

# Skin cancer dermatopathology in recipients of solid organ transplants.

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## Introduction

Skin cancer is a significant concern for recipients of solid organ transplants due to the immunosuppressive medications they take. These medications increase their susceptibility to developing skin cancers, leading to unique challenges in diagnosis and management. Dermatopathology plays a crucial role in understanding the histopathological features associated with these cancers and guiding appropriate treatment strategies. The most common skin cancers observed in transplant recipients include squamous cell carcinoma (SCC), basal cell carcinoma (BCC), and melanoma. Dermatopathological evaluation helps determine the type, subtype, and stage of the cancer, aiding in treatment decisions. SCCs in transplant recipients often exhibit atypical features such as dyskeratosis and invasive growth patterns. BCC may present histological variants that demonstrate increased invasiveness [1].

Melanoma in transplant recipients shows atypical histopathological features, including increased thickness and mitotic rate. The challenges in diagnosing and treating skin cancers in this population arise from the immunosuppressive effects and altered cellular morphology induced by medications. A multidisciplinary approach involving dermatologists, dermatopathologists, surgeons, oncologists, and transplant physicians is essential for effective management. Regular surveillance and early detection are crucial, and dermatopathologists play a vital role in accurate diagnosis and prognosis prediction. Further research and personalized therapies are needed to improve outcomes for skin cancer patients in solid organ transplant recipients. By emphasizing surveillance, early detection, and comprehensive care, the impact of skin cancers in this vulnerable population can be minimized.

Skin cancer is a significant concern for individuals who have undergone solid organ transplantation. The immunosuppressive medications that transplant recipients take to prevent organ rejection increase their susceptibility to developing skin cancers. Dermatopathology plays a crucial role in diagnosing and managing these cancers. This article aims to explore the types of skin cancers commonly seen in organ transplant recipients, the dermatopathological features associated with them, and the challenges faced in their diagnosis and treatment [2].

## Skin cancer types in solid organ transplant recipients

Solid organ transplant recipients are at a substantially higher

risk of developing skin cancers compared to the general population. The most common types observed include squamous cell carcinoma (SCC), basal cell carcinoma (BCC), and melanoma. SCC is the most prevalent, accounting for the majority of cases. These cancers often exhibit more aggressive behaviour, leading to a higher likelihood of metastasis and recurrence. BCC, while less aggressive, can still present challenges due to its high prevalence. Melanoma, although less frequent, has a more aggressive course and poorer outcomes in transplant recipients.

## Dermatopathological features

Dermatopathological evaluation plays a crucial role in diagnosing and characterizing skin cancers in solid organ transplant recipients. Histopathological examination aids in determining the type, subtype, and stage of the cancer, guiding appropriate management strategies. In SCC, dermatopathologists often observe features such as atypical keratinocytes, dyskeratosis, and invasive growth patterns. SCCs in transplant recipients may demonstrate increased nuclear pleomorphism and mitotic activity, suggesting a higher risk of aggressive behaviour [3].

In BCC, dermatopathological examination reveals basaloid tumor cells with peripheral palisading and clefting, which are typical features of this cancer. However, certain histological variants, such as infiltrative and micronodular subtypes, are more common in transplant recipients. These variants can display increased local invasiveness, making complete tumor removal challenging. Melanoma in solid organ transplant recipients often exhibits atypical histopathological features, including increased tumor thickness, higher mitotic rate, and ulceration. These factors contribute to the aggressive behaviour and poorer prognosis observed in this population. Additional features, such as lymphovascular invasion and nodal involvement, may be more common in transplant recipients [4].

## Challenges in diagnosis and treatment

The diagnosis and management of skin cancers in solid organ transplant recipients present unique challenges due to the complex interplay between immunosuppressive medications, the patient's immune system, and the tumor microenvironment. Immunosuppression compromises the patient's ability to mount an effective antitumor immune response, leading to increased tumor growth and invasiveness. Histopathological evaluation may be challenging in these patients due to alterations

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in cellular morphology induced by immunosuppressive medications. Immunosuppressive drugs can cause changes in keratinocyte and melanocyte nuclei, making it more difficult to differentiate between benign and malignant lesions. This necessitates close collaboration between dermatologists and dermatopathologists to ensure accurate diagnoses.

The management of skin cancers in transplant recipients requires a multidisciplinary approach involving dermatologists, dermatopathologists, surgeons, oncologists, and transplant physicians. Treatment options may include surgical excision, Mohs micrographic surgery, topical therapy, radiation therapy, and systemic therapies. The choice of treatment depends on various factors such as tumor type, stage, location, and the patient's overall health. Regular surveillance and early detection are crucial in this population to identify skin cancers at their earliest stages. Dermatologists often perform full-body skin examinations on transplant recipients, monitoring for suspicious lesions and providing education on self-examination. Dermatopathologists play a vital role in evaluating the histopathological characteristics of biopsy specimens to guide treatment decisions and predict prognosis accurately [5].

## Conclusion

Skin cancers in recipients of solid organ transplants pose significant challenges due to the immunosuppressive environment and altered tumor behaviour. Dermatopathology plays a crucial role in the diagnosis and management of these cancers by providing valuable information on tumor type, subtype, and stage. Close collaboration between

dermatologists and dermatopathologists is essential to ensure accurate diagnoses and appropriate treatment strategies. Advances in research and personalized therapies are needed to improve outcomes for this vulnerable population. With continued surveillance, early detection, and comprehensive multidisciplinary care, the impact of skin cancers in transplant recipients can be mitigated.

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