

CLINICAL STUDIES

Melanoma in Situ in Puerto Rico: Clinical Characteristics and Detection Patterns

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The incidence of melanoma has been increasing worldwide since the early 1960's. Melanoma in situ in the earliest stage of melanoma which has been increasingly recognized in our population.

We performed a retrospective study of the cases of melanoma in situ diagnosed between 1996 and 2002. Clinical characteristics and detection patterns were examined through the use of a questionnaire submitted to the dermatologist.

53% were males and 47% were women with a mean age of 57 years. The most common skin type was type III (35%). The majority of the lesions were on the head and neck region. Most patients detected their own melanoma (62%) while physicians detected 38%. Self

detection occurred irrespective of the anatomic distribution with the exception of those presenting on the trunk area. No relation was found between the lesion size and the detection pattern. Patients younger than 70 year-old were more likely to detect their lesions than patients older than 70 year-old, in whom lesions were more frequently detected by their physicians.

Routine skin self examination can improve the detection of melanoma when it is clinically a macule, a curable stage. Techniques about skin cancer prevention and self examination should be emphasized and taught by their physicians so that lesions of melanoma can be diagnosed in their earliest stage.

The incidence rate of malignant melanoma in Puerto Rico has shown a four-fold increase in its incidence rate from 1977 to 1996 (1-3). During the first 10 years of this period, 494 cases of melanoma were diagnosed (2). The feet was the most common anatomic location, and the superficial spreading melanoma was the clinico-pathologic type most frequently recognized although, no cases of melanoma *in situ* were reported. However, during a subsequent 9-year period up to 1996, melanoma *in situ* comprised 32.4% of the total of cases of melanoma diagnosed histologically in Puerto Rico with the head and neck as the most frequent anatomic location (1).

Given the fact that there has been a marked increase in the detection of melanoma in situ in our population, we consider that it is important to establish the predominant clinical characteristics, patient demographics and detection patterns of this cases. Our study aimed to assess these in a select group of patient with melanoma *in situ*, and to

compare our findings with those previously reported in the literature.

Materials and Methods

We performed a retrospective study of the cases of melanoma *in situ* diagnosed between 1996 and 2002 using the Puerto Rico Dermatopathology Laboratory database. Melanoma *in situ* was defined as a flat or elevated lesion with histologic features of melanoma but confined to the full thickness of the epidermis and adnexal epithelium and no involvement of the dermis.

A total of 269 cases of melanoma *in situ* were diagnosed. Of these, 50 cases were excluded because some were patients from a dermatologist who had moved out of Puerto Rico and others were consults from general pathologists or excisions from a general surgeon which made it very difficult to locate the medical record. Questionnaires were sent to those dermatologists who had performed the skin biopsy or surgical excision of the remaining 219 cases inquiring the following information: age at diagnosis, gender, occupation, location of residence, skin type, history of systemic illnesses, history of skin cancer, family history of melanoma, presence of Clark's nevi, history of immunosuppression, anatomic site of the lesion, size of the lesion, detection pattern (physician vs. patient),

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utilization of dermoscopy for diagnosis, surgical management, history of local recurrence and history of metastasis to lymph nodes or internal organs. We also analyzed who detected the malignant lesion in relation to the patients gender, age, anatomic distribution and lesion size.

Results

Of the 269 questionnaires sent, we obtained the information requested in 64 cases, for a response rate of 24%. Thirty-four patients were male (53%) and thirty were female (47%). The ages ranged between 19 and 91 years with a mean of 57 years. Most of the patients were 40 to 70 years old with a peak between 41 to 50 years. (Table 1) The skin type was documented in 46 of 64 (72%) patients and the most common skin type reported was type III (35%) (Table 2).

Table 1. Age Distribution

Age (years)	Females	Males
10-20	0	1
21-30	3	3
31-40	5	1
41-50	5	8
51-60	6	4
61-70	4	7
71-80	3	5
81-90	4	4
91-100	0	1
Total	30	34

The majority of the lesions were on the head and neck region, followed by the trunk area in males, and the upper limbs in females (Table 3).

Most patients detected themselves their melanoma (62%) while physicians detected 38% of the lesions. Self-detection occurred irrespective of the anatomic distribution, with the exception of those presenting on the trunk area, where 8 lesions were detected by the physician vs. 7 detected by the patient (Table 4). No

Table 2. Skin Type

Skin types	Females	Males
I	4	6
II	5	8
III	8	8
IV	4	3
V	0	0
Total	21	25

Table 3. Anatomic Distribution

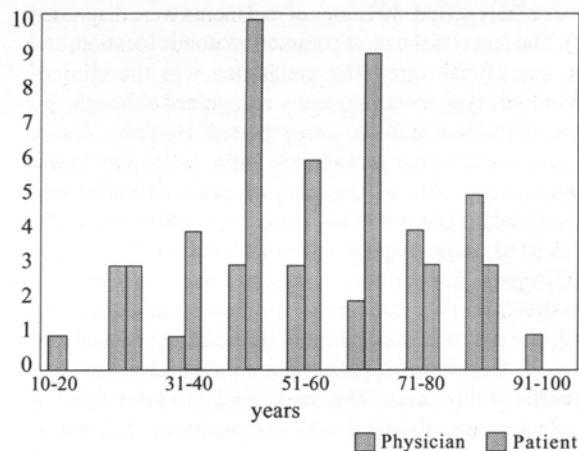
Site	Females	Males
Head/Neck	11	14
Trunk	5	10
Upper limbs	7	9
Lower limbs	7	1
Total	30	34

Table 4. Anatomic Distribution and Detection Pattern

Site	Detected by Physician	Detected by Patient
Head/Neck	7	16
Trunk	8	7
Upper Limbs	5	11
Lower Limbs	3	4
Total (%)	23 (38%)	38 (62%)

relation was found between the lesion size and the detection pattern. The patient's age was found to be an important factor in the detection pattern. Those patients younger than seventy years-old were more likely to detect their lesions than the older ones, whose lesions were most frequently detected by their physicians (Figure 1).

Figure 1. Age Distribution and Detection Patterns



Of the 64 patients, three patients had family history of melanoma. In twelve patients, lesions clinically suggestive of dysplastic nevi were documented. Ten patients had history of skin cancer and one female had a previous history of melanoma. No history of immunosuppression was reported. Dermoscopy was not utilized for evaluation of the lesions.

Surgical excision with 5mm margins was performed in 20 patients. In eleven patients, excisions with more than 5mm margins were done and in 19 patients the margins of excision were not documented. Nine patients underwent Moh's micrographic surgery. Two patients refused treatment and three patients were lost to follow up (Table 5). No history of metastasis to lymph nodes or internal organs was documented. The data on the patients occupation, location of residence and history of systemic illnesses was not analyzed, since the information was not obtained in many cases.

Table 5. Treatment

Moh's	Excision 5mm Margins	Excision >5mm Margins	Excision Unknown Margins	No Tx	No F/U After Biopsy
9	20	11	19	2	3

Discussion

The incidence of melanoma has been increasing worldwide since the early 1960s (4,5). In the 1980's there was a sharp increase believed to be due to the advancement in the time of diagnosis of melanoma. Hall et al (6) reported that melanoma incidence and mortality rates increased dramatically from 1973 to 1994 in the United States. However, in recent years rates for most age-sex groups appear to have stabilized or even declined. A large proportion of detected melanomas have been either melanomas in situ or melanomas with a thickness of less than 0.75mm. Males have had higher incidence and mortality rates when compared to females.

Data suggest that most melanomas are discovered by the patient or a family member. A study done by Koh et al (7) revealed that in 216 patients with history of melanoma, 53% of the lesions were self-discovered. Women were more likely to discover their own lesions regardless of lesion size. However, increasing age in women was associated with a increased probability of discovery by a physician. Similar findings were obtained in our study. The difference in the number of cases detected by the physician vs. the patient in males was not as different as seen in females. Therefore, although melanoma incidence has no gender predilection, women were more likely to discover their own lesions. This can imply that women are more aware of their skin changes than men. Therefore, we should be more thorough in the skin cancer screening of males.

Physician detection of melanoma also plays an important role (8). A study done by Epstein et al (9) revealed that even though patients more frequently detected melanoma, physicians were more likely to detect melanoma in situ and lesions measuring less than 0.75mm, a fact that plays an important role in cure rates. Brady's et al study (10) about patterns of melanoma detection during the period from 1995 to 1998 concluded that physician detection and family history of melanoma were associated with the presence of thinner lesions.

Schwartz et al(11) found the following characteristics to be associated with early detection of melanoma: female gender, more than 20 melanocytic nevi, atypical nevus and a personal history of melanoma. Family history of melanoma, skin type I,II,III and history of sunburn were also important, but not statistically significant.

In our study we were not able to state whether melanoma was detected by the patient, by a family member or a friend since such details were not specifically stated in the questionnaire, some may still argue that skin self-examination among adults can be inferred. Detection pattern did not correlate with lesion size nor anatomic site in this study. This was not an expected finding, as past studies have revealed that the majority of visible lesions were patient-detected, and that lesions located on the back and buttocks are the most frequently detected by family members, friends or physicians. The lack of relationship in our study could be due to the fact that those previously mentioned anatomic sites were not specified. Other possible correlations may have also been missed due to our relatively small sample size of the study. A larger sample size would have also helped to establish the statistical significance of our results.

In conclusion, melanoma in situ is the earliest stage of melanoma that is being increasingly recognized in our population. Routine skin self-examination can improve the detection of melanoma when it is clinically a macule, a curable stage. Techniques about skin cancer prevention and self examination should be emphasized and taught by physicians in their practices especially to males, so that those skin lesions can be diagnosed in their earliest stage.

Resumen

La incidencia de melanoma ha aumentado mundialmente desde la década de los 60. Melanoma in situ es la etapa de melanoma más temprana la cual ha ido aumentando en nuestra población.

Se realizó un estudio retrospectivo de melanomas in situ diagnosticados entre el 1996 al 2002 y examinamos sus características clínicas y sus patrones de detección. La información clínica fue obtenida de un total de 64

casos mediante el uso de un cuestionario que se envió a sus dermatólogos.

53% eran hombres y 47% mujeres con una media en edad de 57 años. El tipo de piel más común fue el Tipo III (35%). La mayoría de las lesiones estaban localizadas en la cabeza y cuello. La mayoría de los pacientes detectaron su melanoma (62%) mientras que los médicos detectaron el 38%. La detección de la lesión hecha por el mismo paciente se dio irrespectivamente de la distribución anatómica con la excepción de aquellas lesiones en el área del tronco. No se obtuvo relación entre el tamaño de la lesión y el patrón de detección. Las personas menores de 70 años detectaron más frecuentemente sus propias lesiones que los mayores de 70, en quienes fueron detectados mayormente por sus médicos.

El auto examen de la piel puede mejorar la detección más temprana de melanoma cuando éste es solo una mácula, la etapa curable. Los médicos deben de enseñarle a sus pacientes técnicas sobre prevención de cáncer de piel y de auto examen para así aumentar la probabilidad de diagnosticar el melanoma en sus etapas más tempranas.

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