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Summary

In adult cases of cutaneous melanoma who were examined at Shinshu University Hospital between 2006 and 2015, 10 (3.95%) of 253 cases were identified as having a lesion at birth or in early childhood. Nine of the 10 lesions had developed on non-chronic sun-damaged (CSD) skin and 6 was positive for the oncogenic *BRAF*^{V600E} mutation. Our findings indicated that cutaneous melanoma with a clinical history of early childhood onset shared the clinical and genetic characteristics with melanoma on the non-CSD skin.

Background

In the diagnosis of melanocytic lesions, it has not been fully established whether a clinical history of early childhood onset is sufficient to differentiate melanoma from congenital melanocytic nevus in adults.

Materials & methods

Adult cases of melanoma primarily developing on the skin and examined at Shinshu University Hospital between 2006 and 2015 were retrospectively reviewed. Melanoma arising from giant congenital melanocytic nevus was excluded. We selected patients who were identified as having a lesion at birth or in early childhood and evaluated their clinical, histopathological, and genetic findings. Oncogenic *BRAF* mutations were analyzed by the Sanger method.

Results

Ten (3.95%) of 253 cases were identified as having a lesion at birth or in early childhood (Table 1).

Table 1. Clinical and genetic characteristics of cutaneous melanoma with clinical history of early childhood onset

Case	Age	Sex	Clinical history	Site of lesion	<i>BRAF</i> status	Tumor thickness (mm)	CSD/non-CSD
1	44	M	at birth	thigh	V600E	4.20	non-CSD
2	19	F	at birth	back	V600E	6.00	non-CSD
3	24	F	early childhood	chest	V600E	8.50	non-CSD
4	26	F	early childhood	head	V600E	9.60	non-CSD
5	49	F	early childhood	arm	V600E	17.50	non-CSD
6	58	M	early childhood	thigh	V600E	0.80	non-CSD
7	62	F	early childhood	face	WT	6.00	CSD
8	70	F	early childhood	thigh	WT	6.50	non-CSD
9	20	F	at birth	lower thigh	np	0.44	non-CSD
10	35	F	early childhood	finger	np	3.50	non-CSD
median: 39.5			M:2 F:8	early childhood:7 at birth:3	extremities:6 trunk:2 head:1 face:1	<i>BRAF</i> ^{V600E} :6	median: 6.00 non-CSD:9

np; Not performed, CSD; chronic sun damaged

Cases

Case 4: A lesion consisting of pigmented macule (15 mm) and pink nodule (7 mm) on the head, that was rapidly enlarged half a year ago (a). Tumor cells in the epidermis and the superficial dermis are large with severe atypia (b, c), but small in the deep dermis with less atypia (b, d).

Case 7: A brown nodule (10mm) developed 5 moth ago on a pigmented macule of the cheek (12 mm) (a). Tumor cells in the nodule are large with atypia (b, d), and solar elastosis is observed in the surrounding super dermis (b, c).

Case 10: A pigmented macule (6.5 mm) on the middle finger, that was gradually enlarged. Large epithelioid tumor cells are proliferated from the epidermis to the deep epidermis (a, b). The tumor cells in the dermis show more atypia (c).

Conclusion

Melanoma with a clinical history of early childhood onset most frequently developed on non-CSD skin. Other characteristics, such as prevalence on extremities, young female predisposition, and positivity for the oncogenic *BRAF*^{V600E} mutation, were common with melanoma occurring on non-CSD skin. Although the clinical history provided by patients is not always reliable, melanoma cannot necessarily be ruled out by a history of early childhood onset.