Comparison between cavum and lateral cephalometric radiographs for the evaluation of the nasopharynx and adenoids by otorhinolaryngologists

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Abstract

Introduction: The lateral cephalometric, as well as the cavum radiograph, allow the evaluation of the nasopharyngeal airway (NAW). Otorhinolaryngologists routinely use the cavum radiograph, even when the patient already has a lateral cephalometric headfilm. **Objectives:** The aim of this study was to (a) acknowledge which exams otorhinolaryngologists use for the evaluation and measurement of the NAW; (b) evaluate if the otorhinolaryngologists are acquainted to the cephalometric method; (c) compare both radiographs to see which one is preferred to visualize the NAW and adenoids and (d) correlate the visual analysis to the measuring method of Schulhof. **Methods:** For this purpose, cephalometric and cavum radiographs of 15 mouth-breathing children were taken on the same day. These radiographs were masked leaving only the NAW and the adenoids visible, and were blindly presented to 12 otorhinolaryngologists. They received the radiographs together with a questionnaire asking about their familiarity with the lateral cephalometric radiograph, which exams are used for NAW and adenoid evaluation and if they use any method for measuring the NAW obstruction level. They were also asked to visually classify the NAW and the adenoids according to their sizes into small, medium and large. **Results:** The results demonstrated that all otorhinolaryngologists in the sample use the cavum radiograph. Only one uses the cephalometric radiograph and two are familiar with this technique. The cephalometric radiograph was preferred by 49.4% of the otorhinolaryngologists, the cavum by 22.8%, and 27.8% did not see any difference between both methods. There was low correlation between the visual method and the Schulhof measuring method.

Keywords: Orthodontics. Otorhinolaryngology. Cavum radiograph. Cephalometric radiograph.

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Editor's summary

The radiographic evaluation, besides being the most used method in the medical literature to evaluate hypertrophy of adenoids, is also the most used method to plan an orthodontic treatment. But the doctor normally uses the cavum radiograph and the orthodontist uses the lateral cephalometric radiograph. Both are lateral radiographs of the cranium but the cephalometric radiograph is standardized by stabilizing the patient's head with a cephalostat. In the cavum radiograph, the lack of the cephalostat during the exam allows the patient to alter head position, which requires more attention during its acquisition.

The results of the present study showed that the otorhinolaryngologists have little knowledge of the cephalometric technique, since only two of the twelve doctors interviewed knew this radiographic method. It's important to say that when both techniques were compared, most doctors picked as best view of the nasopharyngeal airway and adenoids the cephalometric radiograph (49.4% and 48.9%) and one forth of the otorhinolaryngologists didn't see any difference between both techniques for the two analyzed structures (27.8% and 27.2%).

This study also evaluated if the visual method used by the otorhinolaryngologists in the diagnoses of adenoid hypertrophy was compatible with the results found by measuring those anatomical structures with the Schulhof's method (1978). A low correlation between those two methods was found.

Questions to the authors

1) What evaluation techniques would result in a higher number of diagnoses of nasopharyngeal obstruction, the quantitative evaluation by the method reported or the visual assessment used by otorhinolaryngologists?

There are no differences among the number of possible diagnoses. The difference between the methods is related to the reproducibility of the diagnoses. Using the quantitative analysis increases the chances of several professionals achieving the same diagnosis for a specific case or of a single professional giving the same diagnosis for a case in different periods of time. In the visual analysis the differences among the diagnoses increases.

2) Interdisciplinarity among orthodontists and otorhinolaryngologists could be a benefit to the patient?

Yes. Because both areas could work together for the well being of the patient, discussing the best time for each approach and not making the treatment time longer than it should be.

3) How to enable the interdisciplinarity between these areas?

Maybe elaborating interdisciplinary courses or with mouth breathers treatment centers that included orthodontics as one of the disciplines involved.

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