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CASE AND COMMENTARY: PEER-REVIEWED ARTICLE

Why Should Primary Care Clinicians Learn to Routinely Examine the Mouth?

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Abstract

Most medical schools and primary care residency programs do not teach proper oral examination skills. Despite the existence of proven national oral health curricula for medical professionals, many medical trainees and graduates are ill-equipped to identify oral cancers, make proper referrals, avoid unnecessary referrals, or help patients focus on oral disease prevention. This commentary on a case suggests the importance of educating clinicians to promote and evaluate patients' oral health and proposes curricula for and reasonable scope of such training.

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Case

Dr A examines a new patient, NP, and, when looking in this patient's mouth, notices a large mass midline in the hard palate. Dr A refers NP for urgent consultation with Dr O, an oral surgeon. Dr O calls Dr A to explain that NP's palate mass is called a palatine torus: a benign, normal, common bony growth.[1] Dr A feels embarrassed about not knowing this and recalls never really being taught during internal medicine residency or medical school how to properly conduct an oral examination.

Commentary

In the United States, primary care generally includes family medicine, internal medicine, and pediatrics and collectively involves a responsibility for "comprehensive care of unselected patients with undifferentiated problems … regardless of age, gender, illness, or organ system."[2] The World Health Organization expands on this definition of primary care to encompass comprehensive, whole-person care across the lifespan and an effort to address health inequity and social, economic, and environmental determinants of health.[3] Addressing patients' oral health falls within this purview, especially given the prevalence and severity of oral disease in the United States,[4] the potential for oral health problems to exacerbate systemic disease,[5,6] and the fact that disparities in oral disease burden and outcomes intersect with other societal inequities and disproportionately impact vulnerable communities.[4] Furthermore, many people in the United States may see a primary care clinician (PCC) but not a dentist, making the

interaction with their physician perhaps the only chance for an oral exam and preventive advice.

To address unmet oral health needs, robust oral health curricula should be implemented in undergraduate and postgraduate medical training. Evidence-based curricula exist, and some schools/programs are committed to teaching learners to offer full spectrum care. Yet, currently in the United States, medical schools are failing to properly prepare PCCs to routinely and confidently address oral disease and wellness, despite clear evidence of burden of untreated oral disease.[4] In a survey conducted among program directors of 195 family medicine residencies, most programs had only 0 to 3 hours of oral health curriculum.[7] Additional studies yielded similar findings on the dearth of oral health curricula in medical schools and pediatric residency programs.[8,9] Here we argue for the importance of educating clinicians to promote and evaluate patients' oral health and propose curricula for and reasonable scope of such training.

Oral Disease Burden

Oral disease, while largely preventable, affects a substantial portion of the US population, with an incommensurate impact on poorer communities and communities of color.[4] Within these communities, there are increased rates of untreated tooth decay, periodontal disease, and missing teeth.[4] Poor oral health contributes to adverse socioeconomic, psychological, and health outcomes.[4] For example, dental caries is the most pervasive infectious disease in the world,[4] affecting 90% of adults ages 20 to 64 in the United States.[10] Untreated caries "cause local pain and infections, have important social implications such as missed school and failure to gain employment, and can even lead to death."[11] In the United States, caries is more prevalent among individuals of color and those experiencing poverty, with almost twice as many Black and Mexican American adults having untreated cavities as non-Hispanic White adults.[12]

Similarly, almost half of the adults in the United States over the age of 30 have periodontal disease,[5] inflammation of the gingiva extending to the periodontal ligament and alveolar bone. This chronic inflammatory process has far-reaching consequences, including exacerbating diabetes and heart disease and contributing to poorer birth outcomes.[5,6,13] Conversely, uncontrolled diabetes can affect oral inflammation and mouth health.[14] As is the case with caries, there are higher rates of periodontal disease among Black, Hispanic, and poor people in the United States.[12]

Another common oral health problem that contributes to morbidity and mortality is loss of teeth. Complete edentulism before the age of 65 is associated with a 1.5 times increased risk of all-cause mortality.[15] Race and socioeconomic status matter here, too; US adults who are Black or Mexican American, have lower incomes, and have no more than a high school education have higher rates of edentulism.[16]

Oral lesions caused by infections, systemic disease, and other causes are seen by PCCs on a weekly, if not a daily, basis. In particular, PCCs must be aware of oropharyngeal cancer; an estimated 10 850 people in the United States will die of it in 2021.[17] While the incidence of oropharyngeal cancer is similar among Black and White US adults, the average 5-year survival for Black people is about 30% compared to greater than 55% for White people.[17]

Lack of Training

Although many common oral diseases are preventable, many in the United States have limited access to oral health care.[18] Along with social determinants of health, including poverty, racism, and environmental factors,[19] an additional impediment to oral health care is a lack of knowledge, skills, and training among PCCs.[20] If clinicians are not trained to make the oral exam part of a thorough physical exam, do not have the knowledge to discern different oral lesions, and lack the skill to find lesions that are symptom free, many patients will never be properly referred for timely definitive care. Clinicians' lack of dental training is particularly troubling, as tens of millions of Americans have no access to a dentist for various reasons, including a shortfall of approximately 10 000 dentists.[21,22] Physicians like Dr A may be the only clinician a patient sees, and yet many PCCs do not receive training in oral health.

What to Avoid

Primary care clinicians must have adequate skills, knowledge, and training to avoid overdiagnosis, underdiagnosis, and inadequate management of common oral problems.

Overdiagnosis. The case exemplifies overdiagnosis, which resulted in inappropriate referral for a benign condition and unnecessary resource expenditure for the patient, the oral surgeon, and the health care system. Although the oral surgeon in this case accurately diagnosed the lesion and no direct harm (eg, inappropriate or unnecessary intervention) was done to the patient, the case fails to consider that, for some patients, additional appointments can mean hours spent on public transit, loss of income, or other hardships.

Underdiagnosis. In a similar vein, underdiagnosis of oral disease may result in worse health outcomes and increased morbidity and mortality for patients. An important example of a "can't miss" diagnosis is oral leukoplakia, a premalignant oral lesion that is often asymptomatic and frequently presents with subtle exam findings.[23] Many oral cancers and precancers are not easily visualized without a proper oral exam that includes gloves, proper lighting, and manipulation of lips and tongue. Since 5-year oral cancer survival is related to stage at diagnosis, early detection is critical,[23] which underscores the importance of PCCs making this diagnosis and either learning to provide oral biopsies or appropriately referring patients for biopsy.

Management. PCCs should also have knowledge of oral diseases they are able to treat independently—both to ensure that patients receive appropriate therapy and to avoid unnecessary referrals. An inexhaustive list of such conditions includes symptomatic oral lichen planus, herpes labialis, recurrent aphthous stomatitis and oral candidiasis, as well as many systemic diseases with oral manifestations.[24,25,26] In addition, PCCs are in a unique position to offer preventive oral health advice about the importance of daily brushing and flossing and the benefits of reducing tobacco and alcohol use. There are many other aspects of prevention that can be learned and addressed (eg, fluoride varnish for children, dental care safety discussions with pregnant patients), depending on a PCC's state scope of practice laws.

PCCs must also be aware of normal anatomical variants in appearance and pigmentation of the tongue, lips, gingiva, and mouth to avoid inappropriate diagnoses, particularly when caring for patients who have darker skin and darker mucosa. Clinicians often do not receive training that explicitly includes patients with darker skin, which has the potential to make overdiagnosis and underdiagnosis more likely.[27] Lack of

training is especially salient, given the racial disparities in oral disease prevalence and outcomes that exist in the United States.[11,12] Clinical training materials should include cases with images of individuals with dark skin and pigmented mucosa. A recent review found that only 4% to18% of images in dermatology textbooks contain images of dark skin; however, newer editions are adding more.[28]

Navigating Unclear Recommendations

In addition to sufficient knowledge of common oral pathologies and normal variants, requisites for avoiding the potential pitfalls of overdiagnosis, underdiagnosis, and inadequate management include competency in performing a consistent and thorough oral, face, and neck examination; the ability to distinguish between normal and abnormal findings; and an oral cancer examination of patients. However, in the case of screening for oral cancer, the question of whether to examine a patient is complicated by the United States Preventive Services Task Force (USPSTF) recommendations.

The USPSTF recommendations state that the "evidence is insufficient to determine the balance of benefits and harms of screening for oral cancer in asymptomatic adults by primary care providers."[29] These recommendations acknowledge tobacco use, alcohol use, and prior human papillomavirus infection as major risk factors for oral cancer, but they do not offer additional guidance about screening high-risk patients.[29] They could create doubt for PCCs in terms of when and for whom to perform routine oral examinations.

Perhaps the most illuminating statement in the USPSTF recommendations is that there is "inadequate evidence that the oral screening examination accurately detects oral cancer."[29] Although not addressed in the USPSTF report, this conclusion may have less to do with intrinsic limitations of the oral exam and more to do with gaps in physician competency regarding the exam. (Interestingly, evidence of dental professionals' training and interest in and ability to routinely screen and detect oral cancers is mixed.[30,31,32]) Ultimately, PCCs should receive more than the typical 0 to 3 hours of residency training in oral health both so that they can navigate the USPSTF's ambiguous recommendations and perform excellent oral exams and so that they can more effectively address the oral and systemic health needs of their patients. Fortunately, models already exist that can help guide this oral health training.

Training Primary Care Clinicians

Clear core competencies and entrustable professional activities (EPAs) in oral health have been established for medical students and primary care residents.[33] There are 7 EPAs that are relevant to clinical practice, including risk assessment, proper examination of the oral cavity, documentation, patient education, and dental referrals. Meeting the oral health needs of patients in the United States requires that national academic organizations (eg, the American Council of Graduate Medical Education, the Association of American Medical Colleges, the American Academy of Oral Medicine, the Society of Teachers of Family Medicine, the American Academy of Pediatrics, the Society of General Internal Medicine) embrace these guidelines and tie them to educational requirements to ensure that trainees achieve competency in oral health knowledge, skills, and attitudes.

There are also national oral health curricula geared to health professionals, including Smiles for Life (SFL), which has online modules, cases, and a downloadable app.[34] The SFL modules span the life cycle and include Adult Oral Health,[26] The Oral Examination,[35]

and Geriatric Oral Health.[36] The SFL curriculum has been shown to improve clinical practice, especially by initiating caries risk assessments and fluoride varnish applications.[37] Other clinical resources (eg, DynaMed®, UpToDate®) have acknowledged the importance of oral health and have comprehensive sections that can be useful point-of care tools for physicians.[38,39]

Conclusion

Consequences of untreated oral disease are dire for patients, including harm to psychological and financial well-being and increased morbidity and mortality. Untreated oral disease is also an issue of health equity, as the burden of oral disease is disproportionately shouldered by low-income communities and people of color. Thus, it is unethical not to train medical students and primary care residents in oral health. Consider this possible continuation of the case:

After inappropriately referring his patient with an asymptomatic palatal torus to an oral surgeon, Dr A recognizes the gaps in his oral health knowledge, skills, and training. As a faculty member at an internal medicine residency program, he also realizes that the residency training does not include any oral health curriculum. Adamant about providing exceptional care for patients and training for residents, Dr A becomes a champion and advocate for oral health education at his institution. He completes the Smiles for Life online oral health curriculum (or similar program) and makes this curriculum a formal component of the residency training. He also partners with local dentists, dental hygienists, and oral surgeons to provide hands-on clinical opportunities for residents. Because of Dr A's efforts, he, his trainees, and his colleagues feel more confident performing oral exams, diagnosing oral lesions, and thus providing better quality care to their patients.

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Editor's Note

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Conflict of Interest Disclosure

Dr Silk is a co-founder of Smiles for Life. Dr Feierabend-Peters had no conflicts of interest to disclose.

The people and events in this case are fictional. Resemblance to real events or to names of people, living or dead, is entirely coincidental. The viewpoints expressed in this article are those of the author(s) and do not necessarily reflect the views and policies of the AMA.

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