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Letter to the editor

Could we benefit from oral self-examination during the COVID-19 pandemic?



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Chronic oral lesions and oral cancer are a concern among professionals of Oral Medicine and Oral Diagnosis during this coronavirus pandemic and its restrictions. Time will be needed for health providers, especially the public system, to adjust the strategy for seeing patients with oral lesions, considering the high risk of virus dissemination, and the lack of vaccine or treatment available. Although many countries are beginning to ease restrictions and returning to “normal”, other countries are still waiting for the peak of the disease, like Brazil, where, after more than two months of social distancing, there is no prediction for the end of this strategy. Everyone agrees that we cannot wait to see high-risk patients develop oral cancer.

Meanwhile, oral self-examination, together with information about Oral Potentially Malignant Disorders (OPMD) and risk factors for oral cancer could be valuable during this pandemic time. While some studies have shown no benefit of oral self-examination in detecting oral mucosal lesions, including OPMD [1], other authors have concluded that, despite its low sensitivity, particularly for detecting OPMD, oral self-examination it may be effective to improve awareness of oral cancer and early detection of lesions [2]. In addition, oral self-examination can enable patients to detect asymptomatic cancers at early stages [3]. On the other hand, many patients may neglect asymptomatic, small OPMD and oral cancer lesions, and go to the dentist when disease is already at advanced stages. In fact, oral self-examination alone, without the knowledge about its importance and risk factors for oral cancer, would not be effective; however, in a time of pandemic restrictions, it could be of great help in detecting malignant lesions, especially in countries where social distancing has no time to end. Patients are afraid of visiting the dentist because of coronavirus, and oral self-examination combined with education, may allow identification of lesions that would either justify the anticipation of the visit, particularly in groups at high risk of oral cancer [4], or resolve in a few days (e.g. traumatic lesions) without any specific treatment or urgent need to see a dentist for a diagnosis.

Therefore, in this COVID pandemic, it is reasonable to conclude that oral self-examination could minimize the distancing-related problem imposed by the pandemic and be useful in the early detection of oral cancer. In this context, tele (oral) medicine gains importance, as a valuable tool in the initial assessment of the patient and in the diagnosis of oral medicine conditions [5]. This could also be very useful for patients

who have already received face-to face information about oral cancer risk factors and how to carry out oral self-examination [6], and for patients already diagnosed with oral mucosal diseases. Other options include video calling by WhatsApp, or any other free video call apps. Researchers from University of São Paulo, in São Carlos, a city located in southeast Brazil, developed a computational platform called Experience Sampling and Programmed Intervention Method (ESPIM) to support data collection and remote intervention planning [7]. The infrastructure is represented by a model that provides authorship and the generation of intervention programs with personalized content, through an authoring web interface. These programs are interactive multimedia documents, displayed on smartphones/tablets through a mobile application. The programs planned in the web interface by the domain specialists are launched at specific times, defined by these specialists during their creation [8]. The ESPIM platform can be used in this context, to enable data collection and remote interventions with individuals with the potential to develop oral cancer. Oral health professionals can create intervention programs containing, for example, videos with instructions, illustrative images and /or questionnaires that will be used with the target population in diagnosis and remote intervention.

In conclusion, this pandemic time is teaching us different ways to deal with health assistance, and we need to find new, effective and applicable technological tools to continuously supporting our patients in a safe way.

Author contributions

A.C. Motta contributed to the design, analysis, interpretation of data, and drafted the manuscript; K.R.H. Rodrigues drafted the manuscript; and both authors contributed to the preparation, editing and critical review of the manuscript.

Declaration of Competing Interest

The authors have no potential conflict of interest.

References

- [1] Ghani WMN, Razak IA, Doss JG, Ramanathan A, Tahir Z, Ridzuan NA, et al. Mouth self-examination as a screening tool for oral potentially malignant disorders among a high-risk Indigenous population. *J Public Health Dent* 2019;79:222–30. <https://doi.org/10.1111/jphd.12313>.
- [2] Elango KJ, Anandkrishnan N, Suresh A, Iyer SK, Ramaiyer SK, Kuriakose MA. Mouth self-examination to improve oral cancer awareness and early detection in a high-risk population. *Oral Oncol* 2011;47:620–4. <https://doi.org/10.1016/j.oraloncology.2011.05.001>.
- [3] Peacock ZS, Pogrel MA, Schmidt BL. Exploring the reasons for delay in treatment of oral cancer. *J Am Dent Assoc* 2008;139:1346–52. <https://doi.org/10.14219/jada.archive.2008.0046>.
- [4] Gomez I, Warnakulasuriya S, Varela-Centelles PI, López-Jornet P, Suárez-Cunqueiro P, Diz-Dios P, et al. Is early diagnosis of oral cancer a feasible objective? Who is to blame for diagnostic delay? *Oral Dis* 2010;16:333–42. <https://doi.org/10.1111/j.1601-0825.2009.01642.x>.
- [5] Villa A, Sankar V, Shiboski C. Tele(oral)medicine: A new approach during the COVID-19 crisis. *Oral Dis* 2020. <https://doi.org/10.1111/odi.13364>.
- [6] Jornet PL, Garcia FJ, Berdugo ML, Perez FP, Lopez APF. Mouth self-examination in a population at risk of oral cancer. *Aust Dent J* 2015;60:59–64. <https://doi.org/10.1111/adj.12274>.
- [7] Zaine I, Rodrigues KRH, da Cunha BCR, Viel CC, Orlando AF, Machado Neto OJ, et al. ESPIM: An Ubiquitous Data Collection and Programmed Intervention System using ESM and Mobile Devices. *Proceedings of the 22nd Brazilian Symposium on Multimedia and the Web (Webmedia '16)* New York, NY, USA: Association for Computing Machinery; 2016. p. 13–4. <https://doi.org/10.1145/2976796.2988222>.
- [8] Viel CC, Rodrigues KRH, Zaine I, da Cunha BCR, Scalco LF, Pimentel MGP. Personalized Ubiquitous Data Collection and Intervention as Interactive Multimedia Documents. *Proceedings of the 2017 ACM Symposium on Document Engineering (DocEng '17)* New York, NY, USA: Association for Computing Machinery; 2017. p. 223–6. <https://doi.org/10.1145/3103010.3121046>.

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