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RESEARCH ARTICLE

CROSS-SECTIONAL OBSERVATIONAL STUDY TO DESCRIBE THE MUCOSCOPIC FEATURES OF PHYSIOLOGICAL CONDITIONS OF MUCOSAL DISORDERS IN CENTRAL INDIA

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ABSTRACT

Dermatoscope is a non-invasive diagnostic imaging tool with inbuilt illumination and magnifying systems that enables for visualization of superficial and deeper structures, and various pigmentary and vascular patterns of the skin, nail, hair and mucosa. Dermatoscopy of mucosa is known as mucoscopy. Here is an attempt to describe clinical and mucoscopic features of various mucosal physiological conditions attending dermatology OPD. Single center, cross sectional, observational study was conducted in outpatient department of dermatology, at central India and sample size is based on convenience purposive method. Any physiological mucosal more than 18 years were included. After proper informed consent using Dermlite DL4 dermatoscope. Mucoscopic features of Fordyce spots, pearly penile papules, vestibular papillomatosis, lingual varicosities, pigmented fungi form papillae of tongue were described.

INTRODUCTION

Dermatoscope is a non-invasive diagnostic imaging tool with inbuilt illumination and magnifying systems that enables for visualization of superficial and deeper structures, and various pigmentary and vascular patterns of the skin, nail, hair and mucosa. Dermatoscopy of mucosa is known as mucoscopy. Dermatoscope employed usually are handheld which provides magnification up to 10 times. USB Dermoscopy has a magnification up to 100-200 times. Polarized, nonpolarized, contact and noncontact methods are used to visualize the lesions. Polarized dermoscopy is useful in visualizing the deeper structure and pathology. Nonpolarized mode for analyzing superficial anatomy and its abnormalities. Mucosal lesions are abnormal alteration in color, surface, presence of swelling, or loss of integrity of the mucosal and semimucosal surface.

Aim and objective: To describe clinical and mucoscopic features of various mucosal physiological conditions attending dermatology OPD

MATERIALS AND METHODOLOGY

Single center, cross sectional, observational study was conducted in outpatient department of dermatology, at central India and sample size is based on convenience purposive method.

Any physiological mucosal more than 18 years were included. After proper informed consent using Dermlite DL4 dermatoscope.

RESULTS

Fordyce spots: The average age among 21 patients included in the study was 35.23±12.56 years. Might be due to cosmetic concerns, female preponderance was seen in our study. Out of 21 patients, 62% (13) were females and 38% (8) were males. Mostly asymptomatic, burning was seen in few cases. Distribution of Fordyce seen in buccal mucosa and upper lip predominantly in our study.

Pearly Penile Papules: The Average Age seen in our study was 25.34±6.83 years. Mostly asymptomatic. Static with no changes in 77% , rest were progressive.

VESTIBULAR PAPILLOMATOSIS: The average age among 14 patients included in the study was 29.5±7.95 years. 42% patients complain of itching, 35 % complain burning sensation, rest were asymptomatic.

PIGMENTED FUNGIFORM PAPILLAE OF TONGUE: The mean age ± SD was 40.57±14.34 years. No gender preponderance. All were asymptomatic.

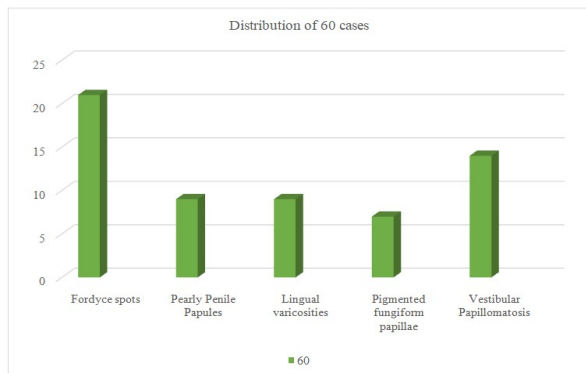


Figure 1. Distribution of physiological condition of oral and genital mucosa is represented in



Figure 2. Clinically pink tiny studded papules at the vermillion border of both upper and lower lips [left image]. White yellow discrete ovoid structures (clods) [circle] with central opacity (dots) [arrow] with linear and branching vessels at the periphery (dermlite DL4, polarized mode, 10x) [Right image]



Figure 3. Finger like papillae over coronal sulcus [Left image]. Transparent white structureless projections (blue arrow) with dot vessels (red star) with bulbous tips, separate bases (Dermlite DL4, Polarized mode 10x) [Right image]



Figure 4 shows vestibular papillomatosis (clinical) [Left image]. Dermoscopic features of vestibular papillomatosis as a fingerlike transparent projection (green arrow) with round tips and individual bases with a linear and dichotomous vascular core (red arrow) [Right image]

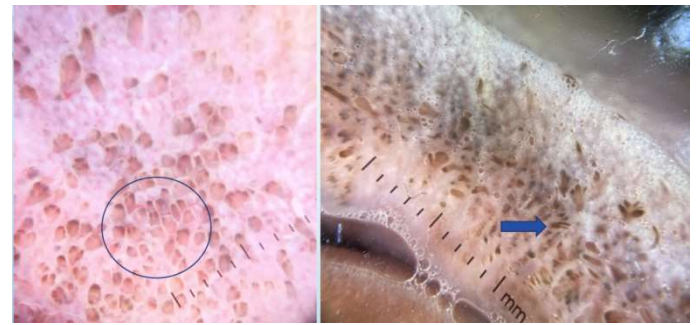


Figure 5. Mucoscopy shows projections with rose petal appearance (black circle) pigmented borders (blue arrow) [polarized 10x]

LINGUAL VARICOSITIES: The average age of involvement is (mean \pm SD) 60.78 \pm 9.93 years. Males were twice commonly involved than females in our case. Duration: of illness in 9 cases of lingual varicosities was 7.2 \pm 4 yrs. All were asymptomatic except one complained of occasional blood staining.

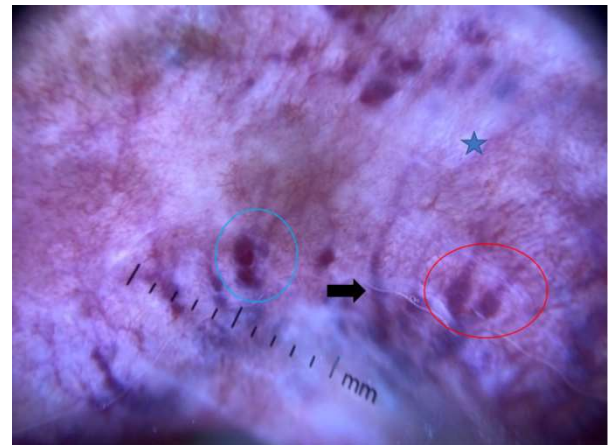


Figure 6. Mucoscopy shows red to dark blue lacunae (blue circle), shiny structureless area (blue star), linear vessels (black arrow), discretely arranged (red circle)

DISCUSSION

Mucoscopy can aid in delineating minute aspects of these lesions and will guide to differentiate similar-looking lesions. It can also help in selecting representative site for the biopsy of suspicious lesion and can also aid in remote consultation. The use of mucoscopy in characterization of mucosal disorder is a grey area and needs further exploration to establish characteristic morphologies of different mucosal lesions. It can prove to be a valuable noninvasive modality sometimes obviating the need for biopsy. Here we are describing the physiological mucosal conditions visualized in the dermatoscope. Fordyce spots are ectopic sebaceous glands. Fordyce spots are asymptomatic and benign condition and present as multiple, discrete to confluent, yellow-white, pinhead-sized, barely elevated papules with the glistening surface distributed predominantly over ventral aspects of the mucosal surface of prepuce proximal to frenulum and vermillion border. They are a cause of cosmetic concern when located around the vermillion border of the lips and oral mucosa (1). It can also cause a concern of genital wart when it appears over male genital mucosa after puberty (2). It is usually visualized with the naked eye or magnifying lens. Mucoscopy aids in differentiating it from genital warts which can cause confusion occasionally by an untrained eye. Jhakar *et al* (2019) in his case series described Fordyce spots as whitish to yellowish discrete ovoid structures. The central opacity corresponds to the opening of sebaceous glands to the surface, and the yellow area to sebaceous glands in the dermis. Surrounded by linear and branching vessels (3)

A pearly penile papule is a physiological variant presenting over the corona glandularis. Vestibular papillomatosis is the female counterpart of pearly penile papules (4). The prevalence and significance of vestibular papillomatosis are unclear, whereas pearly penile papules are seen in 50% of the male population (5). Growdon *et al* initially described vestibular papillomatosis in patients with vulvodynia and evidence of human papillomavirus infection in its pathogenesis (6). The most common virus type identified in the study was HPV16 (4). But now, it is not thought to be implicated in the pathogenesis and is described as a normal entity (5). Similar to VP, PPP is also a physiological variant. PPP is frequently mistaken with Tyson glands, ectopic sebaceous glands whereas VP with warts. Vestibular papillomatosis (VP) presents as symmetrically distributed, multiple, finger or frond-like papillae that may cover the entire surface of the labia minora (5). Pearly penile papules are described as flesh-colored, pink, tiny papules distributed in rows or rings around the corona glandularis (5). In a review article by Kamat D *et al.* (2020), mucoscopy of pearly penile papules was described as white, slightly transparent cobblestone-like projections, with the central vascular core being comma-shaped or can appear as a central dot. Vestibular papillomatosis shows transparent papillae with a prominent fibrovascular core containing irregular vascular channels with bases of papillae being separated. The surface of the tongue is covered by three types of papillae: fungiform, filiform, and circumvallate. Fungiform papillae, are discrete projections predominating along the anterior and lateral aspects of the tongue. Filiform papillae, which are the most numerous, are distributed on the dorsal surface of the tongue. Circumvallate papillae, which are the largest but least numerous types of papillae, are found towards the posterior side of the tongue (7). Pigmentation of fungiform papillae is described as PFPT, whereas pigmentation of filiform papillae is seen in the black hairy tongue. Black hairy tongue (BHT) is a benign condition characterized by elongated filiform lingual papillae with a typical carpet-like appearance on the dorsum of the tongue. PFPT is more frequent in Blacks, Asiatic and Hispanics, and typically presents in young individuals during the second and third decades of life, although it has also been described in children (7). Its prevalence varies geographically, typically ranging from 0.6% to 11.3%. Male sex, and older age are at high risk (8). Known predisposing factors of black hairy tongue include smoking, excessive coffee/black tea consumption, poor oral hygiene, trigeminal neuralgia, general debilitation, xerostomia, and medication use. presence of secondary infection of *Candida albicans* and/or *Bacillus subtilis varietas niger* (5). Pigmented fungiform lingual papillae is an asymptomatic, benign and nonprogressive condition characterized by dark brown to black pinhead papules on the tip or dorsum of the tongue, and correlates with hyper pigmentation confined to fungiform papillae. Pigmentation of the proximal nail folds and gums has also been reported (7). Dermoscopy of PFPT may reveal a cobblestone-like distribution and 'rose petal' pattern, and can be very useful in ruling out other pigmentary disorders of the oral cavity (9). The dermoscopic evaluation of PFPT revealed multiple hyperchromic, brown projections with pigmented borders and dichotomized vessels originating at their base, resembling a rose petal pattern (10). Lingual varicosities are described as prominent sublingual veins due to age, tissue relaxation, elastolytic degeneration and increased venous pressure. Seen in population over 40 years, over the lateral border of tongue and floor of mouth (147). Fabry's disease, hereditary hemorrhagic telangiectasia is the most common associated condition. Early appearances of varices indicated a premature aging process. Dermoscopy on polarized mode, 10X shows red lacuna with a whitish veil in a few areas as per Jha A K *et al* (2018) (11).

Sonthalia *et al* (2019) described lingual varicosities as the absence of pigmentation, the presence of multiple loosely scattered red lacunae with a bluish-white (rather than white) veil present over a yellowish crimson background, surrounded and interspersed with fine arborizing vessels and scattered telangiectasias and focal white structureless areas (12).

CONCLUSION

Dermoscopy is not a novel technology, previously extensive workup on melanocytic disorders is done. Nowadays dermoscopy has become an integral part of clinical dermatology. Mucoscopy is an additional tool, not an alternative to the diagnosis. So, this simple outpatient procedure may aid in the diagnosis of certain mucosal dermatosis. Mucoscopy helps in differentiating clinically indistinguishable dermatosis and minimizes unnecessary invasive tests like biopsy.

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