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Clinical Case

Cutaneous Melanoma in an 8-Year-Old Patient: A Case Report

Mélanome cutané chez une fille de 8 ans : à propos d'un cas

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ABSTRACT

Cutaneous melanoma (CM) is a potentially fatal form of skin cancer. Although it is the most common type of skin cancer in the paediatric population, it is rare, affecting around 0.4% of patients under the age of 20. We report a case of CM in an eight-year-old female patient. For one year, she had presented with a nodule of the left cheek treated as a pyogenic granuloma. The lesion was excised twice within two months, because it had recurred after initial excision. Pathology of the first excision was in favour of a Spitz nevus, while that of the second was in favour of a malignant oncocytoma. Molecular analysis of the satellite lymph node removed one month after the second excision was consistent with melanoma lymph node metastasis. MC is rare in children. The atypical nature of the clinical presentation may delay management.

RÉSUMÉ

Le mélanome est une forme potentiellement mortelle de cancer de la peau. Bien qu'il s'agisse du type de cancer de la peau le plus fréquent dans la population pédiatrique, il est rare puisqu'il touche environ 0,4 % des patients de moins de 20 ans. Nous rapportons un cas de MC chez une patiente de huit ans. Depuis un an, elle avait présenté un nodule de la joue gauche traité comme granulome pyogène. Deux exérèses de la lésion ont été faites en l'espace de deux mois parce qu'elle avait récidivé après une première exérèse. L'analyse histopathologique de la première exérèse était en faveur d'un nævus de Spitz, celle de la deuxième avait conclu à un oncocytome malin. Le ganglion satellite extirpé un mois après la deuxième exérèse avait fait l'objet d'analyse moléculaire qui était en faveur d'une métastase ganglionnaire d'un mélanome. Chez l'enfant, le MC est rare. Le caractère atypique de la présentation clinique peut retarder la prise en charge

INTRODUCTION

Pediatric melanoma is a malignant melanocytic lesion occurring in children from birth to age 18-21, depending on the threshold used to define adulthood [1]. In children under 15, the estimated annual incidence rates are 1 per million for children aged 1-4 years; 2 per million for children aged 5-9 years; and 3 per million for adolescents aged 10-14 years, in the US pediatric population [2]. We present the case of an 8-year-old female patient who presented with an atypical lesion of the left cheek that led to the diagnosis of cutaneous melanoma (CM) after several pathological analyses

CASE PRESENTATION

Patient information

This was an 8-year-old female patient who had been presenting with a painless nodule on the right cheek measuring approximately one centimeter for six months. The increasing size of the nodule prompted management with antibiotics, with no improvement (figure 1). The lesion was excised a first time, and pathology concluded that it was a Spitz nevus. Local recurrence two months later led to a second excision. On this occasion pathology favoured a malignant oncocytoma, with safe margins. The patient

complained of no other symptoms, had no particular personal history and no family history of cancer.

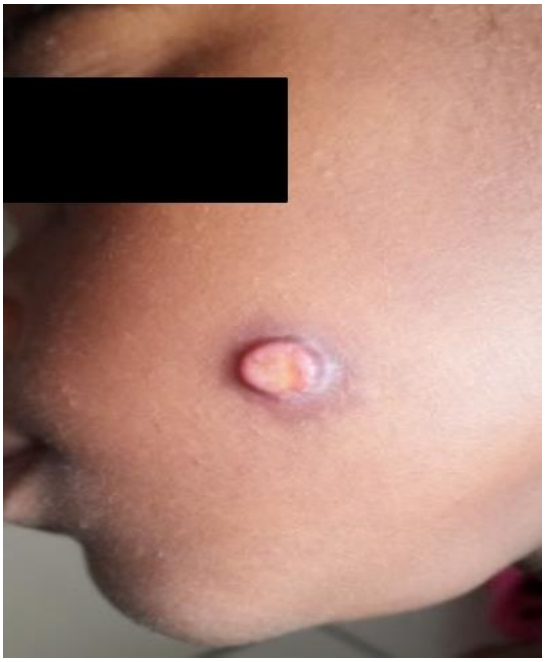

Figure 1: Lesion of the left cheek before first excision

Clinical examination

The patient had a good general condition. She had a scar on her left cheek, about 5 cm long and non-infiltrated. She also presented with a 3 cm sub mandibular lymph node that was firm, mobile and painless. The rest of the physical examination was unremarkable.

Diagnostic work up

Given the discordance of the first two pathology reports and the rarity of malignant oncocytoma, excision biopsy of the lymph node was performed. Microscopy described epithelioid cells with enlarged, sometimes nucleolated nuclei sometimes including a brownish pigment corresponding to melanin confirmed by Massom Fontana staining (figure 2). Tumor cells diffusely expressed S100, SOX10, MITF and weakly expressed Melan-A (figure 3). Molecular analysis using the EPIC Array infinium methylation technique by brain tumor classifier v11b4 revealed a gain on 2q and loss of 9p, with homozygous loss of CDKN2A.

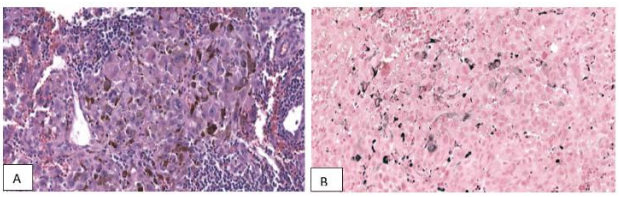

Figure 2: A Epithelioid cells with enlarged nuclei, sometimes nucleolated, sometimes containing a brownish pigment corresponding to melanin (HE x 40); B: Brownish pigment in nuclei (Masson Fontana stain x 40).

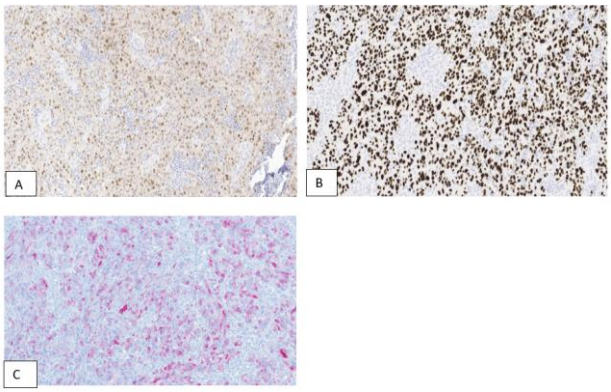

Figure 3: Immunohistochemistry (x 20) with: (A) diffuse expression of MITF; (B) diffuse expression of SOX10; (C) weak expression of Melan-A

Thoracic, abdominal, pelvic and brain scans did not show any signs of metastases.

Treatment and outcome

As the patient had already undergone excision of the primary lesion and satellite lymph node and given that immunotherapy is not generally available in our environment, a double platinum salt- treatment was proposed. The patient was prescribed Cisplatine associated with dacarbazine. The patient was lost to follow up without starting her treatment.

DISCUSSION

Childhood melanoma is very rare, although it is the most common skin cancer in the paediatric population [3]. About 1.3% to 2% of all cases of cutaneous melanoma occur in patients under 20 years of age, and in pre puberty the incidence is even lower at 0.3% to 0.4% [4]. The incidence of paediatric melanoma is evenly distributed between boys and girls, although a slight predominance of girls has been reported in literature [2]. Risk factors for pediatric melanoma include congenital, dysplastic or more numerous nevi, inability to tan, blue eyes, freckles on the face, family history of melanoma, DNA excision repair disorders such as xeroderma pigmentosum, acquired or congenital immunosuppression and history of malignancy [5].

Patients with pediatric melanoma present with clinical, epidemiological and histopathological entities distinct from those of the adult population. Melanoma in the paediatric population can be difficult to diagnose due to the many other diseases that look alike clinically and on histology. In our case, the first histology diagnosis was that of a Spitz nevus, which is one of the most common differential diagnoses of malignant melanoma. Spitz tumors bear a very close histological resemblance to melanomas and, in fact, these lesions account for the majority of so-called "melanomas" seen in children and adolescents [6]. Pyogenic granuloma, which accounts for 0.5% of skin lesions in infants and children, is another differential diagnosis. These are usually solitary, well circumscribed, dome-shaped, 1-10 mm in

diameter, sessile or pediculated, and are usually located on the head and neck (62.4%) and, in descending order of frequency, on the trunk (19.7%), upper limbs (12.9%) and lower limbs (5%) [7].

Our patient presented with a firm, reddish nodule on the face. In our case, diagnosis was delayed due to the patient's age and atypical presentation. The clinical and pathology features of pediatric melanoma are distinct and increasingly dependent on ancillary and molecular diagnostic tests, and can often only be established after consultation with individuals or institutions experienced in this difficult diagnosis [8]. Childhood and adolescent melanomas can be divided into three categories on the basis of pathological profile [9]. These categories are conventional melanoma, congenital melanoma and spitzoid melanocytic spectra. The genetic profile of each of these categories differs, and it is important to establish this difference in terms of risk factors, histological findings and therapeutic options [10].

In view of the histological findings and the clinical presentation of our patient, we would be more inclined to classify her in the group of spitzoid melanocytic sprecters, which in this particular case do not express the mutations usually found in this context, which are: ALK; ROS1, and NTRK1. This form of melanoma is not linked to sun exposure as a risk factor. Approximately 5-10% of melanoma cases run in families [11]. Unlike other cancer predisposition syndromes, melanoma is not linked to a single gene, but several high- and intermediate-penetrance melanoma susceptibility genes have been identified [11]. CDKN2A mutations are sometimes detected in individuals with primary multiple melanoma in the absence of a family history of melanoma in 8.3%, 15% and 57% in the USA, North America and Greece, respectively [12]. In our case, the detailed family history revealed no other cases of melanoma. The treatment algorithm is more or less the same as for adults. It mainly consists of surgery (wide excision margin), complete lymph node dissection and immunotherapy.

In our context, immunotherapy is not easily accessible (availability and cost) and cannot be used fairly easily in our patients. We opted for the use of conventional antimitotics (Dacarbazine) with close monitoring, while planning for medical evacuation or enrolment in a clinical trial. The identification of a deleterious CDKN2A mutation suggests that carriers should be included in intensive skin monitoring programs with a skin examination, also including scalp, oral and genital mucosa, performed every 6 months, and screening of other family members is recommended [11].

CONCLUSION

Pediatric melanoma is difficult to manage because of the rarity of diagnosis in this population, but also because of a low index of suspicion and similarities in presentation with other more common pediatric skin lesions. Diagnosis is generally delayed, and patients often present with advanced stages.

DECLARATIONS

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Conflicts of interest

The authors declare no conflicts of interest

Author contributions

Decision to submit the manuscript for publication: ANDC. All authors participated in this work. All have read and approved the final version of the manuscript.

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