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Original Article

Prevalence of Pigmented Nevus in Sari, North of Iran: A Retrospective Study on 719 Patients

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ABSTRACT

Background/Objective: Using the term nevus and nevi loosely, most physicians and dermatologists are actually referring to a variant of nevus called the "melanocytic nevus", which are composed of melanocytes. A melanocytic nevus is a type of lesion that contains nevus cells. Melanocytic nevi are originated from proliferation of melanocytes between dermis and epidermis. Congenital nevi are present at birth and occur approximately in 1% of newborn infants. Histology classifies acquired melanocytic nevi as a collection of melanocytic cells in the epidermis (Junctional), dermis (Intradermal), or both (Compound), disposed in isolated elements (epidermal variety, lentiginous pattern) or aggregated (junctional, intradermal and compound variety).

Methods and Materials: This was a retrospective analytic-descriptive study applied in dermatology clinic of Bu-Ali hospital of Sari, Mazandaran, Iran. All of patients with nevus lesions which were under biopsy or surgery during years 2003-2013 were evaluated. Inclusion criteria: All of patients with nevus lesions which were under biopsy or surgery during years 2003-2013 whose pathology reports were in access. After gathering the needed data of the patients we put it into software SPSS ver. 18.

Results: Number of participants in our study was 719 including 591 females (82.20%) and 128 males (17.80%). The most common diagnosed pathologic lesion was intradermal melanocytic nevus in 398 cases (55.4%). Frequency of intradermal melanocytic nevus was significantly higher in females, however lentigo was significantly more frequent among male patients. Risk of nevus of sebaceous of Jadassohn was higher in males as well.

Conclusion: Our study showed that the most common nevus in our region are intradermal melanocytic nevus, epidermal melanocytic nevus and compound nevus. Additionally, females are at a higher risk of melanocytic lesions than males. While in latter the risk of nevus of sebaceous Jodassohn and lentigo is higher in males.

Key words: Pigmented nevus, Melanocytic nevi, Melanoma

INTRODUCTION

Nevus is the medical term for sharply circumscribed and chronic lesions of the skin or mucosa.[1]Nevi are benign by definition However, 25% of malignant melanomas (a skin cancer) arise from pre-existing nevi.[2]Using the term nevus and nevi loosely, most physicians and dermatologists are actually referring to a variant of nevus called the melanocytic nevus, which are composed of melanocytes. A melanocytic nevus is a type of lesion that contains nevus cells.[1]Melanocytic nevi are originated from proliferation of melanocytes between dermis and epidermis. These nevi being usually benign are commonly appeared in antenatal period and their distribution is almost worldwide.[3]Pathogenesis of these lesions is due to mutations in genes responsible for sexual morphogenesis of neuroectoderm and thus disturbance in migration of melanocytes to the skin and their proliferation[4].Congenital nevi are present at birth and occur approximately in 1% of newborn infants. They result from a proliferation of benign melanocytes in the dermis, epidermis, or both. Occasionally, nevi that are histologically identical to congenital nevi may develop approximately during the first 2 years of life. These are referred to be considered tardive

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congenital nevi,[5]The etiology of congenital melanocytic nevi remains unclear. The melanocytes of the skin originate in the neuroectoderm, although the specific cell type from which they derive remains controversial.[6],[7],[8] Acquired melanocytic nevus is a common disorder of melanocytes, occurring as a pigmented benign lesion, possibly localized in every part of the skin (palmoplantar areas included) and oral, ocular, genital mucosae. They first can appear after 6-12 months of life. Histology classifies acquired melanocytic nevi as a collection of melanocytic cells in the epidermis (Junctional), dermis (Intradermal), or both (Compound), disposed in isolated elements (epidermal variety, lentiginous pattern) or aggregated (junctional, intradermal and compound variety).[9]Most of benign nevi have a symmetric shape, with regular border and uniform color with maximum diameter of 6 mm. changes such as itching and tenderness should be noticed. An important guide for diagnosing a malignant nevus is based on 4 factors: asymmetry, border irregularity, color variegation and diameter more than 6 mm.[10]The most critical issue about these nevi is their ability to be malignant. A noticeable mortality rate of malignant nevi has been reported. In approach to such patients, first of all a biopsy a histological evaluation should be done in order to rule out malignancy an in next steps the lesion should be removed by surgery and then reconstruction is done by cultured autologous epidermis.[11]Because of high incidence rate of acquired and congenital melanocytic nevi in different individuals, timely diagnosis of such lesions in order to stop their progression to malignancy and also to differentiate them from malignant melanoma has a significant importance. Epidemiologic distribution of these nevi varies in different geographical areas since the climates are widely different thus in this study we decided to gather beneficial data from prevalence of melanocytic nevi in patients attending skin clinic of Bu-Ali hospital in Sari which were under biopsy or surgery from 2003 to 2013.

MATERIALS AND METHODS

This was a retrospective analytic-descriptive study applied in dermatology clinic of Bu-Ali hospital of Sari, Mazandaran, Iran. All of patients with pigmented nevus which were under biopsy or surgery during years 2003-2013 were evaluated. Inclusion criteria: All of patients with pigmented nevus which were under biopsy or surgery during years 2003-2013 whose pathology reports were in access. Exclusion criteria: those patients whose medical records were incomplete. After gathering the needed data of the patients we put it into software SPSS ver. 18. For quantitative variables we used Mean ± SD and for qualitative variables.we used frequency table. Then frequencies were measured and Chi-square test was used to compare the frequencies among males and females.

RESULTS

Number of participants in our study was 719 including 591 females (82.20%) and 128 males (17.80%) [Figure1]. Mean age of total patients was 32.38±13.82 (median=29) minimum age was 3 and maximum was 90. Mean age of females was 32.29±12.55 (median =29) and mean age of males was 32.8±18.65 (median=29) which had no significant difference (p=0.708).

The most common diagnosed pathologic lesion was intradermal melanocytic nevus in 398 cases (55.4%); After that, Epidermal melanocytic nevus in 144 cases (20.02%), compound nevus in 85 (11.8%), blue nevus in 23 (3.2%), nevus of sebaceous Jadasohn in 14 (1.9%), epidermal nevus in 14 (1.9%), lentigo in 9 (1.3%), junctional melanocytic nevus in 6 (0.8%), congenital melanocytic nevus in 5 (0.7%), melanoma in 5 (0.7%), halo nevus in 4 (0.6%), neurofibroma in 4 (0.55%), nevus lipomatosus in 3 (0.4%), Becker's nevus in 2 (0.3%), nevus comedicus in 1 (0.1%), ota nevus in 1 (0.1%) and spitz nevus in 1 case (0.1%).

Frequency of intradermal melanocytic nevus was significantly higher in females (RR 1:24, 95%CI: 1.01-1, 52 P= 0.020), however lentigo was significantly more frequent among male patients (RR 3:69 95% CI: 1.00-14.28 P=0.036). Risk of nevus of sebaceous of Jadassohn was higher in males as well (RR 6:15, 95%CI: 2.17-17.43 P=0.001). In evaluation of other diagnoses there were no significant differences (p<0.05) [Table 1].

Age of patients with intradermal melanocytic nevus or junctional melanocytic nevus was significantly higher than other patients (p=0.001 and 0.021 respectively) whereas patients with Congenital Melanocytic Nevusor Neurofibroma were significantly younger than other patients (p=0.0007 and 0.0005 respectively) [Table 2].

DISCUSSION

In this descriptive retrospective study which was applied in dermatology clinic of Bu-Ali hospital in Sari all of patients with pigmented nevus during years 2003-2013 were evaluated. Our population was 719 individuals which were under biopsy or surgery in dermatology unit of Bu-Ali hospital. The most common diagnosis in this study was intradermal melanocytic nevus with 398 cases (55.4%). After that, epidermal melanocytic nevus had most frequency with 144 cases (20.02%) and then compound nevus in 85 cases (11.8%).

In the study of Zamanian A, which was done in rural districts of Hamedan the most common diagnoses, similar to our results, were subtypes of melanocytic nevi but they did not evaluate the prevalence of each subtype individually. The other difference between their study and ours was that in that study the diagnoses were based on clinical findings but the diagnoses used in our study were all based on pathology reports which have a far more confidence level. The prevalence of the lesions in our study had many differences with that of Zamanian A, which is probably due to differences in climate conditions and solar radiations in two areas.[12]

In a study conducted by Amirnia M, and Ranjkesh M.R, on the patients with melanocytic nevi in Sina hospital of Tabriz, Iran 54 patients went under skin biopsy. In this study suspected signs of malignancy such as induration, tenderness and bleeding were seen in 5.6% of cases, which in 1,9% of them the diagnosis was certain. The diagnostic method of that study was as ours but the participants were much less.also in our study certain diagnosis of malignancy (melanoma) was 0.7% which is lower than the study of Amirnia et al.[13]

Because of climate conditions in Mazandaran province and differences in terms of solar radiation between Mazandaran and other areas of world, it was expected that prevalence of melanocytic nevi in our study have a noticeable difference with other similar studies, as prevalence of lesion including atypical nevi, halo-like nevi (0.6%) and congenital nevi (0.7%) in a study by J Riviers et al for defining the prevalence of nevi and pigmented lesions of skin. That was a cross-sectional study on the students of 3 major districts of Australia with a broad range of geographical diversity. The population consisted of 133 white-skinned students aged 6-15 years. Based on their study, prevalence of acquired nevi (atypical nevi, nevi ≥ 5 mm in diameter and skin-colored nevi) was higher in areas which received more solar radiation. Congenital (4.4%) and halo nevi (5.3%) were also seen. They mentioned the role of geographical conditions in terms of solar radiation in prevalence of melanocytic lesions. The important difference between their study and ours is the restriction of sample numbers which may affect the prevalence of nevi.[14]

The effect of race on the prevalence of such lesions should not be ignored. As in the study of Gallagher RP et al, aggregation of melanocytic nevi were compared between 378 Asian individuals as well as 68 Indian and Pakistani school children of ages 6-18 years and 1146 whites of the same age range. Melanocytic nevi were significantly less frequent than Canadian whites and the color of skin was considered as an important risk factor for melanocytic nevus and melanoma.[15]

Another study was conducted by Calnas T et al on 289 patients with skin melanoma in order to detect the presence of a benign melanocytic lesion such as intradermal melanocytic nevus, compound nevus, lentigo, junctional melanocytic nevus, congenital melanocytic nevus and dysplastic nevus. Prevalence of nevi with melanoma was 51% which 56% of them were dysplastic, 41% acquired and 3% congenital melanocytic nevi. 75% of cases had lentigo proliferation and in 44 % of cases there were several types of nevi. In our study 0.7% of patients had melanoma which is a lower rate than other studies.[16]

CONCLUSION

Our study showed that the most common nevi in our region are intradermal melanocytic nevus, epidermal melanocytic nevus and compound nevus. Additionally, females are at a higher risk of melanocytic lesions than males. While in latter the risk of nevus of sebaceous Jodassohn and lentigo is higher. Also, intradermal melanocytic lesions is usually seen in 4th decade of life and junctional melanocytic lesion is mostly seen in 5th decade of life, whilst halo nevus and epidermal nevus is more frequently seen in 2nd decade of life.

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