

Original Article

Cutaneous melanoma: clinical features of 32 Hong Kong Chinese patients

皮膚黑色素細胞瘤：32 例香港華人患者的臨床表現

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Cutaneous melanoma is an important disease entity for its potential fatality and its urgency of timely management. As tumour thickness is one of the most important prognostic factors and early recognition with definitive surgery provides the only chance of cure for cutaneous melanoma, health care workers are expected to be familiar with the early presentation of this malignant condition. The present study reviewed 32 patients with cutaneous melanoma in dermatology clinics of the Social Hygiene Service (SHS). It was found that the foot was the site of predilection (46.9%). Change in size and colour were the commonest presenting symptoms (84% and 44% respectively). Acral lentiginous melanoma was the commonest histological type (34.5%).

由於皮膚黑色素細胞瘤有潛在的病死風險以及需要迫切的適時處理，故本病十分重要。因腫瘤的厚度為其中一個最重要的預後因素，而早期診斷及徹底切除為根治本病的唯一方法，醫務人員均望能熟知本病的早期表現。本文對社會衛生科皮膚專科診所中 32 例皮膚黑色素細胞瘤患者進行研究。足部為最常見的發病部位(46.9%)。患處大小及顏色改變為最常見症狀(為 84% 及 44%)。肢端雀斑痣型為最常見的病理類型(34.5%)。

Keywords: Chinese, clinical features, cutaneous melanoma

關鍵詞：華人，臨床表現，皮膚黑色素細胞瘤

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Introduction

Cutaneous melanoma is much less common among Asians, including Chinese, than Caucasians. However, the case fatality ratio is higher in Asians.¹ As tumour thickness is one of the most important prognostic factors of cutaneous melanoma, early recognition with definitive surgery provides the only chance of cure to patients with cutaneous melanoma. Health care workers are expected to be familiar with the early presentation of this malignant condition.

Objective

The objective of the present study is to collect pertinent clinical information from patients with cutaneous melanoma, focusing on the following clinical features: demographic data, site and size of the lesions, presenting symptoms and signs, duration of symptoms, prevalence of pre-existing pigmented skin lesions, and pre-biopsy diagnoses.

Materials and methods

This is a retrospective review of patients with biopsy proven cutaneous melanoma in dermatology clinics of the Social Hygiene Service (SHS) between 1 July 1991 and 30 June 2003.

Patient selection

Target groups

All Chinese patients with histology confirmed primary cutaneous melanoma diagnosed between 1 July 1991 and 30 June 2003 were selected.

Inclusion and exclusion criteria

Skin biopsy reports from nine SHS clinics were reviewed using the following keywords: Melanoma, lentigo maligna, lentigo maligna melanoma, and in-situ melanoma. Forty-two skin biopsy reports could be retrieved. Further analysis was performed and ten cases were excluded

including five cases of non-Chinese patients, two cases of metastatic melanoma and three cases with no retrievable record. As a result, thirty-two case records of Chinese patients with primary cutaneous melanoma were retrieved for the current study.

Cases review

All 32 cases were invited for a comprehensive review. However, three patients could not be traced; the remaining 29 cases were reviewed based on four parameters as follows:

Clinical assessment

Sixteen patients could attend the interview in person. The interview included a complete physical examination with particular attention to complete skin examination and lymphadenopathy. An interview form (Appendix 1) was also filled during the interview.

Telephone interview

Thirteen cases were reviewed by telephone. Among these, six patients and relatives of seven deceased patients received the interview.

Record review

Retrieved case records were thoroughly reviewed. Clinic record review forms (Appendix 2) were filled.

Histopathology slides review

The pathological features of the skin biopsies from all melanoma cases were reviewed with the generous help and supervision from senior pathologists.

Results

The age of these 32 patients ranged from 23 to 86 years, with a mean of 57.6 years. There were 15 male and 17 female patients respectively.

Sites of predilection

In the study, the feet was found to be the most common site of involvement with 15 cases

(46.9%) occurred on the foot (Figure 1). This included 10 cases on the sole and five cases on the toes. Of the five cases on the toes, all occurred on big toes, with three volar and two subungal cases.

Size of melanoma at presentation

23 out of the 32 clinical records noted down the size of the tumour at presentation. The majority of the tumours were 1 to 3 cm in diameter on presentation (Figure 2).

Symptoms of melanoma at presentation

The most common presenting symptom was a pigmented lesion of changing size, followed by a change in colour of the lesion and pain or tenderness (Figure 3).

Signs of melanoma at presentation (Figure 4)

The tumour presented as papulo-nodules or masses in approximately 45%; as flat topped plaques, macules or patches in approximately 45%. Irregularity of border and variegation in

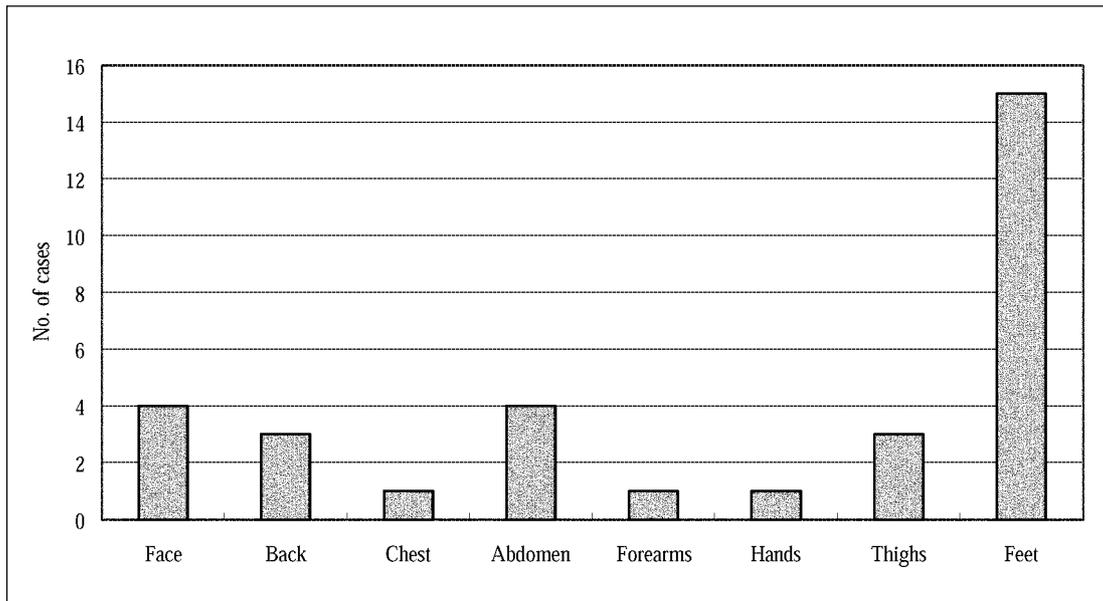


Figure 1. Sites of predilection of melanoma in 32 Chinese patients in SHS clinics in Hong Kong.

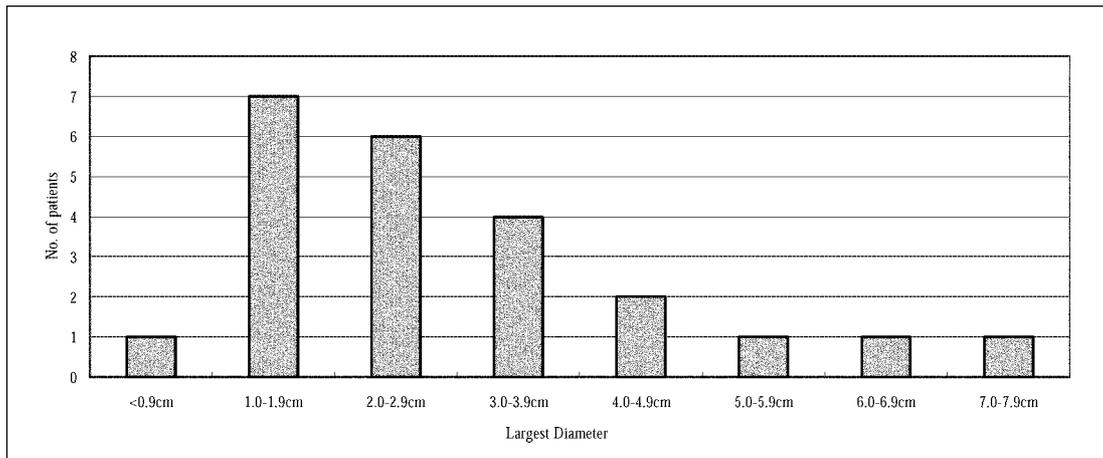


Figure 2. Size of melanoma at presentation in the SHS patients.

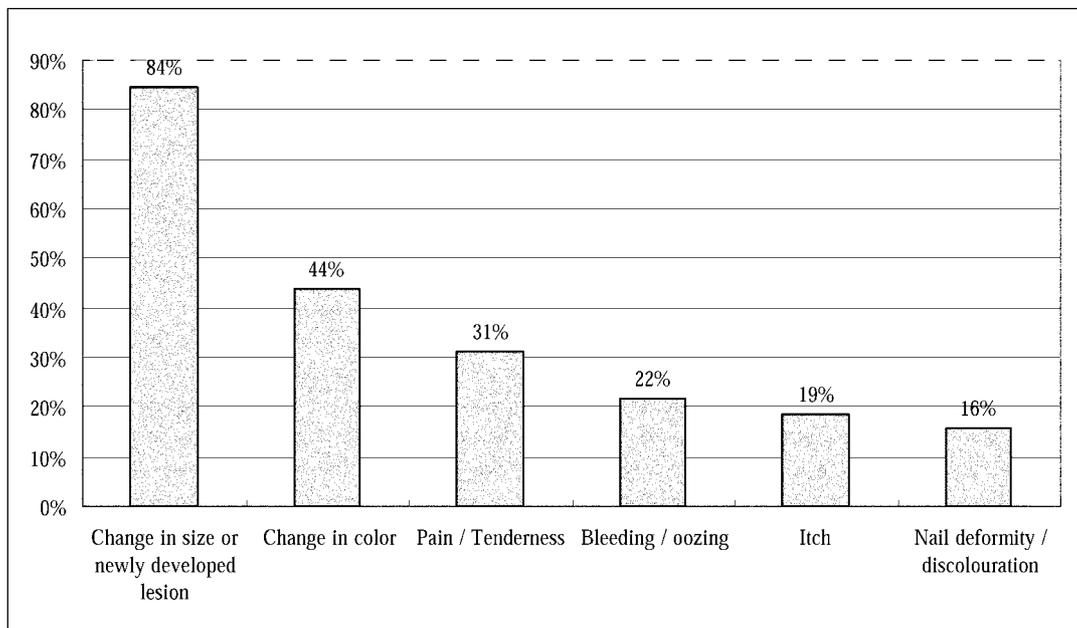


Figure 3. Presenting symptoms of melanoma in patients from SHS Clinics in Hong Kong.

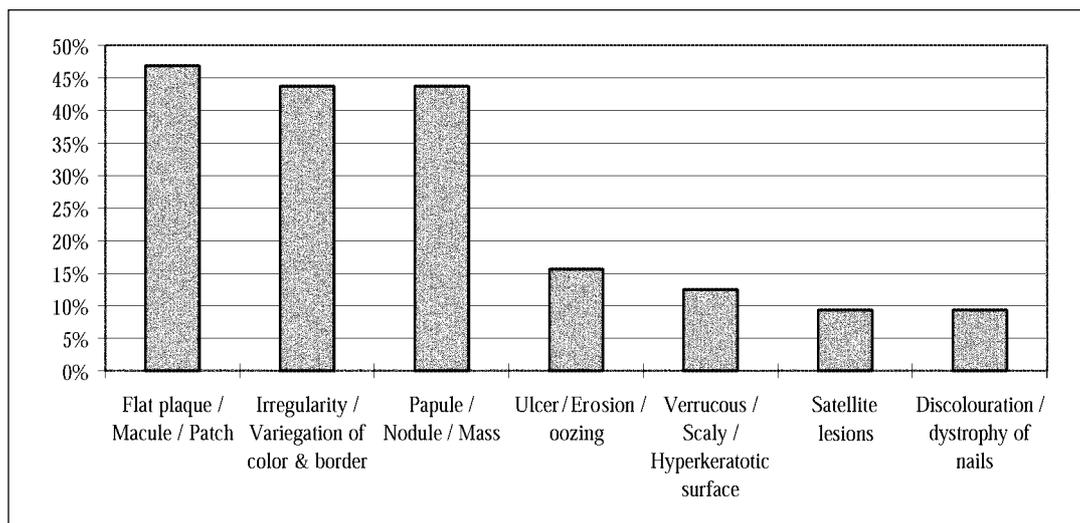


Figure 4. Presenting signs of melanoma in patients in the SHS Clinics in Hong Kong.

colour occurred in about 45%. Occasionally, the lesion lacked pigmented component, mimicking pyogenic granuloma.

Pre-existing pigmented skin lesions (PSL)

Pre-existing pigmented skin lesion is defined as a pigmented skin lesion found by patient as an asymptomatic naevoid lesion without any change in size, in colour or shape. It occurred in 34% (N=11) of patients.

The duration of such pre-existing pigmented skin lesions ranged from 2 to 60 years (Table 1).

Duration of symptoms

The duration of symptoms is defined as the duration of the existence of a symptomatic or changing lesion (in size, colour or shape). About one quarter of the patients experienced symptoms which lasted for two to four years (Table 2).

Pre-biopsy diagnosis

The pre-biopsy first differential diagnosis was melanoma in 60% of cases (N=19). Melanoma was included in 84% of cases (N=27) in the first three differential diagnoses.

In the five cases that melanoma was not included in the differential diagnosis, the first differential diagnoses were melanocytic naevus (3 cases), seborrhoeic keratosis (1 case) and pyogenic granuloma (1 case) respectively (Table 3).

Clinical and pathological types

Melanoma in-situ (34%), acral lentiginous (22%) and nodular melanoma (16%) are the three commonest pathological sub-types, followed by

superficial spreading melanoma (9%) and lentigo maligna melanoma (3%). Sixteen percent of cases were unclassifiable.

When melanoma in-situ was further classified into sub-types, invasive acral lentiginous melanoma (22%) plus acral lentiginous melanoma in-situ (12.5%) were the commonest type (34.5%), followed by nodular melanoma (16%) and superficial spreading melanoma (12%), (9% invasive superficial spreading melanoma and 3% superficial spreading melanoma in-situ).

Discussion

Clinical features

Sites of lesions

The site distribution of melanoma has been useful in understanding its aetiology. Most western studies have shown that intermittent sun exposure on unexposed skin is important in the aetiology of melanoma. In studies of Caucasian populations, nearly 70% of melanomas are superficial spreading type primarily occur on the upper back in males and lower extremities in females.²

In Asians, the commonest site of involvement is the foot, including soles and toes. The commonest site of predilection in some Asian studies are showed in Table 4, showing that the foot is the commonest site of predilection in all of them.³⁻⁸

In the present study, the commonest site of predilection is on the foot, accounting for 46.9% (N=15). This characteristic anatomical distribution of cutaneous melanoma among Asians as compared to Caucasians may hint that different aetiological factors are present among different ethnic groups. Researchers working on non-Caucasian populations should stay alert to potential risk factors other than the known risk factors generated mainly from studies on Caucasians.

Table 1. Duration of pre-existing pigmented skin lesions

Duration in years	Number of patients
<10	3
>10, <=20	4
>20, <=40	2
>40	2

Table 2. Duration of symptoms

Duration in months	Number of patients
<12	5
12-23	5
24-47	8
>48	4

Table 3. Pre-biopsy first differential diagnosis in 32 patients with melanoma

First differential diagnosis before biopsy	Number of cases
Melanoma	19
Naevus	3
Seborrhoeic keratosis	3
Squamous cell carcinoma	2
Pigmented basal cell carcinoma	2
Keratoacanthoma	1
Pyogenic granuloma	1
Melanonychia	1

Table 4. The percentage of cases with feet as the site of predilection in studies of cutaneous melanoma in Asians, by descending order

Areas	Cases	Percentage	Year	Author
Taiwan	35/51	68.6%	1999	Chen YJ et al ³
Hong Kong	42/63	66.7%	2004	Luk NM et al ⁴
Hong Kong	24/43	55.8%	1984	Collins RJ et al ⁵
Western China	143/305	46.9%	2004	Sun DJ et al ⁶
Hong Kong	15/32	46.9%	2004	Current study
Singapore	12/27	44.4%	2001	Tan E et al ⁷
Hukuoka	29/67	43.3%	2001	Xia JX et al ⁸

Duration

The proportion of melanoma arising in pre-existing naevus has been estimated to be 10-50%.⁹ But the actual percentage is uncertain because it is almost impossible to retrospectively ascertain when the pre-existing naevus has changed into a melanoma. Clinically, it is also almost impossible to know that if the lesion was a melanoma from the very beginning or it is a melanoma arising from a pre-existing naevus. Therefore, the duration of disease can only be arbitrarily defined. It can be defined as from the occurrence of evidence of diseases to the time of making the diagnosis. The evidence of disease is defined as the occurrence of change in the behaviour of a pre-existing naevus or a newly found lesion.³

Symptoms and signs

Melanomas typically have a history of change over a period of three to 12 months, but there is much variability in the duration of changes reported by patients with melanomas. Features classically observed are: 1) change in colour; 2) change in shape; 3) elevation of the lesion; and 4) bleeding as a result of minor trauma. Women are more likely to recognise the early changes of melanoma. About 20% of patients reported itch.¹⁰⁻¹⁴

The American "ABCD" mnemonic and the Glasgow seven-point checklist are useful guides to detect suspicious melanoma cases.^{12,14,15} The former uses "A" to represent asymmetry, "B" for

border irregularity, "C" for colour variegation and "D" for diameter greater than 6 mm. The latter includes three major (change in size, change in shape and change in colour) and four minor features (diameter more than 6 mm, presence of inflammation, oozing or bleeding and mild itch or altered sensation).

In our study, more than 80% of patients had change in size or a newly developed lesion. More than 40% had change in colour. Around 30% had pain or tenderness. Around 20% had bleeding and around 20% had itch. The overall presentations are similar to that in Caucasian patients.

Clinicopathological type of cutaneous melanoma

In 1969, Clark et al suggested that melanoma could be divided into three main subsets, namely nodular melanoma (Figure 5), superficial spreading melanoma (Figure 6) and lentigo maligna melanoma, by using a combination of clinical and pathological features. In 1975, Reed et al added a fourth group, the acral lentiginous melanoma (Figure 7).¹² However, this classification system has lost some credence over time because the biological behaviour of these lesions is essentially unrelated to the morphological name applied to the lesion,^{16,17} and the prognosis of melanoma is related to Breslow's tumour thickness rather than the traditional classification system.^{17,18} Argument has been made



Figure 5. Nodular melanoma over back.



Figure 6. Superficial spreading melanoma over the thigh, with two years history of increasing size of a pre-existing pigmented skin lesion.



Figure 7. The lesion with asymmetry, border irregularity, colour variegation with a diameter of more than 6 mm on the left sole a patient.

that such categorisation has limited value.^{11,19,20} According to the traditional classification, about 10-20% of melanomas commonly prove difficult to be sub-categorised.²⁰ Another approach to the pathological classification of melanoma has been proposed by Barnhill. In his proposed system, melanomas are classified into two main categories: convention melanoma and other unusual variants. In our study, the Clark's classification system was used for it is commonly encountered in the literature and most textbooks.²¹⁻²⁴

In the present study, the three commonest types were melanoma in-situ (34%), acral lentiginous (22%), and nodular (16%) melanoma, not including the unclassifiable melanoma (16%). Within the 34% (N=11) of melanoma in-situ, 12.5% (N=4) were acral lentiginous melanoma in-situ, 3% (N=1) was superficial spreading melanoma in-situ, 18.8% (N=6) were unclassifiable melanoma in-situ. When melanoma in-situ was further classified into acral lentiginous melanoma in-situ, superficial spreading melanoma in-situ and unclassifiable melanoma in-situ, invasive acral lentiginous melanoma (22%) plus acral lentiginous melanoma in-situ (12.5%) were the commonest type (34.5%), followed by nodular melanoma (16%) and superficial spreading melanoma (12%), (9% invasive superficial spreading melanoma and 3% superficial spreading melanoma in-situ). It was different in Caucasian population that the commonest type was superficial spreading melanoma (70%), followed by nodular melanoma (15-30%) and lentigo maligna melanoma (up to 15%).^{11,24}

Dermatologists are playing an increasingly important role in the management of cutaneous melanoma than before. Earlier detection of melanoma could reduce the necessity of extensive surgical procedures such as skin flap / graft and amputations, which are performed by surgeons. Furthermore, the traditional wide local excision is

less performed currently. Historically, a wide local excision with a margin of 5 cm for primary lesions of melanomas was considered as a standard treatment. This practice was kept until large randomised control trials showed that narrower surgical margin provided comparable outcomes.^{10,11,25} As a result, most early stage melanoma can nowadays be managed by dermatologist with excision of the lesion followed by a primary closure. On the other hand, in Hong Kong, many of the melanomas present on acral area of limbs and are therefore commonly managed by orthopaedic or plastic surgeons. Lately, the development of dermoscopy gives dermatologist a useful tool for early detection of melanomas while reducing the number of unnecessary biopsies.^{10,11}

Cutaneous melanoma can be cured at its earliest stage, but it may confer severe morbidity and lethal outcome upon patients if it is detected late (Figure 8). Dermatologists are at the forefront in the fight against this potentially lethal disease.

There are some limitations in the present study. Firstly, these 32 patients of the present study only included the patients with melanoma attending SHS clinics from 1 July 1991 to 30 June 2003, which was estimated to account for 5% of all new case of cutaneous melanoma in Hong Kong within this period.²⁶ Secondly, patients with more



Figure 8. Amelanotic melanoma on left sole.

advanced lesions may be referred to hospitals instead of being referred to SHS clinics, therefore, the clinical features we presented here may only represent patients with relatively early manifestations.

Conclusions

The finding of the present study showed that the most common site of involvement by melanoma in local patients was the feet, especially the soles and toes in both sexes. As a result, pigmented skin lesions over the feet in local Chinese should alarm both patients and clinicians on the possibility of melanoma, especially when the lesions present with changing nature as shown in the present study. Biopsy with early excision may offer the best chance of cure for this potentially lethal disease.

A major difference between cutaneous melanoma among Chinese and Caucasian is the site of predilection. As the foot is basically a ultraviolet light un-exposure area; it implies that risk factors other than ultraviolet radiation may play a more important role for the pathogenesis of cutaneous melanoma in Chinese.

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Appendix 1. Patients' interview form*A. Personal Data*

1. Name
2. Name in Chinese
3. ID No.
4. DOB
5. Sex
6. Telephone (Res)
7. Telephone (Port)
8. Place of Birth
9. Place of Birth (Father)
10. Place of Birth (Mother)
11. Origin

B. History

1. Skin Malignancies
2. Other Malignancies
3. Immunosuppressive Rx
4. Sun Burn
5. Recreational Sun Exp. (hr/wk)
6. Occupational Sun Exp. (hr/wk)
7. Skin Malignancies in 1st degree relatives
8. Pre-existing mole
9. Giant CMCN (>5% BSA)
10. Large CMCN (>=20 cm)
11. Change in Size
12. Change in Shape
13. Change in Colour
14. Ulceration

15. Bleeding
16. Site of lesion
17. Diabetes mellitus
18. Hypertension
19. Tinea pedis
20. Tinea unguium
21. Presenting symptom
22. Date of 1st definite Rx
23. Place of 1st definite Rx
24. Follow up institution
25. Last Fu
26. Next Fu

C. Physical examination

1. PSL >1.5cm
2. PSL >25
3. Solar lentiginos
4. Facial telangiectasia
5. Actinic elastosis
6. Actinic keratosis
7. Actinic purpura
8. Tinea pedis (Clinical)
9. Tinea unguium (Clinical)

D. General Phx

1. Long term Fu
2. Long term medications
3. Other operation

Abbreviation:

ID No: identity card number; DOB: date of birth; Rx: therapy; Sun Exp.: sun exposure; CMCN: congenital melanocytic naevi; BSA: body surface area; Fu: follow-up; PSL: pigmented skin lesion; Phx: past history

Appendix 2. Clinical record review form

A. Personal Data

1. Name
2. Name in Chinese
3. ID No.
4. DOB
5. Sex
6. Telephone (Res)
7. Telephone (Port)
8. Place of Birth
9. Place of Birth (Father)
10. Place of Birth (Mother)
11. Origin

B. History

1. Skin Malignancies
2. Other Malignancies
3. Immunosuppressive Rx
4. Sun Burn
5. Recreational Sun Exp. (hr/wk)
6. Occupational Sun Exp. (hr/wk)
7. Skin Malignancies in 1st degree relatives
8. Pre-existing mole
9. Duration of pre-existing PSL
10. Duration of symptom to Bx
11. Giant CMCN (>5% BSA)
12. Large CMCN (>=20 cm)
13. Change in Size
14. Change in Shape
15. Change in Colour
16. Ulceration
17. Bleeding

18. Other present in symptom
19. Site of lesion
20. Diabetes mellitus
21. Hypertension
22. Tinea pedis
23. Tinea unguium
24. Presenting symptom
25. Date of 1st definite Rx
26. Place of 1st definite Rx
27. Follow up institution
28. Last Fu
29. Next Fu

C. Physical examination

1. Size of lesion
2. Clinical type
3. PSL >25
4. PSL >1.5cm
5. Solar lentigines
6. Facial telangiectasia
7. Actinic elastosis
8. Actinic keratosis
9. Actinic purpura
10. Tinea pedis (Clinical)
11. Tinea unguium (Clinical)

D. General past health

1. Long term Fu
2. Long term medications
3. Other operation

Abbreviation:

ID No: identity card number; DOB: date of birth; Rx: therapy; Sun Exp.: sun exposure; PSL: pigmented skin lesion; Bx: biopsy; CMCN: congenital melanocytic naevi; BSA: body surface area; Fu: follow-up;