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LETTER TO THE EDITOR

Color-Doppler ultrasound in the evaluation of oral lesions

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Dear Editor,

We would like to draw the attention of the scientific community on the role of ultrasound (US) examination as diagnostically useful tool for the prompt and safe management of oral vascular malformations.

As widely demonstrated, the use of US for proper diagnosis and management of oral lesions is advantageous compared to other conventional techniques [1, 2].

Indeed, as already reported previously, vascular anomalies may be presenting typical features at US. Therefore, the US is an effective tool to identify the presence and the type of vascularization of the lesion; the identification of arterial, venous or mixed vascularization is crucial provide differential diagnosis of lesions which needed to be treated or only to be followed-up. The prompt identification of the typical malformation features is pivotal for the subsequent management of the lesion and the evaluation of their prognosis [3].

Furthermore, US also can be used as an additional tool also during the treatment of vascular malformations by means of intralesional photocoagulation (ILP) technique using a laser. In fact, as demonstrated by Miyazaki et al. [4], the ILP is indicated for treatment of oral deep venous malformations. ILP is a blind operation with a risk of involuntary destruction of surrounding normal tissues; so the authors for a safer and less invasive approach of ILP prefer now routinely to use guidance by means of US using a mini-probe, thus transforming a blind operation into a visual operation. This approach determines the following advantages: safe laser fiber insertion, appropriate laser irradiation, and intraoperative coagulation evaluation [5].

Recently, new ultrasound probes, handier and smaller, have proposed to be provide efficient approach of oral cavity. The ultrasound transducers, smaller and with a high frequency range (3–22 MHz) can overcome the disadvantage of diagnosing oral lesions in patient with trismus, sensitive gag reflexes or children, in which it is difficult to use a normal probe.

With this technique of intraoral US, it is also possible to identify and study salivary gland calculi, even of small size. In fact, it has been showed that it also allows to examine the untangled submandibular duct even when too small. Woojin Cho et al. [6] in their study demonstrated that the intraoral US is a useful tool for diagnosis of salivary calculi also in patients with suspicious symptoms of submandibular canal calculi.

In addition, some authors showed that US allowed a correct diagnosis of tonsilloliths, characterized by the deposition of small calcific structures within the tonsillary parenchyma [6].

The authors concluded that US can be easily performed allowing physicians to detect small, non-calcified or invisible lesions that are difficult to be diagnosed with conventional methods such as scialography, CT and MRI. In addition, further possible perspectives may be opened by the use of ultrasound contrast agents and US-elastography as already proved in other fields [6–9]. This is why we propose to verify the effectiveness of the new mini-probes for more accurate vascular oral malformation diagnosis and treatment and for early clinical evaluation of oral mucosal extension of potentially malignant lesions of the oral cavity.

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Compliance with ethical standards

Conflict of interest The authors declare that there is no conflict of interest regarding the publication of this paper.

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