

Ten-Year Study on the Correlation of Clinical and Pathohistological Diagnosis of Dysplastic Nevi

Mirna Šitum¹, Željana Bolanča¹, Maja Kolić¹, Sandra Jerković Gulinić² and Dario Gulinić²

¹ Department of Dermatovenerology, »Sestre milosrdnice« University Hospital Center, Zagreb, Croatia

² School of Medicine, University of Zagreb, Zagreb, Croatia

ABSTRACT

The aim of the study was to analyze the clinical prevalence and pathohistological correlation of dysplastic nevi. In the period between 2000 and 2009, in the Outpatient Clinic of Referral Centre for Melanoma of the Ministry of Health and Social Welfare of the Republic of Croatia, 12,344 patients were examined, and 35.07% of them were surgically removed in the same institution. Among the patients, 69.16% had clinically diagnosed melanocytic tumor. Out of them, 28.39% were dysplastic. Dysplastic nevus was pathohistologically diagnosed in 20.02% of pathohistologically diagnosed melanocytic tumors. There was women predominance among patients with clinically diagnosed dysplastic nevi (65.22%). The most frequent localization was the trunk in both sexes, women 78.18%, men 76.75%. The coincidence of clinical and pathohistological diagnosis of dysplastic nevus was 30.70%. The results of this study, based on a large number of patients could be a significant contribution in understanding characteristics of dysplastic nevus, its clinical and pathohistological complexity. We hope that the data will contribute to the creation of general accepted protocols in the diagnostics of dysplastic nevus.

Key words: *dysplastic nevi, clinical and pathohistological correlation*

Introduction

The first report of families with multiple melanocytic nevi (common and atypical) and increased risk of melanoma was published in 1978 by Clark¹. Thereafter, the same entity was described under several different names, as there are several different names² for the common and atypical Clark's nevus. The term atypical nevus was recommended by the consensus of the National Institute for Health (NIH) in 1992³, although we perform, in every day practice, dysplastic nevus.

Many studies define the presence of atypical nevus as a major factor associated with increased risk of developing skin melanoma. It is also believed that common melanocytic nevi and atypical nevi are precursor lesions of skin melanoma. The main evidence for this theory is the association between nevi and melanomas clinically and histologically observed⁴.

Atypical nevi have higher prevalence among young people and onset usually begins in puberty and majority remains stable through life⁵. The incidence of clinical atypical nevus in the general population ranges from

1.5–18%³. The frequency of atypical nevi in patients with a history of melanoma is higher, ranging 34 to 59%⁴.

The lack of consensus regarding the clinical diagnosis led to many different clinical definitions. The most commonly used are ABCDE rule which is used for diagnosis of the melanoma and the definition which requires three positive out of five elements: diameter larger than 5 mm, poorly defined borders, irregular margins, multiple colors, presence of macular and popular components⁶.

There is also a little bit of confusing among histopathological criteria: according to Clark and Elder melanocytic dysplasia shows the following characteristics:

1. Lentiginous hyperplasia of melanocytes: characterized by the confluence of melanocytes in the basement membrane zone; melanocytic cells extending beyond the dermal papillae; »shoulder phenomenon« (peripheral extension of the junctional component beyond the dermal component).

2. Epithelioid melanocytic atypia: large melanocytic cells with large amounts of cytoplasm and finely distributed pigmentation giving it a milky aspect.

3. Lamellar fibrosis: elongated fibroblasts separated by layers of dense extracellular matrix and/or concentric eosinophilic fibrosis around the epidermal ridges.

4. Perivascular lymphocytic infiltrate in the papillary dermis^{4,7}.

Patients and Methods

A retrospective study was conducted at the Outpatient Department of Dermatovenereology, »Sestre milosrdnice« University Hospital Zagreb, Referral Centre for Melanoma of the Ministry of Health and Social Welfare of the Republic of Croatia. The data were obtained from the medical records of 12.344 outclinic patients between January 2000 and December 2009. It should be noted that the study did not include patients with malignant melanoma. Data on clinical diagnosis, year of examination, patient age, sex, localization of tumor, number of tumors, histopathologic report were recorded from the data base.

Data entry and processing was done in Microsoft Office Excel 2007 (Microsoft) and for statistical analysis we used R: A Language And Environment For Statistical Computing 2010 (R Foundation for Statistical Computing).

Results

Out of 12.344 clinically examined patients, 4.329 (35.07%) underwent surgical removal of tumor lesions. Women predominate among examined patients (7.986, 64.71%). Atypical nevi were clinically diagnosed in 2.424 patient (19.64%), and atypical nevi syndrome was diagnosed in 765 patient (6.19%). The age range for atypical

nevus was 3 till 86 years with peak between 15 till 44 years (75.12%) and the mean age was 33.15 years.

The atypical nevi syndrome was diagnosed in age group from 3 till 68 years with peak also among 15 till 44 years (86.80%). The mean age was 31.90. Out of 2.424 patient with atypical nevus, 843 of them were men (34.7%) and 1581 (65.22%) were women. Similar sex distribution was among patients with atypical nevi syndrome (39.0% men vrs 60.92% women).

The most common site for atypical nevus was the trunk (77.68%) with predominance of the back part of the trunk (42.86%), following anterior part of the trunk (27.56%), upper extremities (4.70%), down extremities (5%), head and neck (2.89%), feet (1.69%) and scalp (0.50%).

Among women 41.49% atypical nevi were localized on the back of the trunk, following anterior part of the trunk (28.72%), down extremities (4.68%), upper extremities (4.49%), head and neck (2.68%), and scalp less than 1%.

Atypical nevus in men was mostly localized on the back of the trunk (45.43%), then, anterior part of the trunk (25.39%), upper (5.10%) and down (4.27%) extremities, head and neck (3.32%), scalp less than 1%.

Out of total number of clinically diagnosed atypical nevus, in 30.70 % the diagnosis was in concordance with patohistological analysis (Table 1).

Discussion

Out of total number of the clinically diagnosed melanocytic tumors, almost 30% of there were clinically characterized as atypical, and 9% were diagnosed ad atypical nevi syndrome. The mean age of the patients with atypical nevus and atypical nevi syndrome were 32, and 33 respectively. The peak age was between 18 and 44 years of age. Both, the atypical nevi and the atypical nevi syndrome had female predominance, which could be ex-

TABLE 1
CORRELATION OF CLINICAL AND PATOHISTOLOGICAL DIAGNOSIS

Clinical diagnosis	Patohistological diagnosis	No	(%)
Atypical nevus (1329)	Atypical nevus	408	30.70
	Nevus lentiginosus	341	25.66
	Nevus naevocellularis compositus	237	17.83
	Nevus naevocellularis junctionalis	125	9.41
	Nevus naevocellularis intradermalis	78	5.87
	Lentigo simplex	70	5.27
	Keratosis seborrhoica	28	2.11
	Nevus coeruleus	11	0.83
	Hallo naevus	10	0.75
	Carcinoma basocellulare	7	0.53
	Nevus Spitz	6	0.45
	Other	5	0.38
	Lentigo solaris	2	0.15

plained by the women better self care and higher level of education considering health problems. Women are also more exposed to natural and artificial UV radiation⁸ and are more influenced by the hormonal changes. The atypical nevi were mostly diagnosed on the back of the trunk, without differences in sex distribution which is explained by the increased intermittent UV radiation exposure during holidays. All these data are in concordance with data from already obtained from Croatian^{9,10} and international data¹¹.

The atypical nevi were patohistologically diagnosed in 20% out of total number of histologically diagnosed melanocytic tumor and in 30% of the clinically diagnosed atypical nevus. With regard to atypical nevi, the presence of clinical features of atypia is imperfectly correlated with the presence of histologic dysplasia. In a study with 101 patients with sporadic melanoma, the most atypical clinical lesion was surgically removed and the presence of dysplasia was histologically detected in 7% of the cases in which the lesion showed only one clinical feature of dysplasia, in 23% of the cases with two clinical characteristics of atypia and in 62% of the cases with three charac-

teristics.¹² In a population study in Utah (Caucasians), Piepkorn et al. removed one or two atypical nevi of each patient and there was a 53% prevalence of histological dysplasia. They found a statistically significant relationship between the total number of melanocytic lesions and histological dysplasia¹³. This suggests that melanocytic dysplasia is not randomly distributed, but that some people are predisposed to the appearance of these lesions.

According to the evidence the clinical diagnosis of atypical nevi does not require histological confirmation. Although there is increased risk for developing melanoma, the majority of atypical nevi do not evolve into melanoma. NIH established recommendations how to approach the patient with atypical nevi. These recommendations include: 1. detailed personal history. 2. family history of melanoma, 3. complete clinical examination, 4. dermoscopic examination, 5. guidelines on sun exposure.

All of these recommendations are established in order to improve early diagnosis of the neoplasm which is critical for the cure and the survival³.

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Ž. Bolanča

University Department of Dermatovenerology, University Hospital »Sestre milosrdnice«, Vinogradska cesta 29,
10 000 Zagreb
e-mail: zeljana.bolanca@gmail.com

DESETOGODIŠNJA STUDIJA KORELACIJE KLINIČKE I PATOHISTOLOŠKE DIJAGNOZE DISPLASTIČNIH NEVUSA

SAŽETAK

Glavni cilj ovog retrospektivnog ispitivanja je bio odrediti kliničku prevalenciju i kliničko-patohistološku korelaciju displastičnih nevusa. Ispitivanje je provedeno na osnovu medicinske dokumentacije od 12.344 bolesnika koji su pregledani u razdoblju između 2000. i 2009. godine u Klinici za kožne i spolne bolesti, KBC "Sestre milosrdnice" koja je ujedno i Referentni centar za melanom MZSS-a RH. Od ukupnog broja bolesnika, 69,16% su imali klinički dijagnosticiran melanocitni tumor, od kojih je 28,39% bilo klinički displastičnih. Patohistološka dijagnoza displastičnog nevusa je postavljena u 20,02% bolesnika. Među pregledanim bolesnicima prevladavale su žene (65,22%), a najčešće mjesto u oba spola je bio trup (žene 78,18%, muškarci 76,75%). Klinički dijagnosticiran displastični nevus je bio patohistološki potvrđen u 30,70% slučajeva. Rezultati ovog velikog ispitivanja su važan doprinos u razumijevanju displastičnog nevusa, njegove kliničke i patohistološke osobnosti.