RISK MANAGEMENT

by Dr. Brock Rondeau

Abstract: The purpose of this article is to provide the orthodontic practitioner with a basic understanding of the concept of "Risk Management" so that he/she might be able to minimize the possibility of being sued. There are a number of factors regarding risk management which will also help the prudent practitioner reduce the likelihood of losing a lawsuit should it occur. Many dentists have spent hundreds of hours learning new skills to enhance their service to their patients. My suggestion is that we must also try to increase our risk management skills and our understanding of legal matters if we are to survive the 1990's.

he term "Risk Management" means what precautions can be taken in your practice in order to minimize exposure to dental malpractice claims. The two areas of dentistry which have been the most vulnerable in the past have been periodontics and oral surgery. However, recently more lawsuits have been occurring in the area of conventional orthodontics involving bicuspid extractions and TMJ.

The two procedural areas which have been vulnerable are record keeping and informed consent. The importance of good records cannot be overemphasized either as a means of making a proper diagnosis or in defending a lawsuit should it occur. The problem with informed consent is that you either have an agreement which has all the essential ingredients and has been signed by the patient or you do not. If you do not have an informed consent agreement, you have no defense if the patient states in the lawsuit that they did not properly understand the risks of treatment. The courts view orthodontics as a time consuming, complicated and expensive procedure and, therefore, insist that all risks of treatment, alternate treatment plans, etc., be adequately explained to the patient prior to treatment. My intention is to spend the first part of the article on the risk management issue and then address the problem of informed consent in more detail in the next issue of the Journal.

Checklist For Risk Management

- 1. Good Records
 - a) Registration
 - b) Medical History
 - c) Update Medical History
 - d) Dental History
 - e) Clinical Exam
 - f) TMJ Exam
 - g) Cephalometric Film

- h) Computerized Tracing Cephalometric Film
- i) Panorex or Full Series X-Ray
- j) Transcranial X-Ray
- k) Soaped Study Models
- Extra-Oral Photos and Intra-Oral Photos
- m) Treatment Plan
- 2. Informed Consent Agreement
- Patient Informed of Changes in Treatment Plan
- 4. Proper Office Sterilization Procedures
- 5. Infection Control Procedures (gloves, masks, etc.)
- 6. Good Communication
- Communication and Office Efficiency
- Document Pre-Existing Periodontal Condition Prior to Treatment
- Normalize Periodontal Conditions Prior to Orthodontic Treatment
- Record Any Changes in Periodontal Condition
- Document Pre-Existing TMJ Problem Prior to Treatment
- Stabilize TMJ Prior to Orthodontic Treatment. Phase I Diagnostic Splint recommended to establish correct relationship of mandible to maxilla and correct vertical dimension prior to orthodontic treatment.
- Record Any Changes in TMJ Signs and Symptoms
- Never Alter Records Once Lawsuit Initiated
- 15. Financial Arrangements Finalized Prior to Treatment
- Orthodontic Release Signed if Treatment Discontinued
- Maintaining Preparedness for Life Threatening Office Medical Emergency
- 18. Update Post Operative Instructions
- 19. Proper Case Selection
- 20. Patient Education Information
- 21. No Oral, Verbal, or Written Guarantees

1. Good Records

QUESTION: Are you prepared at this time to defend a lawsuit with any of your patients, based on your records, diagnosis and treatment plan? If the answer is "No", I suggest you get your office and records in order quickly. You owe it to yourself and your patients and your family not to put yourself in a position where you could lose a lawsuit due to inadequate records. All orthodontic practitioners will get results with a few patients that are not ideal. This is a part of orthodontics which dictates that not all results are perfect or predictable. Less than ideal results could be due to lack of cooperation, heredity, environmental problems, severe skeletal problems, etc. If a malpractice case emerges from this scenario, the practitioner must defend same to the best of his/her ability. However, if that lawsuit is lost primarily due to poor orthodontic records, I think that is a tragedy.

Orthodontic records must be very thorough, complete and legible. If you want to convey the impression that you are well organized and precise, your records must demonstrate this fact. Well documented and easy to decipher clinical findings, medical and dental histories, treatment plans, treatment visits, high quality x-rays and properly trimmed study models form the basis of a solid malpractice defense.

Remember that once you have a problem with a patient and you are sued for malpractice, you will never have a chance to see the patient and upgrade these records again. Therefore, you must be very thorough in your initial exam as well as recording all comments, clinical findings, etc., with the monthly visits.

It is important for practitioners to realize the law assumes that if it is not written on the treatment chart, it did not happen. Dentists must start spending another few minutes with each patient at each visit on chart management. The litigation system is obsessed with orthodontic records. In all malpractice cases, the defendant's records are copied and distributed to the insurance companies, defendant's lawyer, plaintiff's lawyer, and to the proposed dental experts. In the courtroom, the judge and jury will want to see whether your records substantiate your testimony re-

"The importance of good records cannot be overemphasized . . ."

garding the treatment of your orthodontic patient.

Summary of Essentials for Orthodontic Records

- a) Registration—Identify patient's name, address, telephone number, previous dentist and any medical or dental specialist who has treated the patient.
- b) Medical History—Must be dated appropriately, filled out in the patient's own handwriting and signed by the patient to authenticate the answers should any questions arise at a later date.
- c) Update Medical History—Medical histories must be updated at least every 6 months. In today's legal climate, short verbal histories are not sufficient. Due to the increased amount of information about the interaction of drugs and how treatment procedures can affect the body systematically, thorough medical histories must be obtained and updated regularly. It is the practitioner's responsibility to be aware of the patient's current health status in order to protect the patient.
- d) Dental History—Any previous dental history involving trauma, accidents, or previous orthodontic treatment must be solicited and recorded.
- e) Clinical Exam—The results of the clinical exam must be recorded in the orthodontic chart. The exact clinical condition of the teeth, bone, muscles including periodontal condition must be documented thoroughly. The examination for periodontal disease must include the use of a calibrated periodontal probe to record the depth of the period pockets as well as clinical observation of the color, texture and degree of mobility, amount of bleeding, etc.

TMJ Exam—A separate and detailed exam must be conducted for the TMJ prior to orthodontic treatment. All signs and symptoms must be recorded. TMJ range of motion measurements including interincisal opening, lateral range of motion, deviation of mandible during opening and closing, opening and closing clicks, crepitus and/or pain on opening or closing. A complete examination for trigger points and sore muscles in the head and neck region is mandatory prior to orthodontic treatment. Once recorded. this information can then be used to monitor the success of the orthodontic treatment plan.

If the patient presents with numerous trigger points and limited range of motion, but improves significantly during the orthodontic treatment, I would assume that the orthodontic treatment plan chosen was correct. It has been my clinical experience that orthodontic patients who are treated with the functional philosophy which develops the arches, advances the mandible to meet the maxilla in Class II cases. increases the posterior vertical dimension with the eruption of the posterior teeth, and is basically a non-extraction technique, results in patients having fewer TMJ problems.

Conversely, my experience has been that orthodontic patients treated with the conventional philosophy involving retractive orthodontics such as cervical facebow headgear and bicuspid extractions, tend to have more TMJ problems including decreased range of motion and more trigger points. It is vitally important due to the increase in litigation, that the pre-existing condition of the TMJ be thoroughly documented prior to orthodontic

"... the law assumes that if it is not written on the treatment chart, it did not happen."

treatment.

- g) Cephalometric Film—A ceph must be taken for all orthodontic patients in an effort to try to establish:
 - 1. Evaluation of Soft Tissue Profile
 - 2. Type of Malocclusion
 - 3. Severity of the Malocclusion
 - 4. Severity of the Vertical Problem
 - 5. Position of the Maxilla (protrusive, normal, retrusive)
 - 6. Position of the Mandible (protrusive, normal, retrusive)
 - 7. Inclination of Anterior Teeth (flared, normal, vertical)
- h) Computerized Tracing Cephalometric Film—I recommend that practitioners get a computerized ceph tracing for each cephalometric film. This is much more accurate than hand tracing and much more professional. Most of the larger orthodontic labs offer this service.
- i) Panorex or Full Series X-Rays—The panorex is an excellent screening film but periapicals are recommended in addition to the panorex in the case of periodontal problems or impacted cuspids, supernumerary teeth, etc. If a problem area is noted on the panorex, it should be more closely observed with a periapical film.
- Transcranial X-Rays—Transcranial films are necessary to help locate the position of the condyle in the fossa. It has been my clinical experience that when the condyles are superiorly or posteriorly displaced, the patients have increased signs and symptoms of TMJ. When the condyle is moved to a more central position in the fossa, either using an anterior repositioning splint or an orthopedic appliance, the symptoms are lessened. These clinical situations can be easily confirmed when taking accurate (corrected)

transcranial x-rays.

- Soaped, Properly Trimmed Orthodontic Study Models-These professional looking orthodontic study models are an essential part of orthodontic records. Most orthodontic labs provide this service at a nominal fee. Dentists and orthodontists are trained using models fabricated with yellow stone. However, poorly trimmed yellow stone models do not impress the patient with a degree of professionalism nearly as much as do properly trimmed and soaped white orthodontic study models. The models are important not only to show the condition that exists prior to treatment, but can be used throughout treatment to show the progress of the case. This is important from an internal marketing standpoint as well as helping build the patient's confidence in the orthodontic practitioner's ability.
- Extra-oral photos/Intra-oral photos -Appropriate extra-oral as well as intra-oral photos must be taken prior to treatment. This will document the clinical conditions, including facial profile that exists prior to treatment. It is important when one compares the pretreatment photos with the post-treatment photos that they confirm an improvement. When the functional treatment philosophy is employed, the facial profile usually improves dramatically. Since improved appearance is one of the main reasons our patients seek orthodontic treatment, I would like to emphasize how important I view this fact.
- m) Treatment Plan—After all records have been assembled, the practitioner must study the records and formulate a treatment plan prior to the informed consent treatment

conference. This written, individually customized treatment plan must then be presented to the patient and after receiving his approval, evidenced by the signing of the informed consent agreement, treatment may be initiated.

2. Informed Consent

The courts have been very clear on the fact that orthodontic practitioners must obtain the patient's informed consent prior to the initiation of orthodontic treatment. Failure to obtain the patient's informed consent constitutes negligence. Negligence by a dentist or orthodontist is synonymous with "malpractice". Negligence is grounds for the patient to sue for damages in a state or federal civil court. Informed consent means that the patient thoroughly understands the proposed treatment, and that he agrees to the treatment plan prior to the initiation of treatment. This must be confirmed by the signing of an Informed Consent Agreement. Verbal agreements do not hold up in court nearly as well as signed agreements.

Requirements of Informed Consent

- a) Nature of Proposed Treatment
- b) Benefits of Treatment
- c) Risks of Treatment
- d) Prognosis of Non Treatment
- e) Alternate Treatment Plans
- f) Written in Layman's Terms
- g) Adequate Time Spent Explaining the Above
- h) Must be Signed by the Patient Due to the complexity of this subject, I will deal in more detail with this important topic of informed consent in the next issue of the Journal.

3. Patient Informed of Changes in Treatment Plan

Patients must be informed of all changes in the treatment plan and should agree to the changes before proceeding. A properly dated written entry in the chart of the discussion that took place is sufficient.

4. Proper Office Sterilization Procedures

This article will not go into this in detail, but suffice it to say, unless your steriliza-

tion policy is updated constantly in view of new information, you could be at risk.

5. Infection Control Procedures

In this day and age with the possibility of cross contamination, the orthodontic practitioner and staff are well advised to wear gloves, masks, uniforms, etc.

6. Good Communication

The importance of good communication with the patient must be emphasized again. Good communication is essential in building a practice, and will help prevent problems in the future if the patient feels that you are concerned about their welfare enough to spend the time to communicate with them at regular intervals. It is particularly important at the informed consent treatment conference appointment to spend adequate time (usually 45 minutes) with the patient properly explaining your treatment plan. The practitioner must talk directly to the patient and also be a good listener. The best communicators speak clearly and listen attentively. When listening, maintain good eye contact, do not interrupt the speaker or change the subject. A good listener responds to each of the speaker's questions. Good communication is essential to help maintain a lawsuit-free environment.

7. Communication and Office Efficiency

Of all the professions, dentistry has the most difficult challenge in trying to have an efficient office as well as communicate effectively with the patients. Dentists take many courses on how to run an efficient dental office and to make the best use of their productive time. Practitioners must train themselves to write extensively on the patient's chart regarding each procedure that was accomplished at each appointment as well as details of conversations with the patient. Patients get very upset when they do not receive adequate attention. Time spent communicating with patients will forestall a large number of lawsuits.

8. Document Pre-Existing Periodontal Conditions Prior to Treatment

Since periodontal problems are one of

"Failure to obtain the patient's informed consent constitutes negligence."

the most common areas involved in dental malpractice cases, it is important that the pre-existing periodontal condition be evaluated and recorded prior to treatment. The following should be recorded:

- a) Level of home care
- b) All patient reported symptoms
- c) Pocket depths
- d) Degree of mobility
- e) Color, texture
- f) Patient's admissions ("I know I should floss, but . . .")
- g) All clinical findings
- h) Level of bone loss evident on x-rays

9. Normalize Periodontal Condition Prior to Orthodontic Treatment

If the periodontal condition is mild to moderate, this must be improved prior to the initiation of any orthodontic treatment. In the case of severe periodontal problems, a referral to a periodontist would be advisable. After the periodontist has successfully completed the periodontal treatment, you can consider treating the case orthodontically.

10. Record Any Changes in Periodontal Condition at Each Appointment

The state of health evidenced by the level of home care by the patient must be recorded at each appointment. I recommend that you do several things:

- a) Take a photo of the level of health of the gingiva prior to the removal of the archwires. Then compare that intra-oral photo with one taken at the next visit to see if the home care has improved. Since this is such an important part of orthodontic treatment, you must document the level of oral hygiene.
- b) Devise some system for recording the level of health of the gingival tissues. One such system would be to

- grade the tissues from 0 to 5, with 0 being the worst and 5 the best. This way you can monitor the level of health and the oral hygiene of the patient on a monthly basis. If the level is deteriorating, appropriate action must be taken immediately.
- c) Record on the chart each month what the patient said about his oral hygiene and what the practitioner and staff said about the problem.
- d) Notation should be made as to when oral hygiene instructions were given to the patient.
- e) Periodontal pockets must be probed on a regular basis and pocket depth recorded, and check for mobility and color and texture changes.
- f) Radiographs must be taken to check for the level of bone loss.
- g) Patients must be informed as to the progress of their periodontal disease and their state of health.

11. Document Pre-Existing TMJ Problems Prior to Treatment

All signs and symptoms of TMJ must be thoroughly recorded on a special TMJ chart prior to orthodontic treatment. Unless the pre-existing condition is fully documented in terms of range of motion, deviation, clicking, crepitus, pain, headaches, neckaches, earaches, trigger points, etc., the practitioner will have no defense later on if the patient alleges that the problem did not exist prior to treatment, but rather was caused by the treatment.

12. Stabilize TMJ Prior to Orthodontic Treatment

The signs and symptoms of TMJ must be addressed prior to the orthodontic treatment. Sometimes a diagnostic splint is recommended to establish the correct relationship of the mandible to the maxilla, correct condyle fossa rela-

"It is vitally important... that the pre-existing condition of the TMJ be thoroughly documented prior to orthodontic treatment."

tionship, and the correct posterior vertical dimension prior to orthodontic treatment. Once you have stabilized the TMJ and have some idea of your final treatment position, you can then, using your splint as a blueprint, initiate orthodontic treatment. Careful examination of the patient will show improvement in the range of motion and diminished number of trigger points and sore muscles in cases where the TMJ has been stabilized.

13. Record Any Changes in TMJ Signs and Symptoms at Each Appointment

The state of health of the TMJ is vital to the success of your orthodontic treatment. Finished results must include not only straight teeth and good occlusion, but also demonstrate a healthy TMJ with full range of motion, few trigger points and pain free. In order to ensure this, all signs and symptoms must be recorded at each appointment. Obviously, your chances for success are increased when the problem is closely monitored.

14. Never Alter Records Once Lawsuit Initiated

Practitioners are urged never to alter records once the lawsuit has been initiated. You must produce a copy of your original records. The courts have professional document examiners who check to see if you have added anything at a later date.

If you alter the original records in any way, you will lose so much credibility and run a great risk of losing the case. In two medical malpractice cases in 1978 in Massachusetts and in 1982 in Alabama, medical doctors lost both cases based on alteration of medical records. Persons listening to the cases, including

jurors, arbitrators and judges, perceive alteration of records an admission of guilt.

15. Financial Arrangements Finalized Prior to Treatment

The complete financial situation must be thoroughly discussed at the informed consent treatment conference. Various methods of payment may be presented to the patient which fit within their budgets. Once a payment plan has been agreed upon by both parties, a financial agreement must be signed by both parties and a copy given to the patient, the original kept in the chart prior to the initiation of orthodontic treatment.

16. Orthodontic Release Signed If Treatment Discontinued

If orthodontic treatment is discontinued for any reason, including poor oral hygiene, lack of cooperation, missed appointments, financial reasons, etc., this must be noted on the orthodontic release form. The entire matter must be discussed with the patient and/or with the parent and then signed by the person responsible for the account (patient or parent). The entire procedure should be witnessed by a mature member of your staff to avoid any misunderstanding that might arise in the future regarding the case.

17. Maintaining Preparedness for Life Threatening Office Medical Emergency

The orthodontic practice of the 90's must maintain the office staff in a state of preparedness for the infrequent possibility of a life-threatening medical emergency. Patients with serious systemic diseases currently have improved quality of life and mobility which enables

them to access your office more readily.

Risk management starts with risk assessment of the patient's medical history. Each patient should complete a comprehensive medical history and receive a verbal history interview in order to determine his state of health and degree of risk involved. As mentioned previously, the verbal health history must be updated at subsequent visits in an attempt to keep the status of the patient's health current.

Practitioners must then classify the degree of risk involved for treating different patients. Good communication with the primary-care physician and medical consultation as necessary is indicated with patients with serious medical problems.

Time must be spent training the office staff on how to handle medical emergencies and appropriate emergency drugs must be available. Continuing education for office personnel should be documented for medico-legal purposes.

Summary of Steps for Emergency Preparedness

- 1. All staff members practice specific pre-assigned duties.
- 2. All staff members have current CPR Certification.
- 3. Periodic emergency drills are used to test the system at least quarterly.
- 4. Appropriate emergency phone numbers (police, ambulance, and local physicians) are placed prominently by each phone.
- Oxygen tanks and the oxygen delivery system are checked regularly to ensure that it is in good working order.
- All emergency medications are checked monthly to assure replacement or outdated medications. A specific staff member is assigned to ensure that this is accomplished and documented.

In order to ensure the orderly and efficient handling of a medical emergency, it is important for the practitioner and the staff to spend several sessions studying and practicing these procedures so that emergencies can be handled in a calm and capable manner.

18. Update Post Operative Instructions

Patients must be given instructions on

who they can contact in the unlikely event there is a problem or an emergency. Never be out of touch with your patients and ensure that if you are not available that you leave the name of a competent practitioner with the appropriate phone number with your answering service. This will ensure that the patient is able to receive proper care at all times and will reduce the risk of problems at a later date.

19. Proper Case Selection

It is vitally important that general dentists and pedodontists who practice orthodontics select their cases carefully. As mentioned previously, the key to proper diagnosis and hence case selection is comprehensive records. Once the records have been taken, the practitioner must determine the degree of difficulty of the case based on the functional, skeletal and dental problems. Inexperienced practitioners are advised to join an orthodontic study club in order to help them determine what cases are simple and therefore can be treated, and what cases are complicated and should be referred to the orthodontic specialist. This is a very important factor in minimizing the risk of a future problem.

20. Patient Education Information

Clear, concise, informative educational materials must be available for the patients on all aspects of orthodontic treatment. These should include information on all removable orthopedic appliances, fixed appliances, elastics, retainers, positioners, TMJ, etc. It is the responsibility of the orthodontic practitioner to ensure that the patient thoroughly understands exactly what appliances are being utilized, how they are adjusted, and the instructions for cleaning and weartime.

21. No Oral, Verbal or Written Guarantees

It is absolutely imperative that you not give the patient any kind of guarantee as to the predicted outcome of treatment. Orthodontic practitioners have been guilty of making promises to patients regarding the treatment which were not fulfilled, and in each case when a dispute arose, the practitioner lost. You must be confident that you can do

"Good communication is essential to help maintain a lawsuit-free environment."

the treatment and you may convey that to the patient, but you cannot guarantee a result in orthodontics. There are too many variables such as poor oral hygiene, genetics, environmental factors, lack of patient cooperation, missed appointments, etc.

During case presentation, adequate time must be spent discussing the prognosis which should take into account the possibility of a less than ideal result. If it is a difficult procedure and the patient is expecting an outcome which is different from what occurs, he/she may attribute the difference to negligence or malpractice. Patients may have unrealistic expectations based on articles in the lay press or as a result of overly optimistic predictions on the practitioner's part.

It may be prudent to say to the patient that you are hopeful that, with the use of an orthopedic appliance, you will be able to reduce the number of headaches and improve their profile. You cannot guarantee the result but you can say that many patients have been significantly improved with this type of treatment philosophy. My experience has been that patients have a tendency to trust you more when you tell them the negatives. Not only will your acceptance rate of your case presentations increase, but you will also significantly lower your risk of a problem in the future.

Defense Checklist

- Membership in a professional orthodontic organization such as AAFO (American Association for Functional Orthodontics) and IAO (International Association for Orthodontics).
- Member of an advanced orthodontic study club which meets on a regular basis.
- 3. Make a commitment to attend con-

- tinuing education courses on a regular basis.
- Record the hours of all courses on orthodontics-TMJ-perio that you have attended since graduation.

Legal Aspects of Dental Practice

It is time for orthodontic practitioners to take time to understand the law and the way the legal system functions, rather than simply fearing the law. I often use the analogy of the policeman. Law-abiding citizens have no reason to fear the policeman except if they do not understand or do not obey the law. Civil law exists in order to protect the rights of the patient. The practitioner's understanding of the legal system and the areas that make him vulnerable will assist in eliminating or preventing future litigation problems.

The legal world is unfamiliar territory to most dentists, but so is the maxillofacial a mystery to the average lawyer. However, some lawyers who see dentistry as a growth area in their practice, are making an effort to learn about the TMJ and other aspects of orthodontics. Dick Greenan, President of Imaging Systems, and a recognized expert in the area of TMJ radiography, informed me that he spoke recently to a number of lawyers at their bar association meeting. He added that he has sold copies of his new state of the art radiology manual entitled "A Practical Atlas of TMJ and Cephalometric Radiology" to six members of the legal profession. Question: If the legal profession is making an effort to learn more about the dental profession, should we not do likewise? I believe that dentistry is entering an era of litigation similar to what the medical profession experienced years ago. Mr. C. K. Perry, Attorney, wrote an article in the Journal of the Michigan Dental Association, where he stated,

Fifteen years ago, physicians in Michigan were besieged with medical malpractice cases and a socalled "medical malpractice crisis" occurred in the State. In response to a flood of lawsuits, physicians have learned to document their records and to practice "defensive medicine". In 1988, this resulted in a significant decrease in the number of medical malpractice cases which have been filed. The new frontier for plaintiffs' attorneys who stand to benefit through their contingent fee arrangement is in the area of dentistry. Only advanced knowledge and preparation will ensure that a litigation crisis does not occur within the dental profession.

In order to defend ourselves in the case of a malpractice suit, or better still, to prevent a malpractice suit, It is important that we learn to identify potential problem areas in our office. From every problem there arises an opportunity and I see the legal problem which dentistry is presently facing as an opportunity. Now is the time for practitioners to reorganize their offices, improve their record keeping systems, communication skills, documentation practices, and educate and train their orthodontic staff so everyone can continue to practice comprehensive and safe orthodontics. My belief is that while the practitioner is attempting to protect himself from a malpractice suit, he will actually be providing a superior service to his patients. If we do not take the time to immediately educate ourselves in the area of risk management and legal matters, I am certain we will be faced with a crisis similar to that experienced by the medical profession.

EDITOR'S NOTE:

Next Month's Issue of The Functional Orthodontist will include Dr. Rondeau's 7 page informed consent form.



Brock H. M. Rondeau, D.D.S. 1275 Highbury Avenue, #16A London, Ontario, CANADA N5Y 1A8 (519) 455-2551

Bibliography

- Ebersold, L.A. Malpractice: Risk Management for Dentists, Penn Well Publishing Company.
- Rondeau, B.H. Informed Consent—An Essential Part of Orthodontic Records, Journal of General Orthodontics, Vol. 1, September 1990, pp. 75-78.
- Crosby, D.R., Crosby, M.S. Professional Liability in Orthodontics, JCO, March 1987, pp. 162-166.
- Perry, C.K. Jr. TMJ Dysfunction Litigation—Pandora's Box Opens Up, Journal of the Michigan Dental Association, Vol. 70, November-December 1988, pp. 533-538

