
Communications

Teaching Clinical Epidemiology in the Family Practice Office

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At the University of Arizona College of Medicine, the Department of Family and Community Medicine has been responsible for teaching epidemiology since 1968. Numerous educational strategies have been used, but epidemiology has always been included in the basic science years and generally has been viewed by the medical students as an intrusion into their "hard sciences" time. Students have expressed resentment at emphasis being placed on epidemiologic methodology rather than upon disease or clinical aspects of medicine. Despite adverse student reaction, departmental faculty have noted that students perform well on final content evaluations as well as on national board examinations.

In an attempt to address the students' concern for enhanced clinical relevancy, as well as to provide the content requirements for epidemiology, an experimental program was introduced to a small group of students. This communication will report on this program, in which the clinical record was used to teach the principles of epidemiology.

Method

Teaching methods during the 1976-1977 academic year for clinical epidemiology were of two types. Lectures focusing on methodological

principles were held for the entire class, with small group sessions scheduled for problem-solving workshops. Within one of the latter the focus was on prospective medicine, identification of risk factors, and levels of prevention. Concepts of peer review, chart audit, and practice performance standards were discussed. Students then selected a sample of charts from the University of Arizona Family Practice Office. They were asked to audit these charts to determine levels of preventive care and to identify the application of principles of epidemiology.

Three audit seminars with a faculty member present were held in addition to the formal lecture program and problem-solving workshops. Full attendance was noted at all three of the audit sessions, with all students enthusiastically participating in chart audits and group discussions.

Results

Six months after the completion of the course and after the course grade had been submitted, the group was asked for a retrospective analysis of the use of the medical record in teaching clinical epidemiology. All students responded. Their anonymous responses indicated that they found this technique valuable. Some of the comments are as follows:

I thought our sessions were interesting and informative in the area of epidemiology. The use of actual medical records had several advantages: (1) Most of us had had little exposure and this contact was informative.

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(2) It drove home the particular screening practices that often were not done when they should have been done. I recommend that a similar type of program for the next year use additional time to look at specific things; for example, charts for women aged 20 to 30.

I feel that I benefited from the use of medical records in our small group discussions. In evaluating patients' charts I came to the greater realization of the importance of prevention and began to see how preventive measures may be incorporated into everyday patient encounter.

I think I learned more from these than I would have from just writing a report. The sessions tied together concepts we were learning in lecture with real cases found in the family practice clinic.

I think our sessions in reviewing records were useful. I found epidemiology to be useful and interesting. I think even more drill would be worthwhile.

I found the small group sessions using actual medical records to be quite stimulating and worthwhile. At that time in the curriculum many of us had had little actual exposure to medical charts, and this was an added bonus. The use of the charts had the advantage of providing some idea of how epidemiology should actually

be employed in medical practice. I found the sessions more worthwhile than the regular epidemiology class time.

I think the method of reviewing records was very helpful both as an introduction to epidemiology and as an introduction to reviewing the charts.

I do recall the sessions as both interesting and entertaining. I think I might have benefited from our structured discussions of a few common preventive measures and the warning signals that point to their use. This should be followed by actual patient histories and examinations where students apply those measures.

Comment

In summary, based on the positive response and interest of the students, it would appear that the audit of clinical records is a useful tool in teaching clinical epidemiology. The Family Practice Office setting, with its emphasis on continuity of care, preventive maintenance, and care for a patient population irrespective of age and sex, offers a unique laboratory to introduce the undergraduate medical student to clinical epidemiology. Chart audit bridges the gap between theory and application.

Management of Natal Teeth

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Teeth are present in the mouths of newborn infants with an occurrence of about 1 in 3,000 births.¹ If present at birth they are called natal teeth, and if they erupt shortly after birth—neonatal teeth.

These present a management problem because in most instances they are extremely loose, creating not only interference with nursing, but an inherent danger of possible aspiration of the tooth.

Treatment, however, is not as straightforward as one might believe. Because 85 percent of them are true primary teeth, these teeth cannot be

extracted with impunity. The importance of this point is better understood if the relationship of teeth during their development is summarized.

Tooth Development

Primary teeth and the corresponding tooth buds of the permanent successors initially develop in close proximity to one another. The extraction of the primary tooth during this period of close approximation will most likely result in the concurrent removal of the bud of the permanent tooth.

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The result is obvious—a permanent tooth will never develop.

On the other hand, if the primary tooth is allowed to remain, the combined growth of the roots of the primary tooth and the crown of the permanent tooth results in a movement of the two teeth away from each other. Since the two teeth are no longer in close approximation, the extraction of the primary tooth at this later time will probably not result in the concomitant removal of the bud of the permanent tooth. Clinically, a primary tooth should therefore be allowed to develop as long as possible in order to lessen probability of concurrent removal of the permanent tooth.

Supernumerary, or extra teeth, develop as a result of abnormal proliferation of the primary tooth buds; consequently, they initially maintain a close relationship to the primary tooth. However, the supernumerary tooth and the primary one develop at a similar rate. Therefore, the approximation to one another is not as intimate as between the primary tooth and the permanent tooth. Clinically, a supernumerary tooth can therefore be extracted with little danger of concurrent removal of the primary tooth.

Management

In light of this information, the physician should obtain a dental radiograph and consultation whenever possible before making a decision to extract a natal tooth. The radiograph will show its relationship to the bud of the permanent tooth, and also whether the natal tooth is a primary or supernumerary one. Then, the pedodontist or physician can inform the parents of the likelihood of untoward sequelae when the natal tooth is extracted.

Frequently, however, the natal tooth may be so loose that the danger of aspiration supercedes the time available to obtain a dental radiograph, and the tooth must be extracted immediately.

Prior to removing the tooth, the physician should obtain the parents' consent and then inform them of the possibility that the extraction of the natal tooth might also inadvertently remove the permanent tooth bud.

When removing the tooth, caution should be exercised because the gingival tissues in the infant are very fragile and tear easily. To prevent this tearing, the following procedure is recommended.

Grasp the tooth with a gauze sponge, placing the tooth between the index finger and thumb. Rotate sharply and deliver the tooth upwards. Do not pull the tooth in the direction of the lips. The upward, twisting movement will result in a clean, circular wound with no soft tissue laceration. The gauze renders the tooth less slippery and eliminates the danger of dropping the tooth in the mouth once it is extracted.

The necessity for a follow-up dental examination should be stressed. It is important that the pedodontist determine whether the permanent tooth was also extracted. Follow-up treatment with a space-maintainer at a later date may be necessary.

Summary

1. Obtain dental radiographs whenever possible before removing natal teeth in order to better advise the parents of complications.
2. Leave natal teeth in the mouth as long as possible in order to decrease the likelihood of removing permanent tooth buds with the natal tooth.
3. Obtain the parents' consent and rule out neonatal hypoprothrombinemia before removing natal teeth.
4. Recommend postoperative evaluation by a pedodontist in order to obtain diagnostic radiographs and necessary treatment.

References

1. Tiecke R: Oral Pathology. New York, McGraw-Hill, 1965