



Doubts and difficulties for a pathology resident in approaching complex head and neck samples

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OBJECTIVES

In the daily routine of a pathology laboratory the microscopic evaluation of the histological sections is considered the main activity of a pathologist. As the clinical and radiological assessment of the patient are becoming more accurate, at the same time the proper macroscopic evaluation and reduction of surgical specimens should be seen as the basic core for the correct diagnosis. The concordance between all the information of the disease is critical for the outcome, especially for the head and neck district (1). Searching the current literature only few articles have been written about the macroscopic examination of head and neck specimens and the milestone for the pathologist is the paper of P.J. Slootweg of 2005 (2). With this premises, we have tried to bring together all the doubts and difficulties that pathology residents face during the first approach of these complex specimens.

METHODS

Due to the anatomical complexity of the head and neck district and the lack of updated guide lines, the untrained pathologist can feel disoriented while managing these specimens. Relying on the countless cases from maxillofacial surgery of “Ospedale San Paolo”, Milano, since 1994, we have identified the crucial steps to take from the delivery to the inclusion in paraffin embedded tissue blocks.

GRAPHS & TABLES

Table 1

Required and fundamental steps for gross examination of complex head and neck specimens
Checking the information given by the surgeon and the specimen delivered
Correct orientation
Identification and description of each anatomical part
Detailed report of the lesion, focusing especially on the site and the extension
Pictures of different angles the specimen
Making an approximate sketch of the critical spots for the diagnosis
Painting the resection margins using different colours or making an incision to mark a specific side
Reducing the specimen following the conventional anatomical planes
Using macrosections for the complex anatomical site (e.g. maxillectomy)
Keeping the connection between the different tissue (mucosae, soft tissues and bones)
Taking picture of the most significant macroscopic sections
If the specimen needs decalcification, cutting the bone in smaller parts is mandatory to reduce the exposure time to the decalcifying solution
Monitoring the technician during the inclusion process of complex cases

RESULTS

In our experience, following the steps in Table 1, we have found that the main issue for the pathology residents was the correct orientation and the identification of the different anatomical part of the specimens. We think that these problems occur as a result of the limited amount of specimens encountered in the daily routine, and the several anatomical structures located in a small specimen each of them with a specific name.

The other issue that we have noticed is the management of the decalcification process: the longer is the immersion inside the solution, the poorer is the microscopic quality of the slides.

In our point of view, the last crucial step is to guide the pathology laboratory technician during the inclusion phase, evaluating the specimen features after the tissue processing and establish the best way to make the paraffin embedded tissue blocks.

REFERENCES

1. Bullock MJ. Current Challenges in the Staging of Oral Cancer. Head Neck Pathol. 2019 Sep;13(3):440-448
2. Slootweg PJ. Complex head and neck specimens and neck dissection. How to handle them. J Clin Pathol. 2005 Mar;58(3):243-8.

CONCLUSION

The gross management of head and neck specimens requires a special caution because one must be able to transfer the three-dimensional information of a complex specimen in to bi-dimensional hematoxylin and eosin slides without losing all the data that are essential for the diagnose based on the guide lines.

In conclusion, we believe that an adequate pathology residents' training is a prerequisite for handling the head and neck specimens. The expert pathologist should give them the fundamental basis for being independent in managing the easiest and the challenging cases throughout the whole process.