A Pragmatic Approach to Oral and Maxillofacial Differential Diagnosis: The Clinical Examination Plan

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Abstract

A horizontal study was carried out on 3243 adult patients in a trial to avoid the mis-diagnosis of cases as well as the time consumption brought about by recording unreal abnormalities or expectations told by the patients. The study included a simple questionnaire about the subjective chief complaint followed by its inspection. The chief complaint was also reexamined during the sequence of differential diagnosis. The study revealed that, the chief complaints told by the patients coincided with reality only in 61% of cases, expressed as an expectation in 11%, as a notation about the patient in 5%, and did not coincide with reality in 23% of cases. This brings us to conclude that, taking the case history and performing the physical examination should not be carried out independently in a strict sequence but, rather the chief complaint should be inspected following its subjective recording then the rest of the history is recorded. The chief complaint should be re-examined during the sequence of differential diagnosis. The study has introduced a number of factors that can shape the chief complaints and also a new plan for differential diagnosis with a pragmatic orientation of the examination items.

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Introduction

The reliable diagnostic procedure is the one that gives the same result upon repetition of the same procedure.[1] Appropriate treatment based on cost-effectiveness depends on accurate diagnosis. [2] It has long been noted that a plan for the diagnostic process should pass into three phases respectively, namely the case history, the physical examination and –if indicated- the special investigations. [3,4]

The case history may be obtained in two forms; either as a printed questionnaire or a direct interview. [5, 6] The chief complaint- which represents the main item of the case history is the patient's main trouble which urged him to seek dental treatment. The chief complaint should be recorded, if at all possible, in the patients own words. However, in some cases, instead of the expression in the words of the patient, a notation will be made that the patient was referred from a dentist or a physician for further diagnosis or management. [7]

The chief complaints vary- as for example, pain, swelling or TMJ trouble, so that each of them requires a special approach as a special entity in the patient's interrogation.[8]

The chief complaint is a critical item and it should be always obtained as a positive predictive value (PPV). The PPV is the likelihood that the patent actually has the disease or lesion. [9]

Commonly the chief complaint expressed by the patient is in the form of a symptom describing a physical sign[10] However, there are some personal factors that may play a role in shaping the chief complaint expressed by the patient. This shaping might direct the interrogation to a direction which needs no comprehensive effort in the sequence of differential diagnosis. [11, 12]

The purpose of this study was to examine the relation between the initial chief complain of the patient and the final diagnosis and to present a patient examination and diagnosis protocol that aims to decrease the incidence of misdiagnosis of the cases and to reduce the time consumption which could be

brought about by recording unreal abnormalities or expectations expressed by the patient during history taking. Also, the proper orientation of the chief complaint both subjectively and objectively in an examination plan as a new approach in differential diagnosis.

Material and Methods

A horizontal study including 3243 patients above 15 years of age was carried out in the outpatient clinic. The examination was performed by four oral diagnosis residents with comparable clinical experience.

An already prepared questionnaire was applied in the form of a direct interview by all examiners. It included a detailed personal history including the patient's name, age, sex, occupation, marital status, birth place and address. Dental and health histories were also recorded [12].

Regarding the chief complaint, the questionnaire included tow open-ended questions [13] applied as follows:

"What problem brought you to come to the dental clinic?"

"What seems to be the main trouble?"

The second question was applied only when necessary. However, the direct and laundry list questions were absolutely avoided. After the chief complaint has been expressed by the patient, an inspection of the area of the chief complaint was carried out using a good illumination of light and the proper examination tools. The gross feature was then recorded and the sequence of examination was followed as shown in Fig. 1.

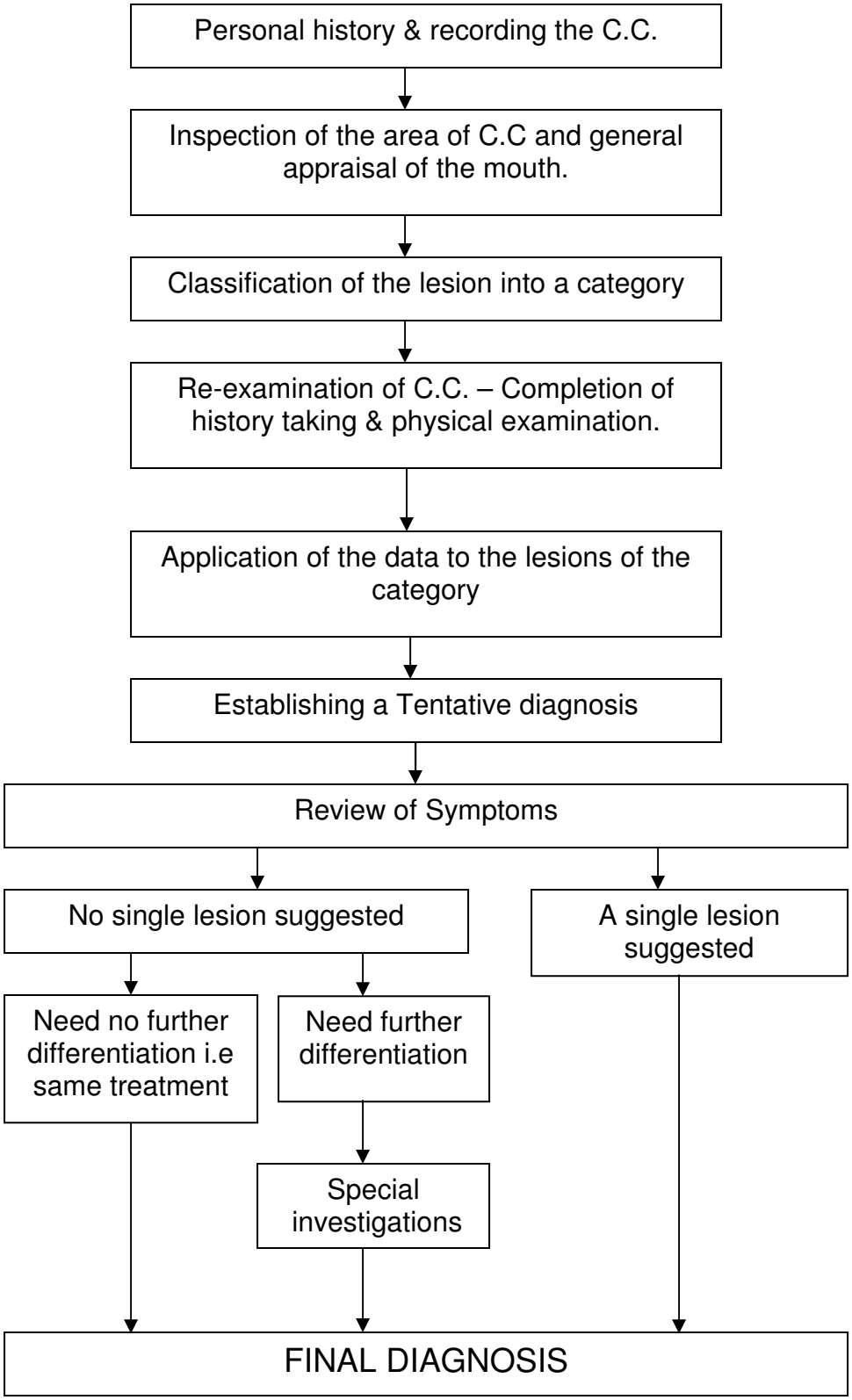


Fig. 1: The Examination Sequence.

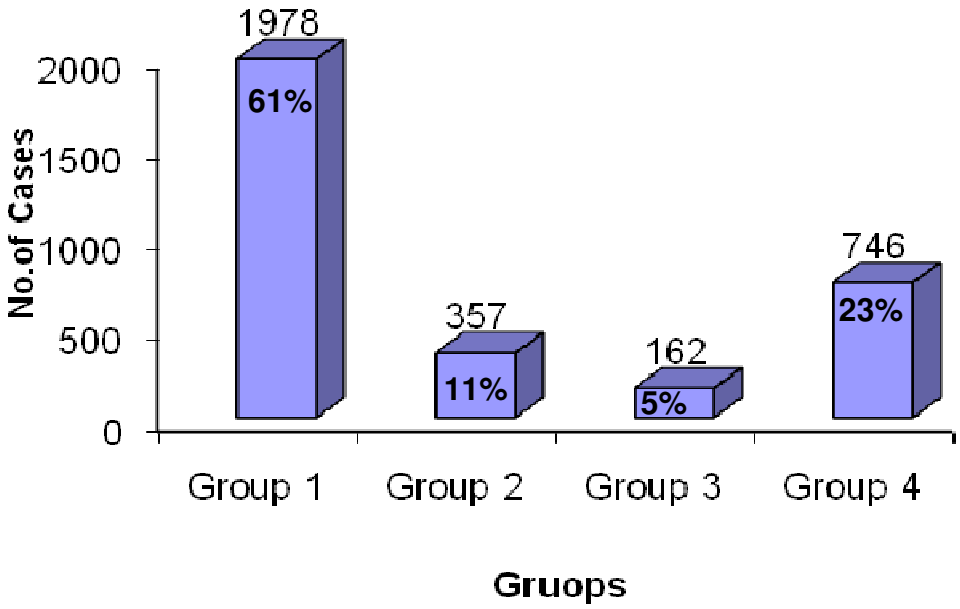
Results:

The results of the present study were presented in table 1 and graph. 1.

Table 1: The coincidence between the subjective chief complaint (C.C) and its objective detection.

Group	Coincidence of the C.C.	No of cases	%
Group 1	The C.C. coincided with reality	1978	61%
Group 2	The C.C. expressed as an expectation	357	11%
Group 3	The C.C. recorded as a notation	162	5%
Group 4	The C.C. did not coincide with reality	746	23%
	Total	3243	100%

Graph. 1 The chief complaints as presented in the four groups.



The coincidence between the subjective chief complaint and the existing lesion occurred in 61% of the cases investigated (group 1). In a considerable number of cases (about 34%) in both groups 2 and 4 the chief complaints either did not coincide with the existing lesion or were expressed as an expectation. The chief complaints recorded as a notation about the patients did not exceed 5% (group 3).

Discussion

The results of this study revealed that a considerably large number of patients expressed their chief complaints in forms which did not represent their real clinical signs.

In order to standardize the personal difference between the examiners14 the study was performed with a, staff or residents with comparable clinical experience in order to avoid the individual variations [15-16.]

The thorough examination of the case histories for all patients [17] revealed that the following factors participated in shaping of the chief complaints expressed by the patients:

1. The patient's past experience.
2. The educated symptoms.
3. The ability of the patient to express himself.
4. Social considerations. [18]
5. The mental attitude of the patients. [19]
6. The economical status of the patients.
7. The patient's age.
8. The patient's memory. [20]
9. The distance from the patient's residence and the dental clinic.
10. The number of children and their ages (only in female patients).
11. The patient's occupation being either in the private or general sector.

It is rational or even necessary to inspect the area of the chief complaints first before taking history or performing any other examination procedure for many reasons:

1. To put the lesion in its correct descriptive category [7] as for example in case of a firm raised swelling. This is because each category of lesions has a specific approach. In order that the examiner can chose the correct approach- during recording the rest of the history- he should be aware of the lesions category before hand. In the meantime, this directs the interrogation to the parts which need more comprehensive effort. i.e. it is the basis for determining the remainder of the history.[12]

2. This procedure is highly beneficial when evaluating emergency complaints as it orients the examiner to the history and physical examination that may be omitted temporarily until relief of the acute symptoms is accomplished.[12]

3. As the chief complaint is the patient's main concern, ignoring or even lightly attending his/her chief complaint may render his/her uncooperative during the following sequence of examination. Rapport is easily established with the patient when he feels the examiner's interest in his main trouble.[17]

4. Both the anatomical location and character of the lesion in question indicate the techniques that should be followed during the examination and any special examination aids required.

5. It avoids the time consumption that may results from following an approach for an unreal lesion.

However, the area of the chief complaints should be re-examined at the beginning of the intra-oral examination to detect the characteristic which could not be detected only by its inspection.

References

1. Glaser AN. High-Yield Biostatistics, 3rd Ed. 2005, Lippincott Williams & Wilkins.

2. Lain A, A Closer Look at Diagnosis in Clinical Dental Practice: Part 2. Using Predictive Values and Receiver Operating Characteristics in Assessing Diagnostic Accuracy, J Canadian Dent Ass. 70: 313-16, 2004.

3. Tyldesley, W.R.: Oral diagnosis: A Handbook of Modern Diagnostic Techniques Used to Investigate Clinical Problems in Dentistry, 2nd Ed. 1978, Pergamon press, P. 4.

4. Donald, L.M., Handbook of Oral Diagnosis and Treatment Planning, 1974, R. E. Krieger Pub. Co. P. 3.

5. Enelow, A.J., and Swisher, S.N.: Interviewing and Patient Care, Oxford University Press Inc, USA; 4th Rev Ed edition (1996), P. 33.

6. Wood, N.K.: Treatment Planning, A Pragmatic Approach, St. Louis, 1978, The C.V. Mosby Co, P. 334.

7. Wood, N.K., and Goaz, P.W.: Differential Diagnosis of Oral Lesions, 5th Ed. Mosby, St. Louis, 1997, P. 6.

8. Cohen, L.: Oral Diagnosis and Treatment Planning, (American lecture series, publication no. 856. A monograph in the Banner stone division of American lectures in dentistry). Springfield, Illinois, 1973, P. 3.

9. Everitt BS.: Statistical Methods for Medical Investigations.1994, 2nd Ed Edward Arnold. London.

10. Zegarelli, E.V., Kutscher, A.H., and Hyman, G.A.: Diagnosis of Diseases of the Mouth and Jaws, 2nd Ed, Philadelphia, 1978, Lea & Febiger, P. 28.

11. Froelich, R.E., and Bishop, F.M. : Clinical Interviewing Skills: a Programmed Manual for Data Gathering, Evaluation, and Patient Management, 3rd Ed. 3, St.Louis, 1977, The C.V. Mosby Co, P. 5-24.

12. Kerr, D.A., Ash, M.M., and Millard, H.D.: Oral Diagnosis, 6th Ed, 1983, the C.V. Mosby Co., St. Louis, P. 39.

13. Halstead, C.H., Blozis, G.G., Drinnan, A.J., and Gier, R.E.: Physical Evaluation of the Dental Patient, 1st Ed, St-Louis, 1982, P. 37.

14. Lain A, A Closer Look at Diagnosis in Clinical Dental Practice: Part 1. Reliability, Validity, Specificity and Sensitivity of Diagnostic Procedures. J Canadian Dent Ass. 70: 251-55, 2004.
15. Fleiss JL: Design and Analysis of Clinical Experiments, 1999, Wiley, New York.
16. Yerushalmy J.: Reliability of chest radiography in the diagnosis of pulmonary lesions. Am J Surg, 89:231-40, 1955.
17. Warren B and Stephen M: Oral Diagnosis: The Clinician's Guide, 1st Ed. 2000, Butterworth-Heinemann.
18. Robert BM: Strategies in Dental Diagnosis and Treatment Planning, 1999, Thieme Medical Pub.
19. McDaniel T, Miller D, Jones R, and Davis M: Assessing patient willingness to reveal health history information. J Am Dent Assoc, 126:375, 1995.
20. Ronis D, Hansen C, and Antonakos C: Equivalence of the original and revised dental anxiety scales, J Dent Hygiene, 29:270-2, 1995.

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الملخص العربي

تناول منطقي لخطة الفحص الإكلينيكي المتبعة في التشخيص التفريقي لأمراض الفم والوجه والفكين

محمد إكرام* و رائد السدحان**

أجريت دراسة أفقية واسعة النطاق على ٣٢٤٣ من المرضى البالغين وذلك بغرض دراسة طريقة للتقليل من التشخيص الخاطئ وكذلك منع أهدار الوقت فى تسجيل أعراض مرضية غير حقيقية أو توقعات يذكرها المرض أثناء تسجيل تاريخ المرض. اشتملت الدراسة على استجواب بسيط عن الشكوى الرئيسية للمريض أعقبها فحصها بمجرد النظر ثم إعادة فحص شكوى المريض فى سياق التشخيص التباينى التفريقي. أظهرت الدراسة أنه فى ٦١٪ فقط من الحالات تتطابق شكوى المريض مع الواقع المرضى، وقد عبر ١١٪ من المرضى عن شكاواهم فى صورة توقعات العلاج المستقبلى، كما تم تسجيل ٥٪ من شكاوى المرضى فى صورة تقارير وتحويلات. هناك ٢٣٪ من المرضى مِن مَن لم تتطابق شكاواهم مع الواقع المرضي مما يجعلنا نجمل أنه يجب أن لا نعتبر تسجيل تاريخ المرض وإجراء الفحص العضوى خطوتين مستقلتين ومتتابعتين ولكن يجب أن تفحص منطقة الشكوى الرئيسية بالنظر بمجرد أن يذكرها المريض ثم يستكمل تسجيل بقية تاريخ المرض، ثم يجب إعادة فحص الشكوى الرئيسية مرة ثانية فى سياق التشخيص التباينى للحالة. قدمت الدراسة أيضاً عدداً من العوامل التى تؤدى إلى تحوير الشكوى الرئيسية، كما قدمت خطة جديدة للتشخيص التباينى وذلك بناء على ترتيب واقعى لعناصر الفحص.

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