Two cases report of multispectral imaging for skin cancer assessment

A.Derjabo 1, J. Kapostinsh 1, I. Diebele 2, A. Lihachev 2
1 Latvian Oncology Centre (Riga Eastern Clinical University Hospital), 2 University of Latvia

Introduction

Malignant melanoma (MM) is the most dangerous oncological skin disease [1]. Noninvasive diagnosis is very important for melanoma early detection [2]. Multispectral imaging is a new technique for this purpose [3] and follow up.

Case 1

Patient was consulted in Latvian Oncology centre with pigmented tumor on right foot. Clinical diagnosis was confirmed by dermascopy and operation was planned. Before operation control RGB image (Fig.2.) and melanoma diagnostic parameter p map (Fig.3.) were performed.

Fig.2 - Melanoma on the right foot before operation - 15.11.10

Fig.3-Melanoma diagnostic parameter p image of tumor

On November 30, 2010 surgery was completed - tumor removing with free lever dermatoplasty. Morphological diagnosis of pigmented melanoma, Breslow 1mm, Clark II was recognized. At the follow up on September 20, 2011 recurrence was suspected. All non-invasive diagnostic applications - dermascopy, dermatoscopy and melanoma diagnostic parameter p map (Fig.5.) were performed.

Case 2

Patient was consulted in Latvian Oncology centre with pigmented tumor on left foot. Before operation control RGB image and melanoma diagnostic parameter p map were performed.

Fig.6 - Melanoma on the left foot before operation - 24.01.11

Fig.7-Melanoma diagnostic parameter p image of tumor

On January 24, 2011 surgery was completed - tumor removing. Morphological diagnosis of pigmented melanoma was recognized (Breslow 4mm, Clark IV).

In March 22, 2012 at follow up recurrence was suspected. Non-invasive diagnostic applications - dermascopy and melanoma diagnostic parameter p map were performed.

Fig.8 - Melanoma on the left foot 14month after operation

Methods demonstrated malignant changes of the skin. Second operation is planning for pacient.

Discussion

MM is a rare form of skin cancer. Highlighted case 1 demonstrates complication of diagnostics – the discrepancy between clinical (suspicion of recurrence) and histological diagnostics (non-malignant disease - seborrheic keratosis) – as well as difficulty to choose correct treatment method. Traditionally, surgery is used for MM treatment. However, in this case extensive operation with second dermatoplasty can lead to rather unsatisfactory cosmetic result and decreased the quality of life. Therefore, minimal invasive surgery method was chosen to minimize complications. Surgery was performed under local anesthesia without any local complications. In addition, the postoperative period was without complications. The patient was able to work and the quality of life was not decreased. All postoperative scars were normothrophic.

Case 2 show good results for melanoma detection and follow up after operation.

Conclusions

Multispectral-image analysis might help to recognize melanomas from other pigmented skin disease and reduce the volume of operation. Multispectral-image analysis might help to recognize melanoma recurrence at the follow up.

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References