ATYPICAL SPITZ TUMOR - CASE REPORT

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ATYPICAL SPITZ TUMOR-CASE REPORT (Abstract): Atypical Spitzoid tumors represent a poorly defined and characterized category of melanocytic tumors with histologic features of both benign Spitz nevi and malignant melanomas. The group of atypical Spitz tumors represents a mixture of Spitz nevi with atypical features and Spitzoid melanomas. We report the case of an eight years old female patient, who was admitted in Dermatology Clinic Craiova for the presence of a skin tumor with 1/0.8 cm diameter, irregular edges, brown-black colored with irregular pigment distribution. The skin tumor was located on the dorsal foot above the third metatarsal. The skin tumor appeared in the first two years of childhood and had a slowly increase. From about six months, the tumor had changed the colour becoming darker and had also a rapid increase in size. The patient had no comorbidities and had no family history of malignancy or other skin diseases. In our clinic we did the surgical excision of the skin tumor and sent the fragment for the histopathological examination and immunohistochemical tests. After the clinical examination, dermoscopic evaluation, histopathological and immunohistochemical examination, our diagnosis was Atypical Spitz Tumor. Keywords: ATYPICAL SPITZ TUMOR, SPITZ NEVUS, MELANOMA.

“Spitz nevus with atypia and metastasis” or “malignant Spitz nevus,” was first described by Smith et al (1) in 1989 as a kind of lesion showing histopathologic features not enough for a diagnosis of malignancy, yet capable of nodal metastasis, usually with no further dissemination.

Barnhill then completes with the diagnostic category of “metastasizing Spitz tumor” (2), or “atypical Spitz nevus/tumor” (3).

Nowadays, some opinions are that there are only two diagnostic categories (nevus and melanoma) and that every “abnormal” behavior is simply a diagnostic mistake, and others suggest that Spitzoid lesions are indeed a “morpho-biologic spectrum” of lesions ranging from benignity to full-blown malignancy, and sharing a peculiar genetic profile, with chromosome rearrangements involving kinase fusions (4, 5, 6).

Intermediate lesions within such a spectrum have an equivocal histo-morphology, featuring a diagnostic agreement among
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experts which is consistently lower than for “conventional” (non-Spitzoid) melanocytic neoplasms, but also peculiar clinical features and behavior with a relatively high incidence in prepubescent patients and a higher incidence of regional node involvement but a better prognosis than “conventional” melanoma of the same thickness/stage (possible low-grade malignancies) (7, 8, 9, 10).

CASE REPORT

We present the case of an 8-year-old female patient, who was admitted in Dermatology Clinic Craiova for the presence of a skin tumor with 1/0.8 cm diameter, irregular edges, brown-black colored with irregular pigment distribution. The skin tumor was located on the dorsal foot above the third metatarsal (fig. 1).

Fig. 1. Clinical aspect of the skin tumor

The skin tumor appeared in the first two years of childhood and had a slowly increase. From about six months, the tumor had changed, the color becoming darker and had also a rapid increase in size.

The patient had no comorbidities and had no family history of malignancy or other skin diseases.

After admission we performed dermoscopic examination which reveal nonspecific pattern with the presence of pigmented network, blue-white vale, white and black globules and white lines (fig. 2).

Fig. 2. Dermoscopic aspect of the skin tumor

In our clinic we did the surgical excision of the skin tumor and sent the fragment for the histopathological examination and immunohistochemical tests.

Histopathological examination revealed skin tumor with relatively symmetric architecture, histopathological aspect of proliferation of spindle cells, focal with intracytoplasmic accumulation of coarse melanin pigment arranged in large nests and isolated cells at the dermo-epidermal junction; numerous individual tumor cells and rare nesting with intraepidermic ascension and transepidermal elimination; extension in beams and isolated nests with minimum morphological maturation in the reticular dermis; tumoral cells have large nuclei, with 1-2 visible nucleoli, homogeneous eosinophilic cytoplasm; relatively frequent multinucleated tumor cells in surface; minimum interstitial fibrosis, rare mitosis in epidermal component; minimum lymphomonocyte inflammatory infiltrate with rare
melanofages peritumoral. The tumor proliferation has a tumor thickness of maximum 1.5 mm and extends laterally up to 2.5 mm from the closest lateral limit of fragments examined (fig. 3, 4).

![Fig. 3. Histopathological aspect of the skin tumor– HE col. X40](image)

![Fig. 4. Histopathological aspect of the skin tumor– HE col. X200](image)

Immunohistochemical tests revealed HMB45- Positive tumor junctional component, positive in rare tumor cells in the dermis in the superficial part of the tumor (expression gradient compatible with the aging phenomenon); Tyrozinaza (T311)- positive junctional tumor component, positive in the dermis tumoral cells; p16- positive in the majority of tumor cells, small groups of tumor cells, predominantly those at intraepidermic level, negative; p21- positive in frequent nuclei of tumor cells; Cyclin D1- positive in tumor cells in both components (intraepidermic and dermal); Ki67- positive in about 1-2% of the tumor cells.

The test in fluorescence with co-location for Ki67 and protein S100 revealed two focuses were tumor cells shows relatively frequent nuclei Ki67-positive (index Ki67 4 positive nuclei/8 tumor cells and 3 Ki67 positive nuclei/7 tumor cells) without identified mitosis in dermal component. The test in fluorescence concluded histopathological and immunohistochemical aspects compatible with the diagnosis of Atypical Spitz Tumor.

After the clinical examination, dermoscopic evaluation, histopathological and immunohistochemical examination, our diagnosis was Atypical Spitz Tumor.

We indicated inguinal and popliteal lymph node ultrasound and the result was the absence of inguinal and popliteal lymph node metastases.

The patient was discharged with the indication of dermatological examination every 6 months.

**DISCUSSION**

Spitzoid tumors are estimated to be below 1% of melanocytic nevi in the first childhood but accurate data about incidence and prevalence are still not known. Atypical Spitz tumors (AST) associate minimal lethal potential, an increased melanoma risk, and a moderate risk of metastasis to regional nodes. Even today, there are no set of criteria to be used to predict the clinical outcome for atypical Spitz tumors with absolute assurance. AST occur more frequently in patients with Fitzpatrick Photo types I and II, affects both females and males and some authors describe a slight female predominance. About 50% of cases
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occur in children under 10 years old and 70% of all cases are diagnosed in the first two decades of life (11).

From the clinical point of view atypical Spitz tumors present as a plaque or nodule, with variable size and localization. We can find a hypo pigmented reddish lesion or a brown-dark one. Regarding dermoscopic characteristics, nodularity, ulceration, linear vessels, polymorphic vessels, white lines, and blue-white veil are associated with atypical Spitz tumors (12).

The treatment recommended is surgical excision for all lesions with Spitzoid dermoscopic features detected after puberty. Before puberty, plaque-like or dome-shaped dermoscopic symmetric lesions with Spitzoid features can undergo dermoscopic digital monitoring (8). Large tumors over 1 cm, nodular or ulcerated tumors, rapidly growing or changing tumors, or otherwise atypical Spitz nevi of the childhood have to be surgical excised.

The management of patients with a histopathologic diagnosis of atypical Spitz nevus and Spitz tumor should be decided with a multidisciplinary approach. A re-excision can be considered for atypical Spitz nevi and has to be recommended for all incompletely excised lesions, as well as for Spitz tumors. The sentinel node biopsy for Spitz tumors should be evaluated case by case. A recent meta-analysis showed that 98–99% of young patients with Spitz tumors had no evidence of disease after a median follow-up of 59 months, regardless the sentinel node positivity. Therefore, the diagnostic and prognostic information given by a positive sentinel node in young patients seems to be negligible (10).

Echotomography of the regional nodes with an echotomography-guided fine needle aspiration biopsy cytology can replace sentinel node biopsy, because it allows to efficiently detect massive replacement of the lymph nodes by neoplastic cells, thereby addressing selected patients to elective lymphadenectomy (13). This follow up protocol is probably the best choice in patients younger than 10 years, especially for lesions located in the head/neck area, a region in which surgical procedures have major aesthetically impact (14).

The management of the cases with atypical Spitz tumor depends also of patient age and the prognosis is also age-dependent (15, 16). Adult patients can be managed more aggressively.

The risk stratification for atypical Spitz melanocytic proliferations has been recently made with the use of a new four-probe fluorescence in-situ hybridization (FISH) assay for 6p25 (RREB1), 11q13 (CCND1), 9p21 (CDKN2a), and 8q24 (MYC). It resulted 4 categories: 1. Spitzoid melanoma with homozygous 9p21 deletion (high risk); 2. Spitzoid melanoma with 6p25 and/or 11q13 gain (intermediate to high risk); 3. Atypical Spitz tumor with isolated 6q23 deletion (low risk); 4. Atypical Spitz tumor with no FISH abnormality (low to very low risk). But so far, the number of investigated cases is too low to validate this risk stratification system. However, the use of FISH techniques for prognostic purposes seems to be very promising (17).

Because of the lack of large studies of atypical Spitz tumor, no evidence-based treatment recommendations can be made.

Most current sources recommend complete excision to facilitate complete histologic evaluation and reduce risk of recurrence, but also they showed that very few sentinel lymph node biopsies are being performed for AST in clinical practice (18).

Atypical Spitzoid tumors represent a poorly defined and characterized category of melanocytic tumors with histologic fea-
tures of both benign Spitz nevi and malignant melanomas.

The group of AST represents a mixture of Spitz nevi with atypical features and Spitzoid melanomas (19).

CONCLUSIONS
This case report demonstrates that the diagnosis of pigmented tumors is difficult and it needs an experimental eye and performed investigations.

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REFERENCES

**THE MOGE(S) CLASSIFICATION. A TNM-LIKE CLASSIFICATION FOR CARDIOMYOPATHIES**

World Health Organization define cardiomyopathies as diseases of the myocardium associated with cardiac dysfunction. They were classified according to anatomy and physiology into the following types: dilated cardiomyopathy, restrictive cardiomyopathy (endocardial fibroelastosis), hypertrophic cardiomyopathy (athlete's heart), arrhythmogenic right ventricular cardiomyopathy, unclassified cardiomyopathies (left ventricular noncompaction, stress-induced cardiomyopathy, cirrhotic cardiomyopathy). Most cardiomyopathies are a familial disease and screening of the pedigree identifies asymptomatic family members for an early diagnosis cardiomyopathy. Genetic testing is increasingly becoming a part of the diagnostic process, and numerous new genes and mutations have been identified in the etiology of cardiomyopathies. Traditional definitions of cardiomyopathies, such as those by the American Heart Association and the European Society of Cardiology, do not consider the genetic basis of cardiomyopathies. In 2013, the World Heart Federation proposed a nosology that includes five simple attributes of a cardiomyopathy disorder: morphofunctional characteristic (M), organ involvement (O), genetic or familial inheritance pattern (G), an explicit etiological annotation (E) with details of genetic defects or underlying disease/cause, and information about the functional status (S) using the New York Heart Association (NYHA; I–IV) functional classes. The addition of (S) is optional, and should be used at the discretion. Using the description of the five attributes, the classification system has been designated as MOGE(S). The morphofunctional (M) notation provides a descriptive diagnosis of the phenotype: M_D = dilated cardiomyopathy; M_H = hypertrophic cardiomyopathy; M_A = arrhythmogenic right ventricular cardiomyopathy; M_R = restrictive cardiomyopathy; M_LVNC = LV noncompaction. Organ involvement (O) is defined as involvement of the heart only (O_H) or of other organs/systems. Healthy mutation carriers can be described as (O_0). The genetic/familial inheritance (G) notation gives information about autosomal dominant (G_AD), autosomal recessive (G_AR), X-linked (G_XL), X-linked recessive (G_XLR), X-linked dominant (G_XLD), or matrilineal (G_M) transmission. The etiological notation (E) adds to the information on the underlying cause. The MOGE(S) system resembles the TNM classification system for malignancy, and therefore it can be useful for the diagnosis, management, and treatment of cardiomyopathies in a similar manner to cancer management (E. Şahan, S. Şahan, M. Karamanlioğlu, M. Gul, O. Tufekcioğlu. The MOGE(S) classification. A TNM-like classification for cardiomyopathies. *Herz* 2016; 41(6): 503–506).

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