

STRUCTURAL PECULIARITIES OF NORMAL SKIN AND SURROUNDING SKIN FROM REMOVED MELANOCYTIC NEVI

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Environmental factors play an important role in preserving the integrity of the skin. The changes can occur to components and ultrastructure of the skin due to genetic factors, predisposing environmental factors, and favored by the emergence of skin pathology. In this context, the present study refers to the normal structural appearance of the skin and presents comparative, characteristic appearances of melanocytic nevi. Such reviews are important since the pathology of melanocytic nevi is occurring at an increased frequency.

Key words: skin, melanocytic nevi, structure

The skin, as an organ, acts as the barrier between the external environment and the body [8, 10]. Various risk factors from the environment can produce, in certain circumstances, changes in skin structure and are associated with various skin diseases. In the context of environmental risk factors impacting upon the structure of the skin, these include pollutants, temperature changes, climatic variations, hormonal factors and, not least, exposure to ultraviolet radiation without adequate protection [11, 15].

Given these risk factors, there are numerous external forces that can cause skin changes [7]. As well as associated pathologies, there are numerous studies that show how biomolecular mechanisms and pathophysiology are connected to changes to the skin, giving rise to dermatological disorders [3, 14]. For these reasons, this study looks at, in addition to polluting factors, eating. This is a factor that can affect the functionality of organs, although the effect is generally viewed as tegumental [3, 5]. Similarly, changes that occur in the skin layers, producing alterations in niveliul down to six layers, cause changes to subcomponents and ultrastructural type [1, 2]. The changes occur in the dermis and epidermis are linked to alternations to subcomponents.

The study outlined in this paper is useful for examining skin pathology idea, particularly with the medical examination of children. Children are the most commonly affected segment of the population. After this age group, as children become older, this condition is often followed by a degree of disability in relation to impaired tegumentului. Older people have a high vulnerability to disease. Among the different dermatological disorders that affect the skin, melanocytic nevi are considered the most common pathology [14].

In context, melanocytic nevi can be found at an early age, those from childhood to old age [9, 13].

The frequency spread of melanocytic nevi in the body segments is strictly interdependent with individual phenotype, with predisposing genetic factors and exposure to harmful factors directed towards the skin, such as exposure to ultraviolet radiation, are deemed to have a minor role [5]. From this perspective, what appear as benign melanocytic nevi may degenerate and become malignant [15]. Such changes to the skin can be demonstrated successfully on experimental animal models [6].

MATERIAL AND METHODS

This study demonstrates the structural aspects of normal skin together with nevi aspects of skin pigmentation. Being a structural study, data is presented in comparison with normal skin images and images with different skin structures with melanocytic nevi. The image analysis was performed on permanent microscopic preparations carried out in different laboratories. Observations were performed using a Nikon microscope with magnifying lenses of different powers: x 20 for overview and x40 for structural details.

RESULTS AND DISCUSSION

Outlined in this section are the structural aspects of the normal epidermis. Figure 1 shows the layered tissue type malpighian with keratinization and its subjacent area, represented by connective tissue (fig. 1).

The purpose of the study is to present comparative structural issues related to the normal epidermis and melanocytic nevi. To show this, selected segments of the body were chosen, where melanocytic nevi occur adjacent to hair. In addition to the typical appearance of melanocytic

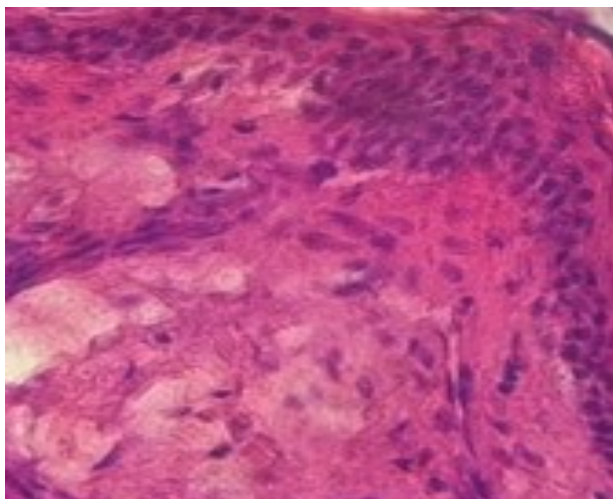


Figure 1 – H&E Staining x20

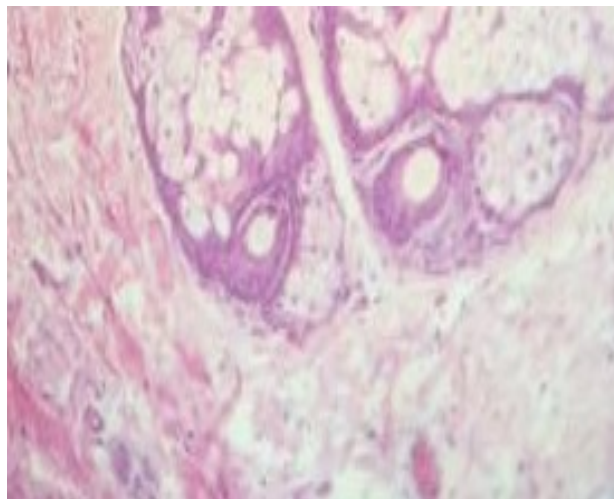


Figure 2 – H&E Staining x20

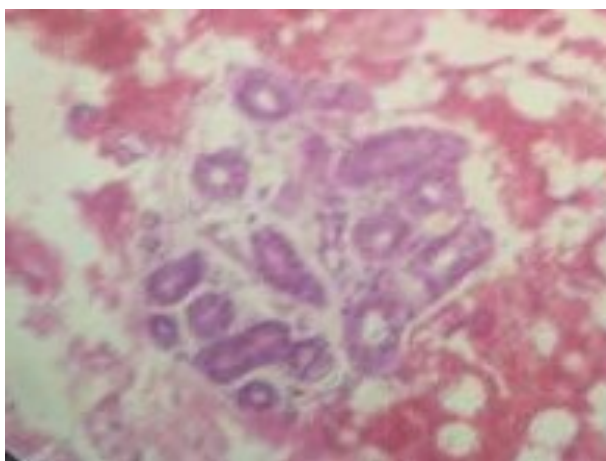


Figure 3 – H&E Staining x20

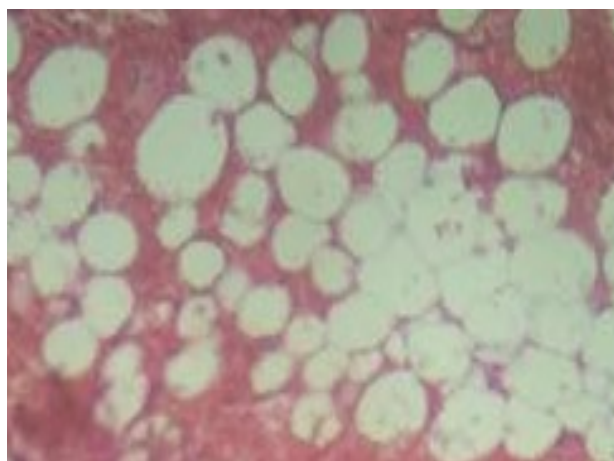


Figure 4 – H&E Staining x20

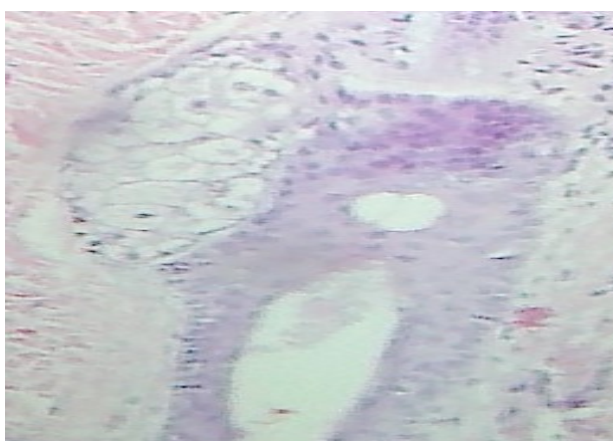


Figure 5 – H&E Staining x40

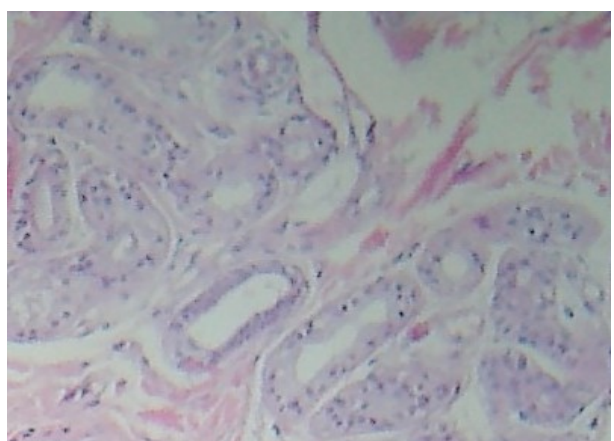


Figure 6 – H&E Staining x40

nevi in the dome around the hair follicles, there are sebaceous glands and sweat glands additionally associated with hair.

Next picture captures the sebaceous gland. The embodiment shown is similar in melanocytic nevi in areas of glandular epithelium and in which are present the histological structures. In the

context of the above image, figure 2 shows the sebaceous gland type alveolar adjacent pilot follicles, present both in normal cases and in areas where they were excised melanocytic nevi adjacent hair (fig. 2).

Figure 3 displays sweat glands, sebaceous glands present in the vicinity and which are found

both in normal cases and in areas where the skin of melanocytic nevi were removed (fig. 3).

Since the parts were excised for examination of skin areas, the next image shows subcutaneous fat (fig. 4).

The next picture represents a small part of a microscopic field from microscopic preparations taken after the excision of a melanocytic nevus. Observe the hair and its adjacent portion of the sebaceous gland (fig. 5).

The following picture shows the appearance of sweat glands taken by a microscopic preparation. Here where a close-up is shown of a melanocytic nevus (fig. 6).

CONCLUSIONS

Given the many risk factors, as presented in the introduction of this material, and the resultant changes in level of skin to skin diseases with both benign and malignant potential, this study provides useful information for those tasked with undertaking medical examinations. Those interested in this scientific field can examine the pictures to visualize the normal structural melanocytic nevi and to add to the body of knowledge in relation to dermatological pathology.

REFERENCES

1 Das I. Effect of garlic on lipid peroxidation and antioxidation enzymes in DMBA-induced skin carcinoma /I. Das, T. Saha //Nutrition. – 2009. – V. 25. – Pp. 459-471.

2 Das I. Saffron suppresses oxidative stress in DMBA-induced skin carcinoma: A histopathological study /I. Das, S. Das, T. Saha //Acta Histochem. – 2010. – V. 112. – Pp. 317-327.

Ebanks J. P. Mechanisms regulating skin pigmentation: the rise and fall of complexion coloration / J. P. Ebanks, R. R. Wickett, R. E. Boissy //Int. J. Mol. Sci. – 2009. – V. 15. – Pp. 4066-4087.

Gillbro J.M. The melanogenesis and mechanisms of skin-lightening agents existing and new approaches /J. M. Gillbro, M. J. Olsson //Int. J. Cosmet. Sci. – 2011. – V. 33(3). – Pp. 210-221.

Inhibitory effects of arbutin on melanin biosynthesis of alpha-melanocyte stimulating hormone-

induced hyperpigmentation in cultured brownish guinea pig skin tissues /Y. J. Lim, E. H. Lee, T. H. Kang et al. //Arch. Pharm. Res. – 2009. – V. 32 (3). – Pp. 367-373.

3 Inhibitory effect of dietary curcumin on skin carcinogenesis in mice /P. Limtrakul, S. Lipigorngoson, O. Namwong et al. //Cancer Lett. – 1997. – V. 116. – Pp. 197-203.

4 Kosmadaki M. G. Recent progresses in understanding pigmentation /M. G. Kosmadaki, A. Naif, P. Hee-Youn //G. Ital. Dermatol. Venereol. – 2010. – V. 145(1). – Pp. 47-55.

5 Madison K. C. Barrier function of the skin: "la raison d'être" of the epidermis //J. Invest. Dermatol. – 2003. – V. 121. – Pp. 231-241.

6 Ortonne J. P. Latest insights into skin hyperpigmentation /J. P. Ortonne, D. L. Bissett // J. Investig. Dermatol. Symp. Proc. – 2008. – V. 13(1). – Pp. 10-14.

7 Proksch E. The skin: An indispensable barrier /E. Proksch, J. M. Brandner, J. M. Jensen //Exp. Dermatol. – 2008. – V. 17. – Pp. 1063-1072.

8 Protection against ultraviolet B-and C-induced DNA damage and skin carcinogenesis by the flowers of *Prunus persica* extract /M. Y. Heo, S. H. Kim, H. E. Yang et al. //Mutat Res. – 2001. – V. 496. – Pp. 47-59.

Smit N. The hunt for natural skin whitening agents /N. Smit, J. Vicanova, S. Pavel //Int. J. Mol. Sci. – 2009. – V. 10(12). – Pp. 5326-5349.

9 Structural aspects regarding surgical pathology of children /A. Cheșcă, T. Sandle, D. Babenko, I. Azizov //Annals of the Romanian Society for Cell Biology. – 2015. – V. 3. – Pp. 65-69.

10 Topographical and temporal diversity of the human skin microbiome /E. A. Grice, H. H. Kong, S. Conlan et al. //Science. – 2009. – V. 324. – Pp. 1190-1192.

11 Woolery-Lloyd H. Treatment of hyperpigmentation /H. Woolery-Lloyd, J. N. Kammer //Semin. Cutan. Med. Surg. – 2011. – V. 30(3). – Pp. 171-175.

Received 20.08.21

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ОСОБЕННОСТИ ЗДОРОВОЙ КОЖИ И КОЖИ, ОКРУЖАЮЩЕЙ УЧАСТОК УДАЛЕННОГО МЕЛАНОЦИТАРНОГО НЕВУСА

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Экологические факторы играют важную роль в сохранении целостности кожных покровов. Изменения могут произойти в компонентах и ультраструктуре кожи из-за генетических факторов, факторов окружающей

среды, и могут обусловить возникновение патологии кожи. В этом контексте в настоящем исследовании изучено структурный вид здоровой кожи в сравнении с характеристиками меланоцитарного невуса. Такие исследования имеют важное значение, так как в настоящее время регистрируется увеличение уровня заболеваемости меланоцитарным невусом.

Ключевые слова: кожа, меланоцитарный невус, структура

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САУ ТЕРІ МЕН АЛЫСТАТЫЛҒАН МЕЛАНОЦИТАРЛЫ НЕВУСТЫҢ БӨЛІГІ ҚОРШАҒАН ТЕРІНІҢ ҚҰРЫЛЫМДЫҚ САЛЫСТЫРМАЛЫ ТАЛДАУЫ

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Экологиялық факторлар тері қабаттарының тұтастығын сақтауда маңызды роль атқарады. Генетикалық факторлардың, қоршаған орта факторларының әсерінен тері компоненттері мен ультрақұрылымында өзгерістер орын алуы мүмкін және салдарынан тері патологиясы орын алуы ықтимал. Бұл тұрғыда осы зерттеуде сау терінің меланоцитарлы невустың сипаттамасымен салыстырудағы құрылымдық түрі зерделенді. Мұндай зерттеулердің маңызы зор, себебі қазіргі уақытта меланоцитарлы невуспен ауыру деңгейінің артуы тіркелуде.

Кілт сөздер: тері, меланоцитарлы невус, құрылым