

Dermoscopic Features of Lower Lip Squamous Cell Carcinoma: A Descriptive Study

Abstract

Aim: Dermoscopic features of cutaneous squamous cell carcinoma (SCC) have been well described; however, there are a few studies focused on the dermoscopic aspect of lip SCC. In this study, we aimed to identify dermoscopic findings of lower lip SCC. **Materials and Methods:** The clinical and histopathologic features, dermoscopic images, and demographic data of the patients with histologically approved lip SCC were retrospectively evaluated. **Results:** A total of 10 lesions were enrolled in the study. Milky red structureless background (100%) and keratin scale (100%) were present in all the lesions. Blood spots on thick keratin scale were observed in eight lesions. Seven lesions showed white structureless areas. Two lesions exhibited ulceration and one of the lesions had structureless brown pigmentation. The most common vascular pattern observed was polymorphous vascular pattern (60%). **Conclusion:** White and milky red structureless areas, blood spots on thick keratin scale, and polymorphous vascular pattern are the main dermoscopic clues to lip SCC. The presence of these findings should direct the clinician to the possibility of SCC. The dermoscopic findings observed may also reflect histological grade of the lesion.

Keywords: Dermoscopy, lower lip, squamous cell carcinoma

Introduction

Squamous cell carcinoma (SCC) is the most common malignant tumor of the lip.^[1-3] Lip SCC accounts for 12% of all cancers of the head and neck region, and the affected site is lower lip in a majority of lip SCCs. Lip cancer also comprises approximately 25% of all oral cavity cancers.^[4]

Chronic exposure to ultraviolet light solar radiation is the main risk factor of lip SCC. Sociodemographic status, immunosuppression, alcohol consumption, cigarette smoking, and genetic susceptibility are the other known risk factors.^[4] Dermoscopy is a widely used noninvasive diagnostic method improving early diagnosis of many dermatological diseases. Dermoscopic features of cutaneous SCC have been well described; however, a few studies reported the dermoscopic findings of lip SCC.^[5-7]

Here, we aimed to identify the dermoscopic findings of lower lip SCC.

Materials and Methods

In this retrospective observational study, data on histologically approved lip SCC

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: reprints@medknow.com

were collected, from December 2017 to November 2018. For each collected lesion, clinic features, histological findings, and dermoscopic images were recorded. Dermoscopic images were captured with a polarized handheld dermoscope (DermLite Pro hr II and DermLite 4; 3 Gen LLC; San Juan Capistrano, CA, USA). All the procedures followed the Declaration of Helsinki, and the study was approved by the local clinical research ethic committee. The collected data were analyzed using descriptive statistics.

Results

In total, 13 histologically approved lower lip SCCs were collected in this study. Three lesions were excluded from the study because of inadequate dermoscopic image quality. Finally, a total of 10 lesions were enrolled. The mean age of the patients was 67 years and the majority were male ($n = 9$; 90%). Seven (70%) patients had a history of cigarette smoking. The average duration of history of smoking was 32 years. The mean disease duration was 8 months. The mean size of the lesions was 1.2 cm in diameter. Seven (70%)

How to cite this article: Elmas ÖF, Metin MS, Kilitçi A. Dermoscopic features of lower lip squamous cell carcinoma: A descriptive study. Indian Dermatol Online J 2019;10:536-41.

Received: November, 2018. **Accepted:** December, 2018.

Ömer Faruk Elmas,
Mahmut Sami
Metin¹,
Asuman Kilitçi²

Department of Dermatology and Venereology, Faculty of Medicine, Ahi Evran University, Kırşehir; ¹Department of Dermatology, Batman Medical Park Hospital, Batman, ²Department of Pathology, Ahi Evran University, Faculty of Medicine, Kırşehir, Turkey

Address for correspondence:

Dr. Ömer Faruk Elmas,
Faculty of Medicine,
Ahi Evran University,
Kırşehir, 40000, Turkey.
E-mail: dromerfarukelmas@gmail.com

Access this article online

Website: www.idoj.in

DOI: 10.4103/idoj.IDOJ_435_18

Quick Response Code:



of 10 lesions showed an exophytic nodular morphology [Figures 1 and 2]. The remaining three (30%) lesions had a flat appearance. Ulceration was present in two lesions.

When it comes to dermoscopy, milky red structureless background (100%) and keratin scale (100%) were present in all the lesions [Figures 3-7]. Blood spots on thick keratin scale were present in eight (80%) lesions [Figures 3-5 and 7]. White structureless areas were seen in seven (70%) lesions [Figures 3 and 5]. The most common vascular pattern was polymorphous pattern ($n = 6$; 60%) with a combination of looped, coiled, and dotted vessels [Figures 4 and 6]. A combination of milky red structureless areas, blood spots on thick keratin scale, and polymorphous vascular pattern was observed in five (50%) lesions. Only one lesion showed white halo [Figure 7]. Ulceration [Figure 6] was present in two lesions and one of the lesions showed structureless brown pigmentation [Figure 6].

The histopathological sections showed an invasive SCC in nine lesions [Figures 8-10]. Only one of the lesions

was considered to be keratoacanthoma like SCC. While four lesions showed well differentiation, six lesions had moderate differentiation. The clinical, dermoscopic, and histological characteristics of the lesions are summarized in Table 1.

Discussion

Dermoscopic features of cutaneous SCC have been well described. Rosendahl *et al.* reported that keratin, surface scale, blood spots, white structureless zones, white circles, and coiled vessels are the most common dermoscopic findings in both invasive SCC and keratoacanthoma.^[5] Lallas *et al.* also found that linear irregular vessels, scales or keratin, bleeding, and white structureless areas are the most frequently observed dermoscopic findings in cutaneous SCC cases.^[7] However, there are a few studies



Figure 1: Exophytic nodular lesion localized on the lower lip of a male patient

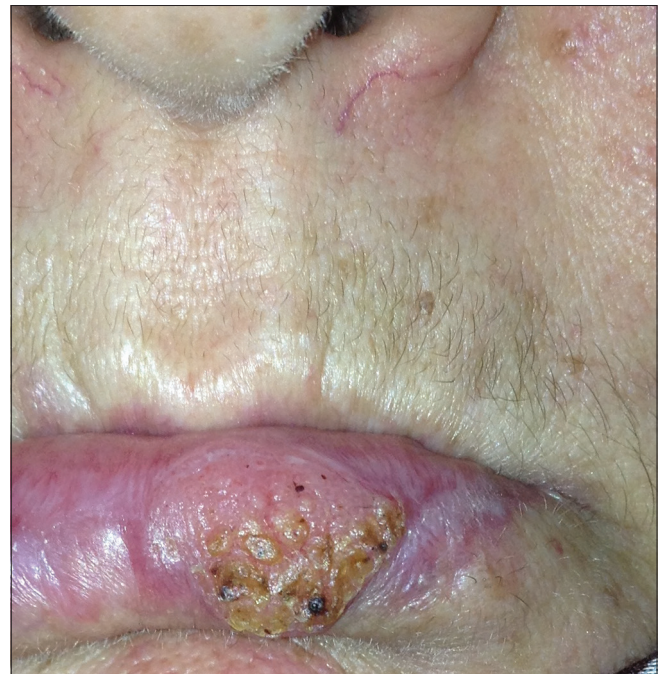


Figure 2: Elevated nodular lesion localized on the lower lip of a female patient

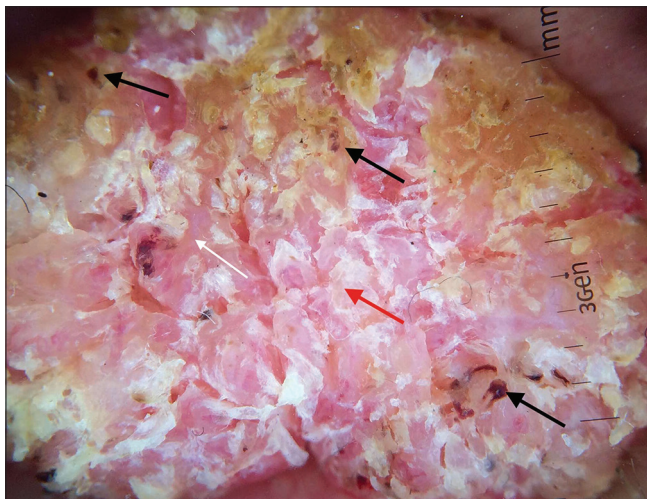


Figure 3: Milky red structureless (white arrow), blood spots on keratin scale (black arrows), white fine scales (red arrow)



Figure 4: Blood spots on keratin scale (black arrow), white structureless background (white arrow), and polymorphous vascular pattern with complex looped (red arrow), dotted (blue arrow), and coiled (yellow arrows) vessels

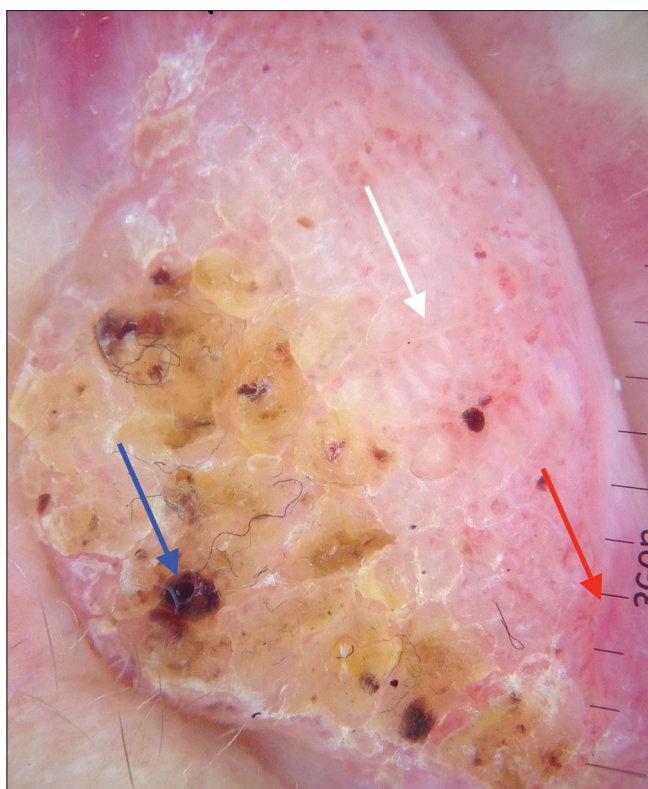


Figure 5: White structureless background (white arrow), blood spots on keratin scale (blue arrow), and milky red structureless area (red arrow)

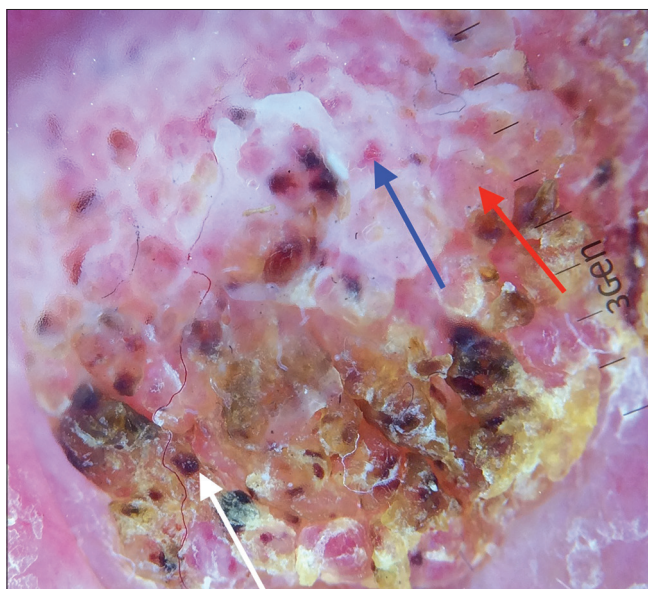


Figure 7: Centered coiled vessels surrounded with white halo (blue arrow), milky white structureless background (red arrow), and blood spots on keratin scale (white arrow)

investigating dermoscopic features of lip SCC.^[6] The study by Benati *et al.* is the only original study focused on this subject. Benati *et al.* showed that lip SCCs are characterized by the presence of polymorphous vessels, scales, white structureless areas, white halos, and white circles.^[6] In a case study, Güleç described dermoscopic findings of a case



Figure 6: (a) Milky red structureless background (grey arrow), polymorphous vascular pattern with looped (white arrow), coiled (red arrow), and dotted (blue arrow) vessels, ulceration (black arrow). Structureless brown pigmentation is also visible (brown arrow). (b) Clinical appearance of the same lesion, Histopath magnification is (H&EX4)

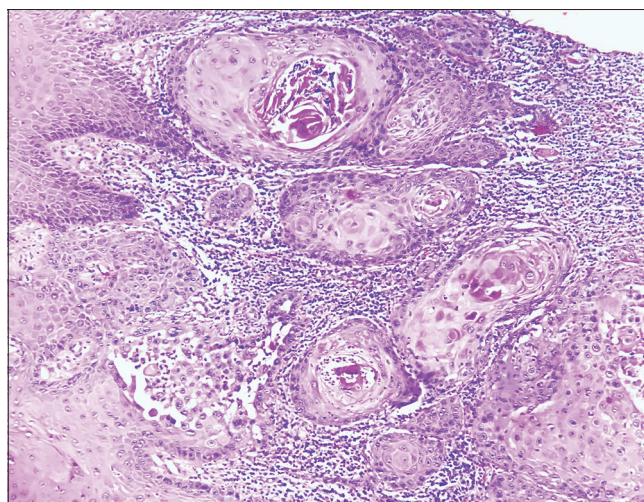


Figure 8: Ulceration and invasive foci of squamous cell carcinoma are visible (×4, H and E)

of lip SCC. In that report,^[8] keratin masses, polymorphous vessels, and white structureless zones were the main clues.

In this study, the main dermoscopic features of lip SCC were white and milky red structureless areas, blood spots on thick keratin scale, and polymorphous vascular pattern.

The histological counterpart of white structureless areas is highly keratinized squamous carcinoma cells massed under the stratum corneum and that is why white structureless areas reflect well differentiation.^[9] We also observed that predominance of white structureless areas is associated with well differentiation.

In SCC, predominance of red color is thought to be associated with the presence of dense vascularity.^[7] In a study by Lallas *et al.*, predominance of red color was found to be associated with poor differentiation.^[7] In the

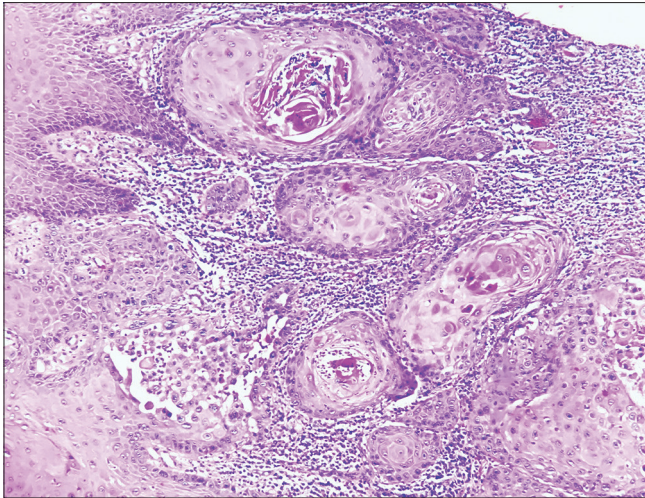


Figure 9: Invasive tumor islands and reactive inflammatory infiltration are clearly seen (×20 H and E)

present study, none of the cases was classified as poorly differentiated; however, predominance of milky red structureless areas was found to be associated with moderate differentiation.

Blood spots on keratin scale have previously been described for cutaneous SCC.^[5] In this study, eight lesions showed blood spots on keratin scale. In the study by Benati *et al.*, none of the cases showed this finding.^[6] They showed that ulceration was present in almost all lesions of SCC.^[6] In our study, only two lesions showed ulceration.

Polymorphous vascular pattern is thought to be associated with dilated superficial dermal vessels. In this study, the majority of the lesions showed polymorphous vascular pattern similar to that reported in Benati *et al.*'s study.^[6]

Surface keratin seen on dermoscopy corresponds to hyperkeratosis.^[9] In this study, all lesions of SCC showed thick keratin scale which is thought to be associated with well differentiation.

It seems that cutaneous and lip SCCs mainly share the same dermoscopic features. In our study, however, none of the cases showed white circles which is considered to be one of the major dermoscopic clues to cutaneous SCC. The white circles seen on dermoscopy reflect acanthosis and hypergranulosis associated with squamous carcinoma cells invading hair follicles.^[9] That is why the white circles cannot be observed in lip SCC.

In this study, one of the lesions showed structureless brown pigmentation. Pigmented SCC is very rare and there is no report identifying a lip localized pigmented SCC.^[10-12] de Giorgi *et al.* described a case of cutaneous pigmented SCC localized on the skin above the upper lip of a woman.^[12]

There are a few case studies reporting that dermoscopic features of mucosal SCC exist in the literature. Bajpai and Gupta described dermoscopic features of a tongue SCC.^[13]

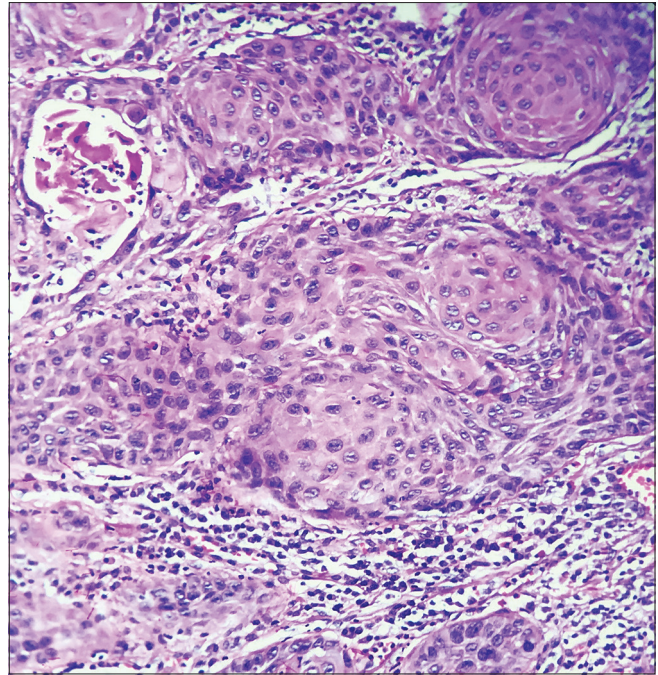


Figure 10: Prominent nuclear atypia and mitosis (×40, H and E)

In this case report, central structureless areas, white circles, ulceration, blood spots, polymorphous vessels, and keratin plugs were the dermoscopic features identified. In the case study by Güleç, dermoscopic features of a tongue SCC was reported to be similar to those of cutaneous SCC. She stated that the white circles which correspond to keratin-filled follicular ostia were not identified in the lesion, because of the lack of hair follicles on the oral mucosa.^[14] It seems that Bajpai and Gupta misinterpreted white clods as white circles in their case study.^[13] We suggest that dermoscopic features of lip SCC may be extrapolated to mucosal SCCs in general due to histological similarity of lip and mucosal tissues.

Actinic cheilitis, plasma cell cheilitis, and viral warts should be considered in differential diagnosis of lip SCC. Ito *et al.* reported that ill-defined borders, vascular telangiectasia, white projections, and island-like structures surrounding the ulcerous areas are the dermoscopic features of actinic cheilitis.^[15] The border regularity with vascular enlargement and proliferation were identified to be the dermoscopic features of plasma cell cheilitis.^[15] Dermoscopy of viral warts is characterized by dotted vessels surrounded with white halos.^[16] We suggest that dermoscopic examination can be useful in differential diagnosis of lip SCC which shows peculiar dermoscopic findings mentioned above.

In conclusion, we want to emphasize some point regarding this study as follows:

1. White and red structureless areas, blood spots on thick keratin scale, and polymorphous vascular pattern were the main dermoscopic clues to lip SCC. The presence of these findings should direct the clinician to possibility of SCC
2. Blood spots on keratin scale were present in 80% of the

Table 1: Clinical and dermoscopic characteristics of the cases

Case	Clinical presentation	Dermoscopic features	Histological findings	Histological grading
1	Exophytic nodular lesion	White and milky red structureless, ulceration, blood spots on thick scale, polymorphous vessels including looped, coiled, and complex looped vessels.	Prominent keratinization, focal ulceration, invasive squamous tumor islands, mild to moderate atypia, few mitoses, superficial dermal dilated vessels.	Well differentiated
2	Exophytic ulcerated nodular lesion	White and milky red structureless, blood spots on thick scale, fine scale, ulceration, dotted and coiled vessels, white thick lines.	Prominent keratinization, focal ulceration, invasive squamous tumor islands with mild to moderate atypia, few mitoses.	Well differentiated
3	Exophytic nodular lesion	Milky red structureless, blood spots on thick scale, fine scale, thick white lines, coiled, and dotted vessels	Focal keratinization, invasive squamous tumor islands with moderate to severe atypia, reactive inflammatory infiltration, numerous mitoses including atypical ones.	Moderately differentiated
4	Exophytic nodular lesion	Milky red structureless, blood spots on thick scale, fine scale, thick white lines, coiled and dotted vessels.	Focal keratinization, invasive squamous tumor islands with moderate atypia, reactive inflammatory infiltration, numerous mitoses including atypical ones.	Moderately differentiated
5	Exophytic nodular lesion	White and milky red structureless, thick scale, fine scale, red clods, polymorphous vessel pattern with coiled, looped, and dotted vessels.	Prominent keratinization, invasive squamous tumor islands, mild to moderate atypia, few mitoses, superficial dermal dilated vessels.	Well differentiated
6	Exophytic horny lesion	White and milky red structureless, blood spots on thick scale, polymorphous vessels including looped, coiled, and cherry blossom-like vessels.	Central crater filled with keratin, irregular infiltrating squamous islands, mild atypia, few mitoses, marked inflammatory infiltrate, dilated vessels in deep dermis.	Well differentiated
7	Flat ulcerated lesion	White and milky red structureless, ulceration blood spots, brown structureless pigmentation, scale, blood spots, polymorphous vessels including irregular serpentine, dotted, coiled, and looped vessels.	Focal keratinization, invasive squamous tumor islands, moderate atypia, few mitoses, superficial dermal dilated vessels, superficial dermal melanophages.	Moderately differentiated
8	Exophytic nodular lesion	Milky red structureless, blood spots on thick scale, coiled vessels.	Focal keratinization, invasive squamous tumor islands, moderate to severe atypia, numerous mitoses including atypical ones.	Moderately differentiated
9	Flat lesion	White and milky red structureless, blood spots on thick scale, polymorphous vessels including looped, coiled, and dotted vessels.	Prominent keratinization, invasive squamous tumor islands, mild to moderate atypia, few mitoses.	Well differentiated
10	Flat lesion	White and milky red structureless, blood spots on thick scale, polymorphous vessels including looped, coiled, and dotted vessels.	Focal keratinization, invasive squamous tumor islands, moderate atypia, numerous mitoses, prominent superficial dermal dilated vessels.	Moderately differentiated

cases and have previously been described for cutaneous SCC. We suggest that this finding is also a strong clue to lip SCC

- White circles are known to be one of the essential dermoscopic features of cutaneous SCC. In this study, however, this finding was not identified in any lesion
- The presence of thick keratin scale and predominance of white structureless areas seen on dermoscopy reflect well differentiation
- Here, to the best of our knowledge, we described the first lip localized pigmented SCC with the dermoscopic features
- Small number of patients and the lack of a control group are the main limitations of our study.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

- Hasson O. Squamous cell carcinoma of the lower lip. *J Oral Maxillofac Surg* 2008;66:1259-62.
- Strieder L, Coutinho-Camillo CM, Costa V, da Cruz Perez DE, Kowalski LP, Kaminagakura E. Comparative analysis of three histologic grading methods for squamous cell carcinoma of the lip. *Oral Dis* 2017;23:120-5.
- Batista AC, Costa NL, Oton-Leite AF, Mendonça EF, Alencar R d CG, Silva TA. Distinctive clinical and microscopic features of squamous cell carcinoma of oral cavity and lip. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2010;109:74-9.
- Borges J-F-P, Lanaro N-D, Bernardo V-G, Albano RM, Dias F, de Faria PA, *et al.* Lower lip squamous cell carcinoma in patients with photosensitive disorders: Analysis of cases treated at the Brazilian National Cancer Institute (INCA) from 1999 to

2012. *Med Oral Patol Oral Cir Bucal*. 2018; 23:7-12.
5. Rosendahl C, Cameron A, Argenziano G, Zalaudek I, Tschandl P, Kittler H. Dermoscopy of squamous cell carcinoma and keratoacanthoma. *Arch Dermatol* 2012;148:1386-92.
 6. Benati E, Persechino F, Piana S, Argenziano G, Lallas A, Moscarella E, *et al.* Dermoscopic features of squamous cell carcinoma on the lips. *Br J Dermatol* 2017;177:41-3.
 7. Lallas A, Pyne J, Kyrgidis A, Andreani S, Argenziano G, Cavaller A, *et al.* The clinical and dermoscopic features of invasive cutaneous squamous cell carcinoma depend on the histopathological grade of differentiation. *Br J Dermatol* 2015;172:1308-15.
 8. Güleç AT. Diagnosing squamous cell carcinoma of the lip using dermoscopy. *J Am Acad Dermatol* 2017;76:82-3.
 9. Kittler H, Rosendahl C, Cameron A, Tschandl P. *Dermatoscopy. An Algorithmic Method Based on Pattern Analysis*. Austria: Facultas Verlags and Buchhandels AG, Universitätsverlag; 2011.
 10. Morgan MB, Lima Maribona J, Miller RA, Kilpatrick T, Tannenbaum M. Pigmented squamous cell carcinoma of the skin: Morphologic and immunohistochemical study of five cases. *J Cutan Pathol* 2000;27:381-6.
 11. Kaur M, Rana APS. Pigmented squamous cell carcinoma. *Indian J Case Rep* 2007;3:113-4.
 12. de Giorgi V, Alfaioli B, Papi F, Janowska A, Grazzini M, Lotti T, *et al.* Dermoscopy in pigmented squamous cell carcinoma. *J Cutan Med Surg* 2009;13:326-9.
 13. Bajpai M, Gupta S. Dermoscopy of oral squamous cell carcinoma. *J Ayub Med Coll Abbottabad* 2018;30:315-6.
 14. Güleç AT. Dermoscopic features of squamous cell carcinoma of the tongue: It looks similar to cutaneous squamous cell carcinoma. *J Am Acad Dermatol* 2016;75:534.
 15. Ito T, Natsuga K, Tanimura S, Aoyagi S, Shimizu H. Dermoscopic features of plasma cell cheilitis and actinic cheilitis. *Acta Derm Venereol* 2014;94:593-4.
 16. Zalaudek I, Argenziano G, Di Stefani A, Ferrara G, Marghoob AA, Hofmann-Wellenhof R, *et al.* Dermoscopy in general dermatology. *Dermatology* 2006;212:7-18.