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"Prasadam" Approach in Pathology Samples– Are we aware of the Dangerous Implications?

Abstract:
Grossing acts as the first step in the diagnostic journey provided a complete specimen is provided to the pathologist. It is the connecting link between the patient and the pathologist. However, sometimes the biopsy received by an oral pathologist is insufficient or inappropriate or from an unrepresentative site, which can lead to an erroneous diagnosis, leading to delay or at times wrong diagnosis. This article is to highlight such errors.

Key-words: Grossing errors, Histopathological Diagnosis, Pathological specimen.

Introduction:

The purpose of this article is not to essentially report an exclusive case with extraordinary features; but it is to draw your attention towards the grossing of biopsy specimens leading up to the diagnosis of a lesion. We would like to highlight the perilous mistakes often made either due to common routine practices or due to sheer ignorance.

Being a pathologist, one of our primary duties involves grossing a biopsy specimen which is an art we all pride ourselves upon. But I would like to call out the occasional ignorant attitudes and work ethics practiced by many experts on a daily basis. This incomprehension often leads to inefficient and incorrect reporting of specimens. Once an exception but rapidly becoming a repetition, especially observed in Dental schools is the unfortunate division of bio-specimens to be distributed to different departments for examination. Whilst general pathologists usually receive a larger size portion of the tissue samples, only "prasadam" i.e., a comparatively smaller portion is received by an oral pathologist. Although confounding, from our point of view this could be due to better laboratory and diagnostic facilities. The larger magnitude of samples received and wide scope of histological tissues examined may potentially equip the general pathology lab to be better designed. Another factor could be a wider knowledge base of a general pathologist because they encounter a multitude of tissues and pathologies from the entire body. Not to be ignored, another common cause is the mandate of the patient, who wants to take their sample to the largest most publicized laboratories in the quest of the best diagnosticians. To highlight the problems and challenges it creates, we would like to bring forth an example case.

Case:

A 35 years old male patient reported to the outpatient department with a chief symptom of swelling in the lower left back region of jaw of one month duration. He had a habit of

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chewing two packets of tobacco per day for two years. Intra-oral inspection revealed a greyish-white lesion with areas of ulceration measuring 10 X 15 mm in size. There was single ovoid firm swelling present in left vestibule extending from 34 to 37. There was bleeding on palpation from that area with same side palpable submandibular lymph nodes. Radiographic examination revealed bone loss from same area. The provisional diagnosis of oral squamous cell carcinoma was made and an incisional biopsy was performed under local anesthesia to confirm the diagnosis.

On patient party persistence, the biopsy was divided into two pieces. First piece was sent in for routine processing and sectioning followed by hematoxylin and eosin staining. Second chunk was returned to the patient for second opinion. The specimen received by the oral pathologist had a few squamous cell nests and keratin pearls [Figure-1]. Due to inadequate depth of the received tissue specimen, a specific grading of the sample was not provided and a diagnosis of oral squamous cell carcinoma was reported.

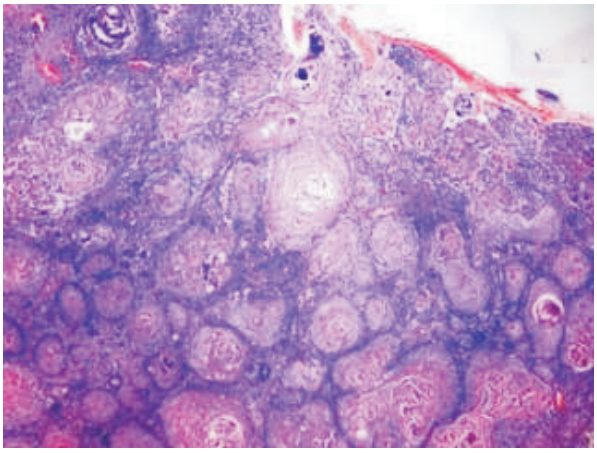

Figure 1: Photomicrograph of H & E-stained section showing abundant keratin pearls formation suggesting of well-differentiated OSCC

The patient took other piece of same biopsy to a general pathology laboratory for a second opinion and the same diagnosis was received at that laboratory as well. Besides keratin pearls in their report, there was evidence of necrosis which raised query in mind as it is known an alarming sign especially in a malignancy. Thus, we recommended the patient to bring slides for re-evaluation by the oral pathologist. To our surprise, besides the large area of necrosis, there was evidence of typical basaloid features i.e., hyperchromatic, and palisaded nuclei [Figure 2 and 3]. The case was actually an oral basaloid squamous cell carcinoma (OBSCC) of gingiva.

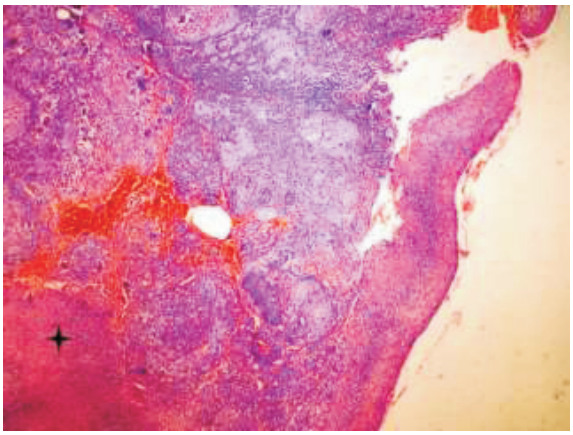

Figure 2: Photomicrograph of H & E-stained section showing areas of necrosis (black star) along with islands of tumor epithelial cells.

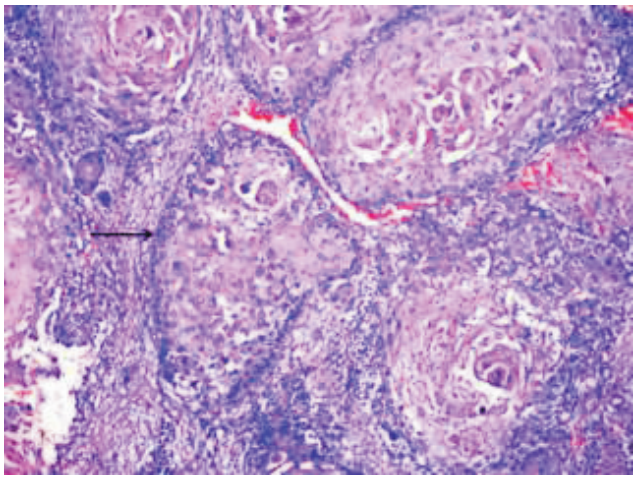

Figure 3: Photomicrograph of H & E-stained section showing areas of basaloid differentiation with black arrow indicating hyperchromasia and palisading of basal nuclei.

Conclusion:

Undoubtedly, OSCC is known for its heterogeneity and there can be varied findings in different fields of the same biopsy specimen. OBSCC is rare variant of OSCC which is known to be more aggressive in nature and has a worse prognosis than OSCC. Its diagnosis still depends on hematoxylin and eosin-stained slides by recognizing the defined histological criteria and histopathological evaluation. Hence, awareness of BSCC's clinical and pathological characteristics is an essential for its early diagnosis and treatment. (1) The aim of this communication is to enlighten the readers of potential difficulties of a histological diagnosis if the size of specimen is small and the possible obstacles to an accurate diagnosis were emphasized. (2)

Similar to a radiograph or prescription, where the document or the film is shared in its entirety, a microscopic slide should also be shared when second opinions are sought, instead of dividing the specimen itself.

As oral pathologists, we acknowledge and appreciate the support we receive from our general pathology colleagues whilst diagnosing complex cases. Rather, there is a need to design a better approach. The need to preserve every inch of the tissue specimen and to be examined by any pathologist (oral or general) in its wholesome form cannot be stressed enough. Every patient has the right to seek a second or even third opinion, but compromising the integrity of the biological tissue samples should be condemned, as this could lead to multiple diagnoses, and potentially lead to fatal outcomes. As mentioned by Roopa R.S. et al emphasized the importance to work in coherent manner. It's not only between the clinicians and pathologist about also among general and oral pathologist to reach to the apt microscopic diagnosis. As Thomas B Macaulay has rightly said, "Half knowledge is worse than ignorance". For that reason, a sound knowledge of various anticipated pitfalls with the solutions will bridge the gap at every level and hence never putting the patients at stake. (3)

We highly recommend reinforcement of some of the basic yet best practices to be followed in pathology. Divide and rule is an inappropriate methodology and we suggest that the general pathologist and the oral pathologist should work synchronously as a team. Institutes with separate general and oral pathology departments should discuss exceptional cases and collaboratively work on a mutually agreed diagnosis, rather than resorting to division of samples and individual opinions. We would also like to highlight the importance of patient education with the implications of division of sample. We would also like to reiterate the incorporation of a head and neck pathologist for oral lesions examination and diagnosis. Oral pathology is a recognized stand-alone entity, with specialized training and trainees available which further corroborates the recognition of an oral pathologist in a general hospital setting as well.

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