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An Evaluation of the Dental-Medical History

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Introduction

Patients presenting at Army dental clinics may have medical conditions or may be taking medications which would compromise or be compromised by dental treatment.^{5,6,11} Because these patients do not routinely present with their medical records, the dentist must obtain a dental-medical history without benefit of the information documented in the patient's medical record.

Therefore, the possibility exists for therapeutic errors due to inadequate or incorrect information in the dental-medical history. The object of this study was to determine if access to the patient's medical record would significantly enhance the accuracy and completeness of the medical history as reflected in the dental record.

Literature Review

The importance of obtaining a detailed medical history for dental patients is well established.^{1,7,11} Although the reliability of the various methods has not been determined,⁹ the two basic approaches to obtaining a medical history are the dialogue and the self-administered questionnaire. There are a number of

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papers assessing the accuracy of these techniques.^{3,6,10,12,13} The self-administered health questionnaire has been shown to be readily accepted by patients and less time consuming than the traditional dialogue technique,^{3,6,10,12,13} and has proven superior for providing a recorded data base of retrievable information.¹²

There are numerous disease processes and therapeutic agents which have a potential for untoward reactions in conjunction with dental treatment (Table I).^{1,2,4,5,7,9,11} Data regarding the frequency and type of discrepancies of a medically significant nature in dental records are sparse and conflicting.^{8,9,10}

Picozzi and Neidle reviewed 11,500 dental school records and found that 2.5% of the patients had systemic disease. This figure is far below the estimate for the general public (20%)*, suggesting inaccuracies in dental-medical histories.⁸ In a study by Rees and Brasher of both military and non-military personnel, a much higher incidence (39.9%) was reported,⁹ supporting their earlier conclusions in a similar study.² They also noted that the most effective method of obtaining a medical history, specifically for dental patients, has not been determined. Rothwell and Wragg reported that a written questionnaire elicited information previously missed by a verbal inquiry in 148 of 500 patients.¹⁰ The wide range of results reported in the literature strongly suggests that the accuracy of a dental-medical history is questionable. None of the studies had access to the patients' medical records for evaluative purposes.

Materials and Methods

The military record keeping system provides a unique opportunity to conduct a controlled study evaluating the adequacy of the medical history as recorded in the dental record. In Army treatment facilities medical histories for the medical

*This percentage is a result of the present authors' calculations using data reported by Picozzi and Neidle.

and dental records are independently acquired, *but readily available*, thus permitting a comparative evaluation. The dental records of 100 active duty personnel were randomly selected and matched with their medical records. The medical history recorded in each dental record (Fig. 1) was abstracted and compared to an abstract of the patient's medical record, which includes not only the patient's medical history but all physician entries and laboratory reports as well. Although these (medical) records are subject to human error, they must be accepted as the standard of accuracy for comparisons made within the scope of this paper. It was thus possible to determine both accuracies and discrepancies of a medically significant nature for each dental record examined. After the information was obtained from the record sets, each set was coded so that patients' names and identification numbers could be deleted, insuring their privacy. All the patients had been examined in the dental clinic within the last two years and any entries in the medical record subsequent to the last dental examination were disregarded. All dental examinations were performed by clinicians board certified in Oral Medicine.

Results

The 100 patients whose records were evaluated consisted of 58 males and 42 females, with an age range of 20 to 53 years and a modal age of 21 years. The population sample did not include patients who were hospitalized or identified as medically adjunctive. Medically adjunctive patients include transplant, oncology and radiation therapy patients as well as those seen at the request of cardiology and other hospital services. These patients have copies of their medical records filed with their dental records.

Thirty-nine discrepancies between the medical and dental records were noted. Of these, eleven were considered to be of major medical significance (Table II) and were classified as errors of omission due to patient failure to respond

affirmatively to specific items on the dental health questionnaire. The remainder of the discrepancies (28) was considered to be less medically significant (Table III).

Of the 100 patients surveyed, 54 had significant medical histories which were documented in their dental records (Table IV). Of these, 15 had drug allergies; eight were receiving continuous medication [hypertension (4), discoid lupus erythematosus (1), epilepsy (1), gout (1), thyroxin dependency (1)]; three required special precautions prior to dental treatment [rheumatic heart disease (2), history of hepatitis (1)]. These results reflect lower disease incidence figures per 100 patients than those tabulated by Picozzi and Neidle⁸; however a meaningful comparison cannot be made because the diseases revealed by the discrepancies they discovered differed somewhat from those of the present study.

Discussion

An inadequate dental-medical history may be the result of patient error or examiner error. In the present survey the 11 significant discrepancies were judged to be the result of patients' knowingly or inadvertently withholding information. The possibility that some of these patients willfully submitted misleading information in their dental-medical histories cannot be discounted, especially in view of their "medical awareness". In spite of the possible consequences of withholding important information, patients are aware that admitting to a specific ailment (eg. hypertension) might delay or prolong dental treatment, even though such would be in their best interests. Picozzi and Neidle speculated that this phenomenon might be due in part to the patient's fear of prolonging (i.e. increasing the cost of) or being denied treatment altogether.⁸ It may also stem from embarrassment or fear of discovery (eg. epilepsy, venereal disease) or a feeling

that certain ailments are not the concern of the dentist.

In the military health care system patients can neither be charged for nor denied treatment; however, medical problems may prolong the time necessary for treatment. Although speculation is in order, it is beyond the scope of this paper to determine why patients would withhold information from a dentist; however, if the patient's medical record had been reviewed at the time of the dental examination it is felt that these errors would have been avoided. It is also incumbent upon the dentist to review *all* questions on the medical history form, not only those affirmatively marked.

In analyzing this data the following factors should be kept in mind:

1. Medically adjunctive patients were excluded from the population sample.
2. The fact that all examinations were performed by experienced clinicians, board certified in Oral Medicine, may have contributed to the absence of examiner error in the present study.
3. The group surveyed at Walter Reed Army Medical Center, although consisting solely of active duty personnel, may not be representative of the overall Army population.

Summary and Conclusions

The medical histories in the dental records of 100 randomly selected active duty personnel at Walter Reed Army Medical Center were compared with their Army health records. For 11 patients, significant medical conditions were not noted in their dental records. These errors and their potential complications would have been eliminated if the medical record had been reviewed at the time of the dental examination. It is recommended that patients be encouraged to

present for dental examinations *with* their medical records. Additionally, all questions on a health questionnaire form should be reviewed verbally with the patient. A comprehensive and accurate medical history and clinical examination remain essential for proper patient management, and cannot be overemphasized. Further research is indicated to determine the reasons for the high incidence of errors in dental-medical histories (39% in the present study) and to explore methods aimed at reduction of the error rate.

HEALTH QUESTIONNAIRE			
NAME		SSAN	
UNIT		HOME TELEPHONE NO.	OFFICE TELEPHONE NO.
PLACE A CHECK IN THE YES OR NO COLUMN			YES NO
1. Now, or in the past 2 years, have you been under a physician's care?			
2. Have you had any serious illness, operation or hospitalization in the past?			
3. Are you allergic to local anesthesia (novocain)?			
4. Are you taking birth control pills?			
5. Have you ever had hepatitis or yellow jaundice?			
6. Has there been a change in your health in the last 2 years?			
7. Do you smoke more than 1 pack of cigarettes a day?			
8. Do you drink alcoholic beverages more than 6 times a week?			
9. Have you ever gotten sick because of dental treatments?			
10. Are you a "bleeder" or had trouble following previous dental treatment?			
11. Are you short of breath after climbing 1 flight of stairs?			
CHECK CONDITIONS IF THEY APPLY TO YOU			
☐ Heart Trouble	☐ Frequent Headaches	☐ Hives or Skin Rash	☐ Epilepsy (Fits)
☐ Heart Murmur	☐ Thyroid Disease	☐ Asthma	☐ Ulcers
☐ High Blood Pressure	☐ Kidney Disease	☐ Sugar Diabetes	☐ Anemia (Thin Blood)
☐ Rheumatic Fever	☐ Liver Disease	☐ Arthritis	☐ Heart Palpitations
☐ Heart Failure	☐ Sinus Disease	☐ Tuberculosis	☐ Stroke
CHECK ANY TREATMENT, OPERATIONS, OR CONDITIONS YOU MAY HAVE OR HAVE RECEIVED			
☐ Transplant Surgery	☐ Drug Dependence	☐ Sadness or Depression	
☐ Open Heart Surgery	☐ Psychiatric Treatment	☐ Venereal Disease	
☐ X-ray Treatments	☐ Pregnancy	☐ Cancer	
PLEASE WRITE IN YOUR ANSWER			
Are you allergic to penicillin, drugs or medicines? ☐ YES ☐ NO			
If YES, which ones? _____			
In the last 2 years have you or are you now taking any drugs or medicines? ☐ YES ☐ NO			
If YES, which ones? _____			
DATE	SIGNATURE OF PATIENT		
DATE	SIGNATURE OF DOCTOR		
RECHECK			
DATE	DOCTOR'S SIGNATURE		

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Fig. 1 Dental-medical history form used at Walter Reed Army Medical Center.

TABLE I

DENTALLY SIGNIFICANT DISEASES AND MEDICATIONS

ALLERGIES

- Antibiotics
- Aspirin
- Local anesthetics
- Other

BLOOD DYSCRASIAS

BONE AND JOINT DISEASES

CARDIOVASCULAR DISEASE

- Angina pectoris
- Arrhythmias
- Bleeding diatheses
- Congenital defects
- Congestive failure
- Hypertension
- Hypotension
- Murmurs
- Myocardial infarction
- Rheumatic heart disease
- Stroke

DERMATOLOGICAL DISORDERS

GASTROINTESTINAL DISORDERS

GENITOURINARY DISORDERS

- Renal disease
- Venereal diseases

INFECTIOUS DISEASES

- Hepatitis
- Tuberculosis
- Other

METABOLIC DISEASES

- Endocrine dysfunction
- Inborn errors

NEUROLOGIC DISORDERS

PREGNANCY

(not a disease, but significant)

PSYCHIATRIC DISORDERS

RESPIRATORY DISEASES

- Asthma
- Sinusitis
- Other

MEDICATIONS

- Analgesics
 - narcotic
 - non-narcotic
- Anovulatory preparations
- Antiarthritics
- Antibiotics
- Anticholinergics
- Anticoagulants
- Anticonvulsants
- Antidepressants
- Antigout preparations
- Antihistamines
- Anti-inflammatory preparations
- Barbiturates
- Bronchodilators
- Cardiotonics
- Chemotherapeutics
- Diuretics
- Hormones
- Hypoglycemics
- Hypotensives
- Immunosuppressants
- Muscle relaxants
- Tranquilizers
- Vasodilators
- Other

TABLE II

DENTAL HISTORY DISCREPANCIES OF MAJOR MEDICAL SIGNIFICANCE IN 100 RECORD COMPARISONS

<u>TYPE OF DISCREPANCY</u>	<u>NUMBER OF PATIENTS</u>
Anemias	2
Hypertension	2
Psychiatric	2
Tuberculosis (Isoniazid prophylaxis)	2
Cardiac arrhythmias	1
Systemic lupus erythematosus	1
Ulcer (gastrointestinal)	<u>1</u>
TOTAL	11

TABLE III

DENTAL HISTORY DISCREPANCIES OF MINOR MEDICAL SIGNIFICANCE IN 100 RECORD COMPARISONS

<u>TYPE OF DISCREPANCY</u>	<u>NUMBER OF PATIENTS</u>
Surgery or hospitalizations	14
Medications (birth control pills)	4
Venereal disease	3
Functional heart murmurs	5
Asthma	1
Pancreatitis	<u>1</u>
TOTAL	28

TABLE IV

DISEASES, CONDITIONS AND MEDICATIONS DOCUMENTED IN 54 OF 100 DENTAL RECORD ABSTRACTS

<u>DISEASE OR CONDITION</u>	<u>NO. OF PTS</u>	<u>MEDICATIONS</u>	<u>NO. OF PTS</u>
SURGICAL PROCEDURES	7	Anovulatory preparations	14
DRUG ALLERGIES			
Pencillin	11	Antibiotics	4
Prochlorperazine	1		
Horse serum	1	Diazepam	4
Phenobarbital	1		
Sulfa	1	Diuretics	3
FOOD AND PLANT ALLERGIES	5	Non-narcotic analgesics	3
DISEASES			
Hypertension	4	Hypotensives	3
Murmurs	3		
Renal calculi	3	Barbiturates	
Sinusitis	3	(Phenobarbital)	2
Rheumatic heart disease	2		
Venereal disease	2	Antigout preparations	1
Abscessed chin	1		
Anemia	1	Anti-inflammatory preparations	1
Asthma	1		
Discoid lupus erythematosus	1	Anticonvulsive (Phenytoin)	1
Epilepsy	1		
Gout	1	Narcotic analgesic	1
Hepatitis	1		
Otitis media with ruptured ear drum	1	Antimalarial (for lupus erythematosus)	1
Syncopal episodes	1		
NEOPLASMS		Thyroxin	1
Benign breast tumor	2		
Giant cell tumor (wrist)	1		
Thyroid cyst	1	TOTAL	39
TOTAL	57		

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