pathology specimens. The importance of history-taking to rule out underlying systemic condition while diagnosing oral disorders needs to be stressed upon. A busy clinician or at times students and residents of dental institutes may not fill out the complete patient details in the requisition form and miss recording vital clinical details of the patient. Since the onus of accurate diagnosis and subsequent treatment planning depends upon the accuracy of the report of the oral pathologist, physical examination and detailed history-taking for clinical correlation should be done whenever possible instead of only relying on the patient details in the requisition form. Previous medical reports if any, radiographs, and laboratory investigation reports are useful for correlation and reaching a conclusive diagnosis of the lesion or condition of the patient under consideration.[1] Biopsies received in oral pathology laboratory mostly include cases requiring a diagnosis of pathologic lesions, determining whether neoplastic or non-neoplastic lesions, for therapeutic assessment, grading of tumours, diagnosing metastatic lesions, and evaluation of recurrence.[2] Certain guidelines are recommended to be followed when a biopsy specimen is received in the laboratory.

1. Note the date of biopsy, age, sex, and any relevant history including history of recurrence.
2. In cases of large-tissue specimens, divide the tissue and keep in formalin for adequate fixation till centre or depth of the lesion is fixed.
3. Accessioning for multiple specimens from the same patient is to be done by sub-numbering as region of biopsy will influence the biopsy report.[3]
4. In case of resection specimens or large excisional biopsies, the specimen should be held in anatomical position and sampling done from all the margins to look for any residual lesional tissue. All such samples are to be labelled appropriately and mentioned in the descriptive part of the biopsy report.
5. Take photographs of the specimen against scale to record the size of the received specimen.
6. Gross description should include size, shape, colour, consistency, surface texture if any, contents (in case of cystic lesions), and any other specific or relevant detail if present.

## WRITING THE REPORT

Writing a good histopathology report is an art. We should be mindful that unnecessary details only clutter the report and are not helpful for the surgeon. The report should be crisp and to the point with a conclusion that would aid the surgeon in deciding the line of treatment. Guiding factors for slide reporting are clinical history and radiological findings if any. It is advisable to start viewing the slide under scanner or 4× and gradually focus on the specific abnormalities under 40×. A good grasp on artifacts could save us from possible embarrassment later. So, scan the tissue and rule out any fixation, processing, cutting, and staining artifacts. Keeping the clinical details and the clinical differential diagnosis in mind will aid in ascertaining a clearer histological correlation. Clinical diagnosis, however, should never create a bias in the histopathological diagnosis. Certain rules can be followed while looking into the microscope:

1. Start from one end of the section to the other. One can even start scanning the slide from superficial epithelium and work downwards towards deeper structures.

2. Note the abnormalities under 10× and write down the findings. Use 40× to assess cellular details and irregularities.
3. Do not hesitate to comment upon inadequacies of the biopsy specimen. For instance, in exophytic lesions, insufficient depth will not shed light on invasions in connective tissue structures.
4. The report should be well organized; for example, in cystic lesions all the components require a comment. So, report the findings of lumen, lining epithelium, and capsule of the cyst.[3]
5. Organized thoughts and observations can help produce well-organized reports. Instances of haphazard reporting include jumping from one description to the other without completion, like a partial description of epithelium followed by some detail on connective tissue structure and coming back to the epithelium abruptly. Surgeons most often read such reports partially and look for the inference only.
6. Surgical excision reports should include all the margins with mention on the type, grade, depth, and presence or absence of perineural or vascular invasions.[4]
7. Do not hesitate to discuss with the operating surgeon to clear doubts regarding clinical and intraoperative findings.
8. Do not have ambiguity in the report. Define it as benign or malignant and always take second opinion from a senior colleague who can be mentioned in the notes section.
9. Mention the major observations first followed by minor details. Factors leading to the conclusion of the report should always be mentioned while other inconclusive findings may be left out to make it crisp.
10. "Inference", or "suggestive of", or "indicative of", or possibility of, are the phrases that can be used in the conclusion of the report to indicate final diagnosis. It is advisable to use notes or remarks at the bottom of the report for any further communication or advise.

Reporting can be passive or defensive (done without clinical correlation or discussion) or active (with relevant clinical correlation[4] Furthermore, reports can be synoptic (short pointwise) or narrative (descriptive). The College of American Pathologists (CAP) recommends accurate and point-wise reports where all essential observations are addressed with no scope for description but easy for data extraction by surgeons. For clinicians, synoptic reporting provides a checklist that ensures completeness of reported data elements.[5] In such synoptic report description of architectural patterns and cellular details cannot be provided. However, the oral pathologists predominantly continue to write descriptive reports that require in-depth knowledge of the subject and are useful for referring in the future. Descriptive reports should be in three parts: gross description, microscopic description, and diagnosis. Footnote is added for remarks, advise, follow-up, second opinion, etc., While reporting on a soft tissue mass, pertinent questions need to be asked like what is it, has it been removed completely, and how will it behave? The nature of the lesion (tumour or tumour-like or pseudosarcomatous) needs to be addressed for subtyping and histological assessment.[6] Whether completely excised or not is to be confirmed by looking at the margins and in cases of sarcomas, behaviour (grading) and outcome (staging)[6] should be mentioned. Similarly, while reporting Lymph node biopsies, the recommendations of the Association of Directors of Anatomic and Surgical Pathology (ADASP) may be followed, with information on the

a) Total number of lymph nodes examined microscopically
b) Number of lymph nodes positive for metastasis with mention of levels (to be marked during grossing with help of the operating surgeon)
c) Extracapsular extension
d) Extra-nodal vessels infiltration in case of sentinel lymph node biopsy[7]

## CONCLUSION

To conclude, a histopathology report can be adjudged complete when it ensures that all relevant observations are commented upon and well organized. Patient details, gross appearance, microscopic features, and a conclusive diagnosis form the parts of a good report. It never harms to take second opinion from an experienced pathologist as our accurate diagnosis not only guides the clinician/surgeon in the treatment planning but also saves the patient from repeated surgeries or unnecessary extensive interventions that affect the outcome and lifestyle of the patient. Signing out a pathology report comes with a certain sense of responsibility which all practicing oral pathologists are required to bear in mind.

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