

Surgery for

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Skin cancer is the commonest malignancy in the Maltese population and its incidence is rising. Surgery remains the main therapeutic modality in the clinical management of malignancies of the skin. Different forms of skin cancer require varying surgical solutions, depending on the type of cancer, its anatomical site, risk of spread and the presence of any metastases. This article aims to give a brief overview of the various common types of skin cancer and the relevant surgical options available.

Increased longevity and sun exposure are the two principal reasons for the rise in the incidence of skin cancers which we are witnessing. Although there are many different types of neoplasms arising within the skin, the three

commonest malignancies of skin are Basal Cell Carcinoma (BCC), Squamous Cell Carcinoma (SCC) and Malignant Melanoma (MM). Skin cancer may arise in any age group. However, BCCs and SCCs tend to be commoner in the older population. Melanoma is the least common form of skin cancer but it is the most significant due to its potential to metastasise via the lymphatic or haematogenous routes. The incidence of MM is doubling every ten years, with peaks in the 35 - 55 and over 65 age groups. Although several aetiological factors have been implicated, the main cause is undoubtedly sun exposure leading to malignant transformation in a pre-existing naevus. People with atypical naevi, giant naevi and fair skin are at an increased risk of developing the disease.

Basal Cell Carcinoma

BCCs are the commonest skin cancers. Their presentation varies depending on whether they are cystic, ulcerated, pigmented or morphoeic in appearance. Pigmented lesions may be confused with malignant melanoma, leading to uncertainty in diagnosis. BCCs rarely metastasise. Surgery therefore consists of complete local excision of the tumour in three dimensions i.e. around the lesion as well as beneath it. In the majority of cases, as long as the tumour is completely excised, it is not necessary to excise widely, the exception being cases of morphoeic BCCs where the margins are indistinct. Excision margins of about 5 millimetres all around the tumour are usually sufficient to ensure clearance. Where possible, the wound is closed directly. However, in the case of large tumours or at anatomical sites where there is very little skin laxity such as on the lower leg, a skin graft or flap reconstruction may be necessary.

Squamous Cell Carcinoma

SCCs are also common tumours of skin. They have a greater potential to metastasise than do BCCs. However, the vast majority never exhibit such spread and surgery is therefore similar to that for BCCs in dealing with the primary tumour, excision margins being slightly wider at 5 - 10 millimetres. It is essential however to examine the regional lymph nodes for possible tumour spread. If this is detected, lymph node dissection is indicated in order to control the metastases, prevent further spread of the disease and hopefully ensure complete cure. SCCs frequently arise on the lips. In these cases, wide local excision in the form of a wedge resection is often possible. It may occasionally be

necessary to excise the whole vermilion border of the lip when dysplastic changes are widespread. Reconstruction may then take the form of a mucosal advancement from inside the mouth to reconstitute the lip margin. Where a lip tumour has invaded extensively, flap reconstruction is necessary to restore appearance and function as much as possible.

Malignant Melanoma

There are various types of malignant melanoma, namely:

1. **Lentigo maligna** (Hutchinson's melanotic freckle) – an early melanoma with a good prognosis typically occurring in older patients, most commonly on the face, upper trunk and arms. This may be considered as an in-situ tumour.
2. **Superficial spreading melanoma** – the commonest form of melanoma where the tumour is in a radial growth phase i.e. it is spreading along the surface of the skin prior to deeper invasion. This is a thin tumour commonly arising on the trunk and legs.
3. **Nodular melanoma** – the tumour has gone from a radial to a vertical growth phase i.e. it becomes deeply invasive and therefore has a greater potential to metastasise.
4. **Acrall lentiginous melanoma** – these arise on the palms of the hands, soles of the feet and subungually and are said to be more aggressive in their behaviour.
5. **Amelanotic melanoma** – these are not pigmented, possibly due to spontaneous regression related to an individual's immune response to the

tumour. This makes clinical diagnosis more difficult and regression means that it is impossible to accurately determine the depth / thickness of the tumour.

The two pathological classifications depend on the depth of invasion in the skin and on the tumour thickness in millimetres.

Clark's classification

Level I	confined to epidermis
Level II	dermoepidermal junction
Level III	invading papillary (superficial) dermis
Level IV	reaching reticular (deep) dermis
Level V	breaching the skin and invading subcutaneous fat

Breslow's classification (measures the tumour thickness in millimetres).

Up to 0.75 mm	(comparable to Clark Level II)
> 0.75 - 1.5 mm	(comparable to Clark Level III)
> 1.5 - 4.0 mm	(comparable to Clark Level IV)
> 4.0 mm	(comparable to Clark Level V)

Both classifications are prognostic indicators of survival as the deeper the tumour, the more likely it is to metastasise.

The mainstay of management of malignant melanoma remains surgery. Following excision biopsy, wide local excision is performed, with surgical margins depending on Breslow's thickness of the tumour. Although several studies are ongoing to determine the ideal width of

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clearance, a useful guide is the following:

Tumour < 1.0 mm thick	1.0 centimetre margins all around
Tumour 1.0 - 3.0 mm	2.0 centimetre margins all around
Tumour > 3.0 mm	3.0 centimetre margins all around

The resultant defect is closed either directly whenever possible or by means of a split skin graft (SSG). In cases of MM affecting the lower limbs, the SSG is harvested from the contralateral thigh in order to avoid in-transit metastases in the graft donor site. Wide local excision only prevents local tumour recurrence and does not affect the survival rate. Presumably the tumour has already metastasised prior to excision in cases that develop regional or disseminated disease. Metastatic skin nodules are treated by excision and regional nodal metastases by block dissection.

Sentinel lymph node biopsy may be carried out at the time of wide local excision in order to determine the need for formal lymph node dissection in the absence of palpable / enlarged regional lymph nodes. A dye or radioactive marker is injected into the skin around the site of the primary MM. Following sufficient time for lymphatic uptake of the marker, the regional nodes are explored and the draining sentinel node identified visually or by means of a Geiger counter. This is excised and submitted for immediate histological examination. If it is negative for tumour, no further surgery is indicated. However,



if it is positive for micrometastases, a block dissection of all the regional nodes is carried out. ☐

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