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DERMATOSCOPY AS A HELPFUL TOOL IN PLASTIC SURGEON'S PRACTICE – A PRELIMINARY STUDY

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The aim of the study was to examine the utility of dermatoscopy in plastic surgeons' practice in pigmented and non-pigmented skin lesions management.

Material and methods. The examined group consisted of 68 patients with 132 lesions (50 women and 18 men) aged from 12 to 75 years (the mean: 47.2 years \pm 16.9 years), who underwent dermatoscopy. Dermatoscopic photographs were analysed according to the ABCD and 7-point scales and then, a further treatment (surgical excision, electro resection or regular follow-up and observations) was planned.

Results. The mean score of all lesions according to ABCD scale was 2.34 while in 7-point scale it was 0.62. In male and female groups the number of lesions and their ABCD and 7-point scale scores were similar ($p > 0.05$). Histopathological examination revealed that all excised lesions were benign (compound melanocytic nevi) which corresponded with dermatoscopic evaluation.

Conclusions. Dermatoscopy seems to be helpful in surgeons' dealing with skin lesions practise and in many cases it enables to choose less invasive technique of lesions' removal (electro resection), which gives better aesthetic results.

Key words: dermatoscopy, skin lesion, plastic surgery

Dermatoscopy is a non-invasive method and a complementary tool in the differential diagnosis of skin lesions – both benign and malignant (1). The device with an integral light source is applied to the skin to visualize dermal and epidermal structures (2). The effect of dermal examination is visible on the computer screen in real time. Some characteristics of skin lesions that are not evident to the “naked eye” can be observed using dermatoscope (3).

The features of the skin lesions in dermatoscopy include: symmetry or asymmetry, homogeneity or heterogeneity of pigment distribution (brown lines, dots, clods and structureless areas), skin keratin (small white cysts, crypts, fissures), border of the lesion (fading,

sharp cut off of pigment, radial streaks), vascular morphology and occurrence of ulceration (4, 5). Images can be classified based on objective, specific criteria (e.g. the ABCD (E) scale and Glasgow 7-point checklist).

Main advantages of dermatoscopy are non-invasiveness and rapid results. Moreover, the examination is painless – it does not require puncturing opposed to surgical biopsies. However, before the examination detailed clinical information should be obtained: the occurrence of skin lesion in the family, the time and method of past treatment and history of the disease (time of onset, changes of the color and shape, pain, itching, bleeding, ulcerations).

Videodermoscopy, which is a computer analysis of the skin lesions, enables observing them under high magnification, archiving images and comparing skin lesions' appearance with the previous examinations. The „mole mapping” includes regular clinical examination and dermoscopy to identify and evaluate alarming skin lesions, especially among people with a high risk of malignant melanoma. Professional computer software enables comparing the current image with previous cases including standard criteria of benign and malignant pigmented skin lesions. Also, the results of examination can be independently assessed by other experts in dermoscopy.

An excision and histopathological examination of skin lesions became one of the elementary procedures in plastic surgeon's practice. According to one of the meta-analysis, dermoscopy has revealed a superior accuracy to the “naked eye” examination in the diagnosis of melanoma (5). This promising tool can improve the diagnostic precision from 5% to 30% depending on the skills of the clinicians and the features of dermal lesions (6). There are morphological features of the tumors that are invisible to the “naked eye” and providing an additional challenge for evaluation. This aspect is particularly valuable in identifying early tumours at a critical stage, before they develop typical clinical features.

Dermoscopy is not only used as additional tool to identify malignant skin lesions in surgical and dermatological practices. This diagnostic instrument can also be useful in assessment of vascularity and pigmentation of scars, in the diagnosis of skin parasitic diseases, seborrheic keratoses, fungal infections and in evaluation of hair construction.

The aim of the study was to examine the utility of dermoscopy in plastic surgeons' practice in pigmented and non-pigmented skin lesions management.

MATERIAL AND METHODS

Dermoscopy has been performed in Plastic Surgery Out-patient Clinic in University Hospital No. 1 in Łódź from 2015 with the use of videodermoscope DermDOC, Derma Medical Systems. From all patients consulted in the Clinic due to different skin lesions (ulcerations, pigmented or non-pigmented le-

sions, vascular tumours) only those meeting the following criteria were qualified to undergo this examination: atypical pigmented skin lesions in patients who were not decided to remove them surgically and non-specific skin lesions' appearance (non-pigmented moles, seborrheic keratoses etc.) causing difficulties in deciding about removal method (surgical biopsy or electro resection).

Finally, the examined group consisted of 68 consecutive patients meeting the above mentioned criteria with 132 lesions (50 women and 18 men) aged from 12 to 75 years (the mean: 47.2 years \pm 16.9 years), who underwent dermoscopy during 6 months. Dermoscopic photographs were analysed according to the ABCD and 7-point scales and then, a further treatment (surgical excision, electro resection or regular follow-up and observations) was planned. If the lesion was assessed as benign in dermoscopy (ABCD scale \leq 4.75) the method of treatment was based on patient's preferences (observation, electro resection, and surgical excision). However, in cases of flat pigmented skin lesions (melanocytic nevi) surgical excision or observation were implemented. In cases when dermoscopic examination revealed suspected or malignant pigmented skin lesion (ABCD scale $>$ 4.75) the patient was qualified for surgical excision (surgical biopsy).

The data was analysed statistically using t test and $p < 0.05$ was accepted as a level of significance.

RESULTS

The mean number of lesions examined with dermoscopy in one patient was 2 (from 1 to 7). Most of them were localized on thorax and abdomen (68 lesions) and on face (43 lesions), the rest were located on upper and lower limbs (21 lesions). The mean score of all lesions according to ABCD scale was 2.34 while in 7-point scale it was 0.62. In male and female groups the number of lesions and their ABCD and 7-point scale scores were similar ($p > 0.05$). From all skin lesions, which were subjected to dermoscopy 70 (53%) were removed using electro resection, 37 (28%) were qualified for regular observation (twice a year with control dermoscopy) and 25 (19%) were excised and verified with histopathological examination.

The mean value of ABCD and 7-point scales' scores of lesions removed with electrocautery was 2.31 and 0.54 points, while in case of lesions qualified for regular observation the values were similar and reached 2.21 and 0.54 respectively. Lesions, which were excised had the mean ABCD and 7-point scales' score slightly higher than those removed with electro resection and qualified for observation (2.68 and 0.89). Histopathological examination revealed that all excised lesions were benign (compound melanocytic nevi) which corresponded with dermatoscopic evaluation.

Figures 1 and 2 present dermatoscopic view of the examined lesions.

DISCUSSION

Dermatoscopy is nowadays an important tool for the diagnosis of pigmented moles, it helps to differentiate non-melanocytic lesions from melanocytic ones as well as to distinguish between benign and malignant melanocytic tumours (7). Some skin lesions seems to be clear-cut even to the "naked eye", however the use of dermatoscopy might be helpful and can potentially change the clinical diagnosis. That is why some authors claim that it should always be performed (8).

It is said that dermatoscopy can reduce the morbidity from unnecessary excision of benign

Anatomic Site: left cheek
Given Diagnosis: Pending



Summary of the ABCD rule for Dermatoscopy

The current pigmented skin lesion exhibits lack of asymmetry in both axes. Abrupt cutoff of pigment pattern wasn't found. The lesion exhibits light brown, dark brown and black colours. In addition the following differential structural components were found: homogeneous area and globules.

Thus, according to the recent input this pigmented skin lesion has an ABCD total score of 1,70 following the method of W. Stolz et al.

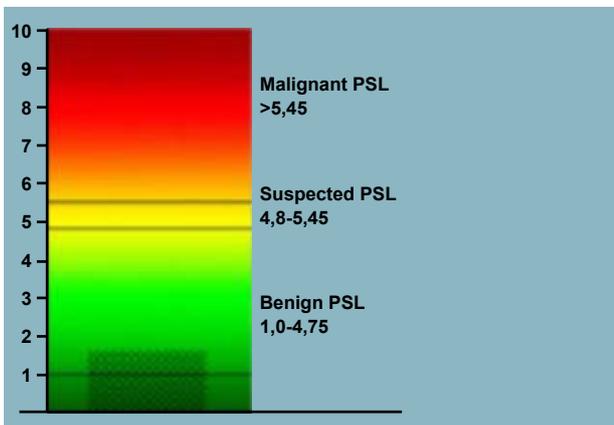


Fig. 1. Dermatoscopic view of lesion evaluated benign (1.7 points in ABCD scale)

Anatomic Site: left lower abdomen
Given Diagnosis: Pending



Summary of the ABCD rule for Dermatoscopy

The current pigmented skin lesion exhibits asymmetry in one axis. Abrupt cutoff of pigment pattern wasn't found. The lesion exhibits light brown and dark brown colours. In addition the following differential structural components were found: pigment network.

Thus, according to the recent input this pigmented skin lesion has an ABCD total score of 2,80 following the method of W. Stolz et al.

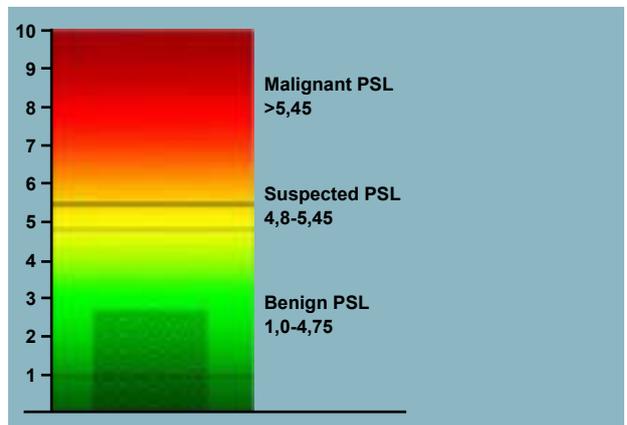


Fig. 2. Dermatoscopic view of lesion evaluated benign (2.8 points in ABCD scale)

lesions (2). There is also an economic argument as fewer excisions could cause cost savings (2). Townley et al., based on observation of 30 photographs of skin lesions, recognized in their study that nearly 20% fewer benign lesions were recommended for excision following dermatoscopy (2). In our research only 19% patient had their lesion excised. Carli et al. noticed that addition of dermatoscopy to “naked eye” examination in a prospective randomized trial resulted in a 42% of patients referred for observation (9). In our group almost 30% of patients were qualified for regular follow-up. The rest of patient (53%) had their lesion removed using less traumatic method like electro resection.

Many authors pay attention to the fact that the entire patient should be examined, not a single nevus (10, 11). It is known that individuals with multiple nevi often have a predominant dermatoscopic nevus pattern (11). We agree with the authors and in our study the skin of whole patient’s body was checked firstly by “naked eye” and secondly all suspicious nevi were examined by dermatoscopy. This improves the proper diagnosis of skin lesion.

Dermatoscopy is a widely used tool for examining pigmented lesions, especially helpful in cases of its uncertain nature (12). It is consider as fast and easy method of improving the diagnosis. Modern equipment with mobile camera and possibility of creating database in computer helps to perform regular observations of patients. Usually, in available programs designed for the purpose of dermatoscopy, the suitable scales to evaluate skin lesion are included. This makes such examination easy and reliable. Our preliminary experience with dermatoscopy shows that this diagnostic tool may be helpful in plastic surgery out –

patient clinic. Most of patients with pigmented skin lesions express concern about possible malignancy of their lesions. Dermatoscopic examination enables informing patients about a possible risk of malignancy and in many cases it helps to justify the decision of observing the lesion. However, many patients informed that, according to dermatoscopic assessment, their lesion is benign, still want to remove it, mostly due to aesthetic reasons. In most of these cases, electro resection seems to be an adequate choice as it gives better aesthetic results than surgical removal. In this aspect, we find dermatoscopy especially useful tool providing a rationale for a specific treatment. However, there is also a group of patients who, despite dermatoscopic diagnosis of a benign lesion, insist on surgical biopsy. In most of such cases, we qualify them for surgery, although this indication may be controversial.

Due to these facts, it seems to be important to increase dermatoscopy learning and training opportunities for surgeons and provide out-patients clinics with such devices.

CONCLUSIONS

1. Dermatoscopy may be useful in pigmented and non-pigmented skin lesions, especially in patients who are not decided to remove the lesion surgically and would rather like to be informed about the possible risk of their skin lesion.
2. Dermatoscopy seems to be helpful in surgeons practise and in many cases it serves a rationale for choosing less invasive technique of lesions removal (electro resection), which provides better aesthetic results.

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