Introduction

The majority of oral pigmentation are benign lesions such as nevi, melanotic macules, melanoacanthomas or amalgam tattoos [1,2]. Conversely, mucosal melanomas are rare, but often lethal [2]. Reflectance confocal microscopy (RCM) allows imaging with cellular resolution and has excellent diagnostic accuracy to diagnose cutaneous melanoma [3]. However, RCM can be challenging to perform in the oropharynx using the current probes.
During imaging, the patient was awake and tolerated the procedure well. Superficially, RCM showed an overall normal epithelium with focal areas of epithelial disarray (Figure 2a, b). Deeper, we identified increased vascularity (Figure 2c) and numerous large dendritic cells admixed with plump cells and bright dots (Figure 2d). In light of her past medical history, the lesion was biopsied to exclude a primary or metastatic melanoma. Histopathologic analysis revealed fine black granular pigment within the dermis suggestive of an amalgam tattoo (Figure 2e).

Conclusions
In the last decade, RCM imaging has expanded its use beyond the skin and has been applied to the oral and genital mucosa, specifically to distinguish mucosal melanomas from benign lesions [1,6,7]. Indeed, RCM features suggesting mucosal melanomas include suprabasal dendritic or large round cells, dendritic cells in the epithelial-connective tissue junction, and epithelial disarray [1,6,7]. In our case, RCM showed numerous suprabasilar dendritic cells along with epithelial disarray. However, these findings occurred focally, and we also noted numerous bright dots and plump cells suggesting a reactive lymphohistiocytic infiltrate. To better characterize these findings, immunohistochemical stains for melanocytes and Langerhans cells were performed. These showed normal numbers of melanocytes within the basal and suprabasilar epithelium (Figure 2f).
No previous studies have reported the RCM findings of amalgam tattoos. Although the presence of amalgam granules may not be visible with RCM since they are located deeper than 200-300 μm, the presence of bright dots (lymphocytes) and plump cells (macrophages), with suprabasal dendritic cells, is suggestive of a reactive process, such as an amalgam tattoo. To conclude, we have presented the first case of amalgam tattoo imaged with RCM using a new telescopic probe.

Langerhans cells are difficult to distinguish from melanocytes on RCM [8], and have a low specificity on the oral mucosa since they occur in normal mucosa and in reactive processes such as amalgam tattoos [1]. Histologically amalgam tattoos reveal small granules deposited between the collagen fibers and can present with a foreign-body reaction [2].

Figure 2. Reflectance confocal microscopy images (panels a – d) and its histopathologic correlates (panels e – f). Superficial confocal videomosaic showing normal epithelial cells with prominent nucleoli (panel a, white rectangle and inset), and a focal area of epithelial disarray (panel b). Confocal videomosaic obtained at the epithelial junction showing increased vascularity (arrowheads, panel c) and an area with numerous large atypical dendritic cells (panel d). Hematoxylin and eosin stain of the lesion showed fine black granular pigment within the stroma in the dermis (panel e, original magnification x 40). Immunohistochemical stain for A103 showed scattered melanocytes in the basal layer and in the epidermis (panel f, original magnification x 20). Immunohistochemical stain for CD1a highlighted numerous Langerhans cells throughout the epidermis (panel g, original magnification x 20). [Copyright: ©2017 Yélamos et al.]
Although the presence of epidermal disarray and suprabasilar dendritic cells on RCM was suggestive of melanoma, the coexisting presence of bright dots and plump cells brings into consideration the differential diagnosis a reactive process such as an amalgam tattoo. However, since the RCM features of mucosal melanomas and other mucosal conditions are limited, larger studies are needed to increase the meaning of using this new probe with high-resolution images.

Acknowledgements
We would like to thank Dr. Marco Ardigò for his thoughtful feedback regarding this case.

References
1. Maher NG, Solinas A, Scolyer RA, Guitera P. In vivo reflectance confocal microscopy for evaluating melanoma of the lip and its differential diagnoses. Oral Surg Oral Med Oral Pathol Oral Radiol. 2017;123(1):84-94.
2. Lundin K, Schmidt G, Bønde C. Amalgam tattoo mimicking mucosal melanoma: a diagnostic dilemma revisited. Case Rep Dent. 2013;2013:787294.
3. Pellacani G, Guitera P, Longo C, Arramidis M, Seidenari S, Menzies S. The impact of in vivo reflectance confocal microscopy for the diagnostic accuracy of melanoma and equivocal melanocytic lesions. J Invest Dermatol. 2007;127(12):2759-2765.
4. Peterson G, Zanoni DK, Migliacci J, Cordova M, Rajadhyaksha M, Patel S. Progress in reflectance confocal microscopy for imaging oral tissues in vivo. Proceedings of SPIE Photonics West. 2016;9689.
5. Kose K, Cordova M, Duffy M, Flores ES, Brooks DH, Rajadhyaksha M. Video-mosaicing of reflectance confocal images for examination of extended areas of skin in vivo. Br J Dermatol. 2014;171(5):1239-1241.
6. Debarbieux S, Perrot JL, Erfan N, et al. Reflectance confocal microscopy of mucosal pigmented macules: a review of 56 cases including 10 macular melanomas. Br J Dermatol. 2014;170(6):1276-1284.
7. Uribe P, Collgros H, Scolyer RA, Menzies SW, Guitera P. In vivo reflectance confocal microscopy for the diagnosis of melanoma and melanotic macules of the lip. JAMA Dermatol. 2017.
8. Hashemi P, Pulitzer MP, Scope A, Kovalyshyn I, Halpern AC, Marghoob AA. Langerhans cells and melanocytes share similar morphologic features under in vivo reflectance confocal microscopy: a challenge for melanoma diagnosis. J Am Acad Dermatol. 2012;66(3):452-462.