RESEARCH COMMUNICATION

Spectrum of Primary Non-Cutaneous Malignant Melanomas in Northern Pakistan

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Abstract

Objective: To study the frequency and distribution of non-cutaneous malignant melanoma in Northern Pakistan using a cross-sectional descriptive design at the Armed Forces Institute of Pathology Rawalpindi, from 1987-2008. Materials and Methods: A total of 234 cases of malignant melanoma reported from 1987-2008 were retrieved from the AFIP tumour registry and analysed for age, gender and site using computer software SPSS 12. Results: Of a total of 58,680 malignant cases reported at AFIP from 1987-2008, only 234 (0.4%) were of malignant melanoma, 142 in males and 92 in females. The age range was 10-97years, with a mean of 53±16. Only 69 (29.5%) were cutaneous and 165 (70.5%) were non-cutaneous in origin: there were 62 (37.4%) cases from anorectal region, 39 (23.4%)were from eye ball and 17 (10.2%) in the nasopharynx, 13 cases (7.8%) from oral mucosa and 11 (6.6%) from the vagina. Conclusion: Malignant melanoma is markedly less cutaneous in Pakistan as compared to the western world, often being found in the anorectal region followed by the eye, nasopharynx, and oral mucosa in descending order.

Keywords: Malignant melanoma - cutaneous melanoma - non-cutaneous melanoma

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Introduction

Malignant melanoma originates from melanocytes, derived from the neural crest cells. After malignant transformation, melanocytes become invasive and penetrate into the surrounding tissues (Elwood and Jopson, 1997; Tucker et al., 2002).

According to western literature, malignant melanoma of the skin is by far the commonest form of melanoma as well as the commonest cutaneous malignancy (Chang et al., 1998a; 1998b). Choroidal melanoma is the second most common whereas anal canal is the third most common site world wide (Vagero et al., 1990; Zemelman et al., 2006). It is our observation that cutaneous melanoma is much less frequent in our part of the world; however melanoma is seen at many non-cutaneous sites.

Non-cutaneous malignant melanomas are very difficult to diagnose because of their rarity and variable morphological features. There is a long list of malignant tumours that comes into the differential diagnosis which includes poorly differentiated carcinoma, poorly differentiated sarcoma and even malignant lymphomas. Therefore immunohistochemistry plays a pivotal role in the diagnosis of malignant melanoma. S-100, Melan-A and HMB-45 are the commonly used markers. S-100 is very sensitive but less specific while HMB-45 and Melan A are very specific markers though less sensitive than S-100 (Elwood and Jopson, 1997; Kumar et al., 2008).

This study was undertaken to find the pattern of non-cutaneous melanoma, in the population of Northern Pakistan.

Materials and Methods

Armed Forces Institute of Pathology is a referral laboratory in Northern part of Pakistan. It receives samples from Armed Forces hospitals, Government hospitals as well as from private hospitals in this region. All cases of malignant melanoma which were diagnosed at AFIP from January1987- December 2008 were retrieved from AFIP tumor registry and their frequencies were calculated according to gender and sites. Computer soft ware SPSS 12 was used for data analysis.

Results

Total number of the malignant tumors reported at AFIP (from year 1987-2008) was 58680, out of which 234 (0.4%) cases were of malignant melanoma. There were 69 cases (29.5%) of cutaneous melanoma and non- cutaneous melanoma cases were 165 (70.5%).

Total male patients were 142 (60.7%) and female patients were 92 (39.3%) with a male to female ratio of (1.5:1). Among cutaneous melanoma patients 46

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were male and 23 were female. Among non-cutaneous melanoma patients 104 were male and 61 were female.

Age range for cutaneous melanoma cases was 12-80 years with a mean of 43.2±16 and among non-cutaneous melanoma age range was 10-97 years with a mean of 53±16. There were only 2 paediatric cases of malignant melanoma, one cutaneous and the other of eye ball origin.

Distribution of non-cutaneous melanoma cases according to site is given in Figure 1. Majority were from anorectal area, 62 cases (37.4%), in which 44 were male and 18 were female. Age range for these cases was 25-97 years. Seventeen cases (10.2%) were from nasopharynx, thirteen (7.8%) from oral mucosa and eleven (6.6%) cases were from vagina. There were 6 cases from bone, 5 from respiratory system and 3 cases were from other parts of gastrointestinal tract and soft tissues each, 2 cases were from liver, one each from ovary, retroperitoneum, parotid and urinary system.

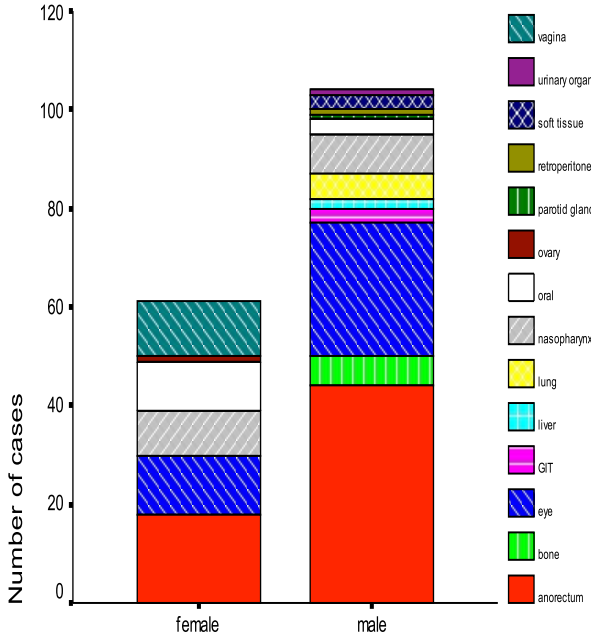

Figure 1. Distribution of Non-cutaneous Malignant Melanomas in both Sexes (n=165)

Discussion

Malignant melanoma can be found anywhere in the human body including both cutaneous as well as non-cutaneous sites. The common feature of all melanomas is the cell of origin, the melanocyte. Melanocytes are pigmented dendritic- like cells located in various anatomic sites. These sites include basal layer of epidermis, the eye and in the epithelia of the nasal cavity, oropharynx, anus, vagina and urinary tract.

The incidence of cutaneous melanoma is increasing in the west at a greater rate than any other human cancer in the United States (Chang et al., 1998a; 1998b). It is estimated that approximately 1 in 75 persons born in the year 2000 will develop cutaneous melanoma during his/her lifetime (Elwood and Jopson, 1997; Tucker et al., 2002).

According to the latest National cancer data base report on malignant melanoma published in1998, Non-cutaneous melanoma cases constitute less than 10% of total melanoma cases in USA (Chang et al., 1998b).

In our study non-cutaneous malignant melanoma cases were more than double in number as compared to skin melanomas. The difference is more relative than absolute because we have much less incidence of cutaneous melanoma. It is well established that cutaneous melanomas are less common in Hispanic as well as Asian Americans as compared to whites (Rouheni et al., 2008). They are also less common in Asian, Latin-Americans and American-Indian descent (Byed et al., 2007). This is most likely due to skin colour, racial and genetic factors.

According to western literature 49% of patients with mucosal melanoma were more than 70years of age while in our study only 20 cases (12.1%) of mucosal melanoma were in the eighth decade or older (Elwood and Jopson, 1997; Tucker et al., 2002). This difference needs to be looked in to because melanoma at young age is a rare occurrence.

A study from USA including more than 80,000 melanomas showed that among mucosal melanomas Head and Neck was the commonest site of occurrence constituting 55.4%, followed by anorectal, female genital tract, and urinary tract comprising 23.8%, 18.0% and 2.8% respectively (Tucker et al., 2002). Anorectum was the commonest site among mucosal melanomas in our study comprising 59.6% followed by head and neck, vagina and urinary tract comprising 28.8 10.57% and 0.96% respectively. The relatively increased occurrence of anorectal melanoma as compared to other mucosal melanomas in our population may denote some genetic or racial factor which needs investigation.

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