WHAT SHOULD A COSMETOLOGIST KNOW ABOUT DERMATOLOGICAL LESIONS ON THE FACE?

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ABSTRACT

In everyday practice, cosmetologists often observe abnormalities on the facial skin of his or her clients. Facial lesions have a diverse clinical picture, although most are benign. However, some lesions may be malignant and demand fast diagnosis and treatment. Among benign lesions are xanthomas, epidermal cysts, milia and seborrheic keratoses. Xanthomas are usually localized on the eyelids and often coexist with dyslipidemia. They appear clinically as yellowish papules that vary in size. Epidermal cysts are the most common type of skin cyst. They typically occur on the head and neck, and usually affect young adults in their 20s. Milia are common skin lesions that are typically numerous in presence and appear as small-sized sebaceous papules. Seborrheic keratoses are another important type of lesion that are localized on the face and may be disturbing for clients. These are benign tumors that usually appear in individuals over 50 years of age and have an incidence that rises with age. Typically, they are brown in color but they can also be other colors including black, yellow, grey or bluish.

Other skin changes include basal cell carcinoma, actinic keratosis, squamous cell carcinoma and lentiginous malignant melanoma. Basal cell carcinoma is a slow-growing, locally malignant epithelial cancer of the skin. This cancer presents mainly in areas exposed to ultraviolet (UV) radiation. Actinic keratosis is a pre-cancerous lesion that is associated with UV radiation. It predisposes to squamous cell carcinoma and other skin cancers rarely. In contrast to basal cell carcinoma, squamous cell carcinoma may cause metastases with high mortality. Melanoma on the head and face usually takes the form of a lentiginous malignant melanoma. This manifests clinically as a brown spot that slowly grows centrifugally. Melanomas vary in size and color. Dermoscopy is an important tool that may help during diagnosis of facial lesions.

Given the severe consequences of some skin lesions, it is very important for cosmetologists to have knowledge of the conditions described above. This is because he or she is often the first person who can persuade the client to undergo further evaluation.

KEYWORDS: cosmetologists, facial lesions, dermatology

BACKGROUND

In everyday practice, cosmetologists often observe changes on the facial skin of his or her clients. In all cases, the cosmetologist should suggest that the client consults with a dermatologist due to the range of lesions that may appear on the face as well as their diverse clinical picture. It is obvious that facial lesions may be benign or malignant. However, there are also changes that are classified as pre-cancerous where early treatment allows elimination of the threat of cancer. Therefore, it is very important for cosmetologists to have knowledge of the conditions described below because he or she is often the first person who can persuade the client to undergo appropriate further evaluation.

XANTHOMA

Xanthomas are deposits of lipids in the skin that often take the form of a yellowish nodule or clod. The basis of the skin eruptions lies in the accumulation of lipids in the skin macrophages that leads to formation of foam cells and then to Touton giant cells [1]. From a clinical point of view, xanthomas are often associated with acquired or congenital dyslipidemia [2]. There are many types of xanthomas including eyelid xanthelasma, and plane, tuberous, tendinous, subcutaneous, eruptive, tuberoeruptive and palmar xanthomas [1]. The most common type are eyelid xanthomas in the form of flat yellowish discs located symmetrically on the upper eyelids (70% of cases). A minority occur on...
the lower eyelids, and rarely both eyelids are affected with an oval shape formed [2].

In children and young adults, the presence of patches of yellow on the eyelids may signal underlying autosomal dominant hypercholesterolaemia. However, eyelid xanthelasma occurs most often after 50 years of age, with dyslipidemia (especially an increase in low-density lipoprotein (LDL) fraction) occurring concurrently in about 50% of patients. For this reason, xanthomas should not be considered only as a cosmetic defect. The patient's serum lipid concentration profile should always be evaluated if xanthomas occur. Lesion treatment involves correcting hyperlipidemia, which may cause regression (sometimes substantially so) of the changes. Other methods of treatment include surgical removal, cryotherapy, laser or chemical ablation with trichloroacetic acid [1,2]. It is worth noticing that visible treatment effects have been reported after use of a pulsating pigment laser, Nd-YAG Q-switched laser or an erbium-YAG laser [3,4].

**EPIDERMAL CYSTS**

Epidermal cysts are depressions within the tissue that are filled with liquid or semi-fluid content. They are considered to be true cysts and are the most common type of cyst presenting on the skin. Epidermal cysts are usually located on the skin of the neck (32%), or on the head, face, trunk or limbs [5,6]. Unusual locations such as the mouth, hands, feet, fingers and the breast area have also been observed [6]. Epidermal cysts occur most frequently in young people between 21 and 30 years of age, with an equal frequency in both sexes [6]. The mechanism of their formation is unclear. It is assumed that the most common cause of cyst development in hairy areas is blocking of the hair follicle [7,8]. The diameter of the epidermal cyst usually varies between 3 mm and 2 cm [7]. However, there are literature descriptions of giant cysts with a diameter of more than 5 cm [5,6].

In most cases, the lesions are isolated. However, numerous cysts located on the limbs may suggest Gardner’s syndrome or nevoid basal cell carcinoma syndrome [7]. Multiple epidermal cysts have also been reported as a complication during treatment with cyclosporin or imiquimod [6]. In most cases, epidermal cysts are single-chamber. However, there are also multi-chamber cysts, which are less frequent [7,8]. An epidermal cyst is usually asymptomatic unless it is infected or pressing on adjacent anatomical structures [5]. In the differential diagnosis of an epidermal cyst, tricholemmal cyst, cystic adenomatoid tumor, cystic basal cell carcinoma or metastasis to the skin should be considered [7]. Epidermal cysts often take the form of benign lesions that do not require treatment. Cosmetic considerations or recurrent infections may be an indication for removal. Treatment consists of a surgical incision and removal of the epithelial lining of the cyst (marsupialisation) [7]. Surgical intervention may cause scarring. Therefore, it is preferable to use non-invasive methods such as removing the lesion with a CO2 laser [9].

**MILIA**

A common type of benign lesion that often occurs on the face is a milium. A milium is an epidermal cyst that is white-yellow in color, usually smaller than 3 mm in diameter, and contains a sebaceous and horny mass [10]. Milia can be divided into primary, secondary and other types [7,11]. Secondary milia can be caused by superficial epidermal trauma such as dermabrasion, chemical exfoliation, burns, or following radiotherapy or skin grafting [7,11]. They can coexist with bullous dermatoses such as porphyria cutanea
tarda, epidermolysis bullosa, lupus erythematosus, Sweet’s syndrome and Duhring’s disease [7,11]. Moreover, secondary milia may result from drugs such as 5-fluorouracil, cyclosporin, penicillamine and topical glucocorticoids [11].

Secondary milia may disappear spontaneously but usually persist. A rare variant of milia is miliaen plaque, which presents clinically as multiple milia grouped on an erythematous plaque located behind the ears and the periocular region [12]. Numerous milia may also accompany genodermatosis. Its coexistence with Baze-Dupre-Christol, Rombo, Brooke-Spiegler, Gorlin-Goltz and Papillon-League-Psaume syndromes has also been reported [11]. Comedos, xanthomas and syringoma need to be considered in the differential diagnosis of milia [7]. Treatment of milia is based on removing the content of the lesions with a scalpel or special extractor for exfoliating the lesion. Local retinoids and electrocoagulation are available for when numerous milia are present [11].

**Seborrheic keratoses**

Seborrheic keratoses are benign, pigmented epidermal tumors that occur quite commonly. They usually develop after the age of 50 years, although they have been described in young adults occasionally. They are without any predilection for sex [13–15]. It is estimated that 80 to 100% of patients over 50 years old have at least one lesion [14]. In most cases, individuals have numerous seborrhoeic keratoses and the presence of more than 10 lesions in one patient is not uncommon [14]. Most often the lesions are located in the seborrheic area on the back, especially in the interscapular region, and on the neck, face and arms. Clinically, seborrhoeic keratoses are usually oval in shape and there is a well-defined border between the skin and the seborrheic keratosis, with the appearance of being “stuck to the skin”. They can be flat or exophytic, and sometimes have a papillary structure. They are usually yellow, brown, or blue and gray. Non-typical changes may cause a diagnostic problem. Blue-gray seborrhoeic keratoses may resemble melanoma whereas others, especially the irritated ones, may resemble squamous cell carcinoma [14]. In these cases, a dermoscopic examination is very helpful. However, the only decisive diagnostic tool is a biopsy followed by histological evaluation [14]. The etiology of seborrheic keratoses is not fully understood, although there may be an influence of genetic factors, human papilloma virus (HPV) infection or ultraviolet (UV) exposure as well as somatic mutations in the gene encoding the fibroblast growth factor receptor 3 (FGF3) receptor [13,15]. Treatment for seborrhoeic keratoses is not required because they are benign changes. However, patients often decide to remove them for cosmetic reasons. Treatment is based on surgical trimming or curettage of the lesion. Cryotherapy, electrocoagulation, erbium-yag laser or CO2 laser can also be used. There are also reports on the beneficial effects of topical medications such as vitamin D analogues, tazarotene and imiquimod in the treatment of seborrhoeic keratoses [15].

**Basal cell carcinomas**

Basal cell carcinoma (‘BCC’) is a slow-growing, locally malignant epithelial cancer of the skin. It is the most frequent of all malignant tumors in humans [16]. As this cancer is localized mainly in the areas exposed to UV radiation, the face is the most common place where such a change occurs (80% of cases). However, BCCs can also occur in other locations including the anogenital area [16]. Men experience BCCs slightly more often than women [17]. The tumor grows slowly and metastases affect less than 0.5% of all cases [16]. Patients often do not undergo treatment or neglect it completely because of its slow growth. This can lead to local damage of surrounding tissues and permanent disfigurement. Etiological factors include chronic exposure to UV radiation, especially to UVB radiation with a length of 290-320 nm. The influence of mutations in the PTCH1 gene in the etiology of sporadic cases of BCC and of nevoid BCC syndrome has also been proposed [16]. Other risk factors are represented by ionizing radiation, exposure to arsenic or other industrial chemicals including vinyl chloride, and immunosuppression [16]. Various cases of BCC have been described in the literature including nodular, superficial, scleroderma, cystic, pigmented, micronodular and ulcerative.

It is impossible to describe all BCC types in this publication. Therefore, it is worth focusing on the most common form, which is nodular BCC. This occurs in 60-80% of all BCC cases [16], and presents clinically as an exophytic, convex nodule with pearly or waxy edges. If left untreated, it may turn into a cystic or ulcerative form [16]. In the tumor, telangiectasias are often visible and the central part is sunken or covered with a scab. The differential diagnosis for this type of tumor should consider molluscum contagiosum, overgrowth of sebaceous glands, amelanotic melanoma and trichopeithelioma [17]. Some BCCs are connected with Gorlin-Goltz syndrome (nevoid BCC syndrome), which is...
inherited in an autosomal dominant way. Apart from BCC, this syndrome may also result in uneven skin surfaces on the hands and soles of the feet, mandibular cysts, numerous epidermal cysts on peripheral parts of the body and other developmental abnormalities [17]. Dermoscopic examination is useful to diagnose BCC, but only biopsy and histological examination allow unambiguous recognition. There are several possible ways to treat BCC namely surgical removal, Mohs surgery, electrocoagulation, cryotherapy, roentgenotherapy, laser treatment, photodynamic therapy and local treatment with 5-fluorouracil or imiquimod. Moreover, the efficacy of intradermal administration of interferon alfa has also been reported [16].

**Squamous cell carcinoma**

SCC is a non-melanoma skin cancer that accounts for 20% of all tumors in this group [20]. It derives from the progenitor cells of the basal layer of the epidermis [21]. Its early detection and treatment are important due to its malignancy and potential for metastasis. SCC is more common in men and in people over 75 years of age. It is also more frequent in people with fair complexion, red hair and blue eyes [21]. Risk factors include chronic exposure to UV radiation. Moreover, it can develop from non-healing wounds and scars or chronic inflammatory changes. Currently, AK (described above) is considered to be SCC in situ [22]. Most SCCs derive from these types of changes, and they rarely develop de novo in unchanged skin. There are a number of other SCC types such as Bowen’s disease, erythroplasia of Queyrat or erythroplasia and malignant leukoplasia.

Clinically, ulcerative and verrucous forms are distinguished. The ulcerative form is a perilous ulcer with hard edges. The verrucous form is characterized by exophytic growth and less infiltration than the ulcerous form. With time, the changes become bigger, and undergo necrosis and infection. The increase in size of a SCC is much more destructive than with a BCC. Changes in the skin may be accompanied by paresthesia and enlargement of the lymph nodes [20]. Mortality may be up to 70% in the case of metastases [20]. The recommended treatment is based on surgical excision or Mohs microsurgery.

**Lentiginous malignant melanomas**

Melanoma on the head or the face, usually takes the form of a lentiginous malignant melanoma (LMM) [22,23]. Although these lesions appear on skin damaged by the sun, it is thought that the cumulative UV dose is less important than the number of sunburn episodes [23]. Other risk factors include a positive family history of melanoma, genetic burden, low skin phototype, presence of numerous melanocytic traits, freckles and dysplastic nevi [21,23]. The incidence of LMM increases with age, and it is especially frequent in the seventh and eighth decade of life [21]. It manifests clinically as a brown spot that slowly grows centrifugally.

The color of the lesion may range from dark-black through to various shades of brown, and it may also have an amelanotic component [23]. The patient often describes the facial lesion as a new brown spot or indicates that the previously existing lesion has begun to change color, shape or size. Diagnosis of a lentigo is
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usually based on dermoscopic examination. Evaluation under Wood lamp or confocal microscopy may also be useful for diagnosis [23]. However, histological examination remains the gold standard diagnostically. Treatment is based on a classic surgical excision with an appropriate margin of tissue, or Mohs microsurgery.

**SUMMARY REMARKS**

Knowledge of the issues discussed above is important not only for dermatologists, but also for doctors of other specialties, as well as for cosmetologists. The latter discipline may encourage their client to consult a dermatologist for evaluation of any new skin lesion. This type of action can significantly affect skin cancer prevention.

![Lentiginous malignant melanoma.](image)

**REFERENCES**

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