Skin Cancer Management

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This article has been selected by the Editorial Board of the Hong Kong Medical Diary for participants in the CME programme of the Medical Council of Hong Kong (MCHK) to complete the following self-assessment questions in order to be awarded one CME credit under the programme upon returning the completed answer sheet to the Federation Secretariat on or before 31 July 2008.

Introduction

Skin cancer is usually not a life threatening condition but yet causes disfigurement. There is compelling evidence that radiation damage to DNA is the cause of squamous cell carcinoma and perhaps basal cell carcinoma. Hence 95% of the skin cancers happen in the head, neck and hand area. Ablative surgery and reconstruction, radiotherapy or their combination are the common treatment modalities. Due to the compact nature of the face, reconstruction for form and function are necessary in order to optimise patients’ quality of life after treatment. Factors dictating the degree of complexity of surgery are the lesion size, site, facial subunits involvement and if important organs are affected. Early identification of cancer and availability of reconstruction options are important for optimising the result.

Common Skin Cancers

The commonest skin cancer is Basal cell carcinoma (BCC). Squamous cell carcinoma (SCC) accounts for a quarter of BCC incidence. Melanoma is uncommon in the Chinese locality and yet the common occurrence of naevi in Chinese raises the concern in the pigmented lesions by patients. Careful examination and in depth explanation is necessary to alleviate patients’ concern.

Basal Cell Carcinoma (BCC) Fig 1

BCC is the commonest malignant tumour of skin. It is a slow growing malignancy arising from the stratum basalis. It is also known as rodent ulcer or “mariner’s disease in the 19th century. According to the Tasmanian Cancer Registry1 in Australia, the incidence was 161/100,000 per year. Most of them occur between the ages of 40 to 80. 85% occurs in highly exposed area such as head and neck, back of hands, lower limbs in women and ears in men. Though it is thought to be a non-metastatic tumour, yet over 200 cases of metastatic BCC have been recorded.

BCCs are classified as localised, superficial or infiltrative types. Diagnosis can usually be made from the slow clinical course and the appearance of a pearl like pinkish lesion with telangiectasia at the periphery. In Chinese, pigmented BCC with the appearance of an ulcerative mass is a common presentation. Incisional biopsy is useful in case the definitive diagnosis is necessary when major reconstruction is anticipated.

Surgical excision with a 2 - 5mm margin is adequate. Lesions with indistinct margins require wider excision. For instance, BCC less than 1cm in diameter in a low risk area, a surgical margin of 4mm of normal skin gives 98% clearance2. For primary BCC excision, up to 30% of the specimen showed incomplete excision. When deep margin is involved, re-excision is advocated as the monitoring for recurrence is more difficult. Only 30% of the re-excision of incomplete excised tumour showed tumour. So this has to be discussed during the informed consent for re-excision. Mohs’ surgery is useful in achieving histological control of excision margins using frozen section analysis. It is the treatment of choice for recurrent (previously treated) BCC3, though it involves a longer surgery and on-site pathological margin examination. This is the safest way to preserve most of the surrounding tissues without compromising the margin. Lesions smaller than 1cm can be treated with superficial radiotherapy and the efficacy is comparable to surgery. Cryotherapy, curettage, and 5 fluoro-uracil creams are used for multiple superficial lesions, which are more common in Caucasians.
Squamous Cell Carcinoma (SCC) Fig 2

SCC originates from the stratum spinosum of the epidermis. Sun exposure is the most important environmental risk factor. It often occurs in an area of abnormal skin due to sun damage, keratin horn, and actinic keratosis. Face, scalp and dorsum of hands are the common involved areas. Clinical appearance depends on the degree of differentiation of the tumour. Well differentiated SCCs exhibit keratin horns while less well differentiated lesions are fresh and ulcerated. Incision biopsy is necessary if a definitive diagnosis is needed as differential diagnosis would include verruca vulgaris, actinic keratosis and Bowen's disease. Regional lymph nodes should be checked carefully and additional radiology studies are necessary if in doubt clinically.

SCCs are prone to local recurrence and metastasis. Well differentiated SCCs have a 7% risk of local recurrence while poorly differentiated lesions have a 28% risk of local recurrence rate. Overall occult lymph node metastasis at time of presentation is 2-3%.

Surgical excision with a margin of 0.5 to 1cm is recommended in most cases. Bad prognostic factors are increased depth of invasion, vascular, perineural and lymphocytic infiltration. Regional lymph node dissection is necessary when lymph node metastases are evident. Radiotherapy is used as an adjunct therapy when the lesion is greater than 2cm or histology shows perineural spread4.

Patients should be followed up regularly to check for local and regional recurrence.

Melanoma Fig 3

Melanoma is the most deadly form of skin cancer, affecting 51400 Americans and killing more than 7800 in the year 2001. The incidence is doubled since 1970 and there is a high occurrence rate for Caucasians living in Queensland, Australia with the rate 1 in 14. The incidence of melanoma in Chinese remains low with 43 primary cutaneous melanomas during the 19-year period from 1964 to 19825. There are pre-malignant conditions such as atypical naevus syndrome. Yet most melanomas occur in atypical naevus syndrome arise de novo instead from pre-existing moles. Therefore prophylactic removal of abnormal naevi does not improve survival.

The clinical types of melanoma in Caucasians include superficial spreading (60%), nodular (30%), arising from lentigo maligna (7%), Amelanotic (<1%) and Acral lentiginous (<2%). Chinese patients usually have acral lentiginous types with most of them arising on palms or soles or the subungual area. Clinical appearances for melanoma are Asymmetry (A) in diameter, irregular Border (B), irregular Colour (C) and Diameter (D) larger than 6mm.

The subsequent management and prognosis depend on the Breslow thickness. Other staging techniques such as Clark's level, TMN staging are less commonly employed. Differential diagnoses include acquired melanocytic naevi, dysplastic naevi, dermal melanocytoses, pigmented BCCs, pigmented actinic keratosis. The diagnostic confirmation is excisional biopsy with a margin of 2mm. This can confirm the diagnosis and assess the Breslow thickness. Incisional or shaving biopsy should not be performed in suspected melanomas as this will make the Breslow thickness assessment impossible.

Surgical excision6 is the mainstay of treatment. The recommended excision is as in Table 1.

Prophylactic lymph node dissection for primary cutaneous melanoma of intermediate thickness (tumour 1-4mm thick) showed no survival benefit in prospective randomised clinical trials. Sentinel lymph node biopsy enhances metastatic staging for patients with intermediate-thickness or deeper primary melanomas and provides a more accurate determination of the patients' prognosis. Its therapeutic benefit has not yet been established.

Although chemotherapy is generally not effective for melanoma, it is used for symptom relief or survival extension in some stage IV patients. Immunotherapy drugs such as interferon alpha and interleukin 2 may be used in combination with chemotherapy. Radiation therapy is not commonly used to treat primary tumour of melanoma but may be considered as an adjuvant therapy in some patients and in recurrence conditions.
Reconstruction

Reconstruction after ablation surgery is crucial as its availability can allow uncompromised margin of excision of the tumour. The head and neck are common areas for the occurrence of skin tumours. The face in particular is compact in form and functions. Asymmetry and obvious scar after surgery will greatly affect the patients’ satisfaction after surgery and hence options in reconstruction are necessary to provide the optimal aesthetic results.

Options of reconstruction depend on the characteristics of the area to be treated. These are the number of aesthetic units involved, thickness of tissue to be reconstructed, the possibility of realignment of scar along the line of resting skin tension or the sym line of the facial aesthetic units. Methods of reconstruction ranges from primary closure, secondary healing, skin grafting, local flaps, pedicle flaps and distant flaps.

Small lesions over the forehead and cheek can generally be closed primarily along the line of resting skin tension with satisfactory results. Though defects less than 4mm diameter over the tip of the nose can be allowed to heal secondarily with good cosmetic result, post excision of tumours with adequate margins often renders local flaps such as bilobed flap. Temporal area skin defects can be reconstructed with skin grafting. Commonly performed local flaps on the face include the rhomboid flap and advancement flap. Free flaps depend on the bulk of tissues required. The free radial forearm flap is still the work horse for thin tissue coverage while the anterolateral thigh flap is useful for bigger tissue coverage.

Conclusion

Skin lesions are common complaints during consultation and skin cancer should be considered as one of the differential diagnoses. BCCs and SCCs are the commonest skin tumours. Though they are usually not devastating to life, yet late treatment will cause more morbidity to the patients’ appearance and various reconstruction methods would help in optimising the aesthetic results.

References


Table 1

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<thead>
<tr>
<th>Breslow thickness</th>
<th>Excision margin</th>
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<tbody>
<tr>
<td>Melanoma in situ</td>
<td>Complete excision with margin of 5 - 10mm</td>
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<tr>
<td>&lt;1mm</td>
<td>10mm</td>
</tr>
<tr>
<td>1-2mm</td>
<td>10mm - 20mm</td>
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<tr>
<td>&gt;2mm</td>
<td>20mm</td>
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MCHK CME Programme Self-assessment Questions

Please read the article entitled "Skin Cancer Management" by Dr. Peter CW Pang, and complete the following self-assessment questions. Participants in the MCHK CME Programme will be awarded 1 CME credit under the Programme for returning completed answer sheets via fax (2865 0345) or by mail to the Federation Secretariat on or before 31 July 2008. Answers to questions will be provided in the next issue of The Hong Kong Medical Diary.

Questions 1-10: Please answer T (true) or F (false)

1. Sun exposure is one of the important risk factors for the development of squamous cell carcinoma.
2. Most of the skin cancers happen on the back.
3. The complexity of reconstruction after ablative surgery for skin cancer on the face depends on number of facial subunits involvement.
4. Basal Cell Carcinomas in Chinese patients are sometimes pigmented.
5. Basal Cell Carcinomas never metastasis.
7. Mohs surgery must be used in excision of all Basal Cell Carcinoma.
8. Squamous Cell Carcinoma always have keratinized surface.
9. Melanomas occurs in patients with atypical naevus syndrome are arising from the pre-existing naevus.
10. Suspected melanoma should undergo excisional biopsy.
11. Post ablative surgery for BCC over forehead with a defect of one centimeter should allow to heal with secondary intention.