

# Benign Melanosis of the Nipple and Areola During Pregnancy: A Case Report

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## Abstract

Benign melanosis of the nipple and areola is a rare pigmentary disorder that may clinically mimic malignant melanoma and pigmented Paget's disease, particularly during pregnancy. We report a 30-year-old woman at 28 weeks' gestation who presented with bilaterally asymmetric, heterogeneously hyperpigmented macules on the nipples and areolae. Dermoscopy revealed a prominent and regular pigment network with heterogeneous light- and dark-brown coloration. Multiple punch biopsies were performed to exclude melanoma *in situ*. Histopathological examination showed irregular acanthosis and increased basal layer pigmentation without melanocytic atypia. Immunohistochemical staining demonstrated scattered MART-1- and HMB-45-positive melanocytes without an increase in number, supporting the diagnosis of benign melanosis of the nipple and areola. The coexistence of vitiligo represents a rare and noteworthy feature of this case. This report emphasizes the importance of histopathological evaluation in differentiating benign melanosis from malignant pigmented lesions in pregnant patients.

**Keywords:** Benign melanosis of the nipple and areola, pregnancy, vitiligo, melanoma *in situ*, dermoscopic features, areolar pigmentation

## INTRODUCTION

Benign melanosis of the nipple and areola is a rare pigmentary disorder characterized by increased basal layer pigmentation without significant melanocytic proliferation.<sup>1</sup> Most reported cases occur in women of reproductive age, including pregnant patients.<sup>1-5</sup> These observations suggest that hormonal changes during pregnancy may play a role in the development of this entity. Due to its irregular borders, asymmetry, and heterogeneous hyperpigmentation, benign melanosis of the nipple and areola may clinically mimic malignant melanoma of the nipple. Therefore, dermoscopic and histopathological evaluations are essential for accurate differentiation.<sup>2</sup> In this report, we present a case of benign melanosis of the nipple and areola that developed during pregnancy, with the aim of contributing to the limited literature on this uncommon condition.

## CASE REPORT

A 30-year-old woman at 28 weeks' gestation presented with dark discoloration of both nipples that had developed during the third trimester. Seventeen years earlier, she developed hypopigmented areas on the chin, right areola, and lumbar region; at that time she was diagnosed with vitiligo and treated with topical pimecrolimus. The newly developed hyperpigmentation predominantly appeared on the previously depigmented areolar regions. Dermatological examination revealed asymmetrical, irregularly bordered macules with heterogeneous hyperpigmentation in light- and dark-brown tones on both areolas, more pronounced on the right (Figure 1).

Dermoscopy revealed a prominent and regular pigment network with heterogeneous light- and dark-brown coloration

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(Figure 2). Considering the differential diagnosis between melanoma *in situ* and benign melanosis of the nipple and areola, multiple punch biopsies (4 mm) were obtained from clinically and dermoscopically heterogeneous areas, including three from the right areola and one from the left areola, to adequately assess asymmetric, heterogeneous pigmentation. Histopathological evaluation demonstrated irregular acanthosis, confluence of the lower ends of the rete ridges, and irregular brown pigmentation of the basal layer (Figure 3). Immunohistochemical staining revealed scattered MART-1- and HMB-45-positive melanocytes in the basal layer, without clustering or a significant increase in number (Figure 4). No cytologic atypia, mitotic activity, or pagetoid spread were observed. Fine superficial hyperkeratosis was present. Additional findings included Ki-67 positivity limited to the basal epidermal layer, cytokeratin 5/6 positivity in surface epithelial cells, sparse cytokeratin 7 positivity, and negative p16 staining. Overall, these findings were consistent with benign melanosis of the nipple and areola; melanoma *in situ*

was excluded. The patient was placed under clinical follow-up.

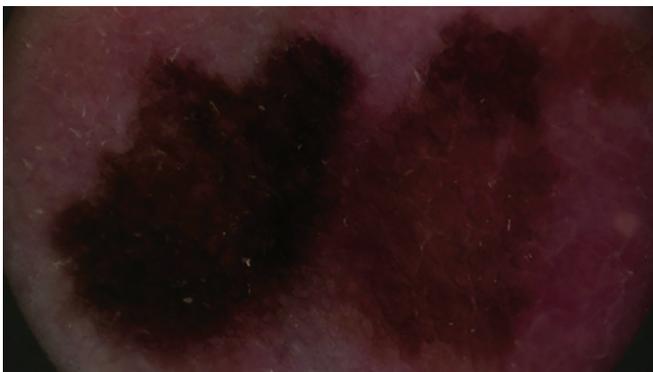
Written informed consent was obtained from the patient for publication of clinical data and images. According to institutional regulations, ethical committee approval was not required for this single case report.

## DISCUSSION

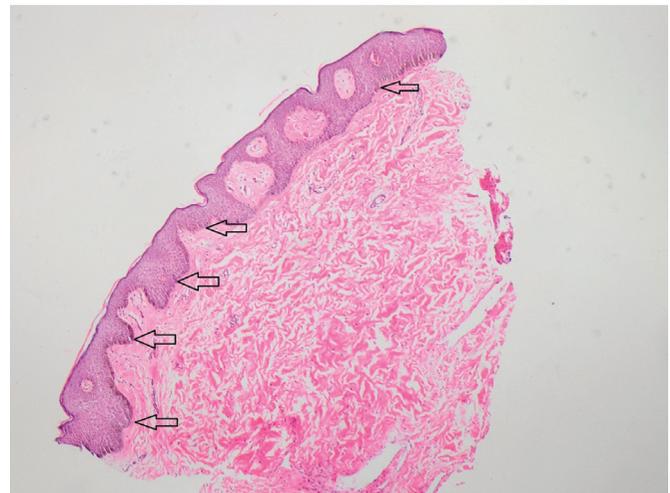
Approximately 20 cases of benign melanosis of the nipple and areola have been reported in the literature to date. The largest case series reported by Isbary et al.<sup>3</sup> included five patients identified at a single center over a 26-month period, suggesting that this condition may be underrecognized rather than truly rare. Most reported cases involve women of reproductive age and pregnant patients; moreover, a case of



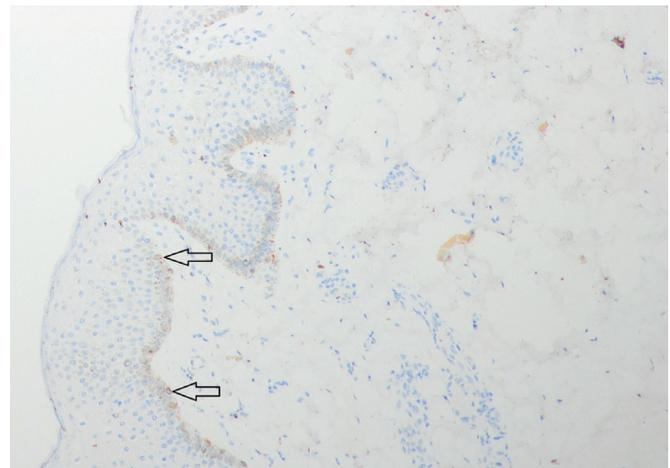
**Figure 1.** Asymmetric, irregularly bordered, heterogeneously hyperpigmented macules, light to dark brown in color are observed on the areola



**Figure 2.** Dermoscopic image showing a prominent and regular pigment network with heterogeneous light and dark brown coloration



**Figure 3.** Histologic sections of the skin biopsy show irregular acanthosis in the epidermis, confluence of the lower ends of the rete ridges, and increased brown pigmentation in the basal layer (arrows), (hematoxylin and eosin stain, x40)



**Figure 4.** MART-1 staining demonstrates scattered melanocytes in the basal layer without a noticeable increase in number (arrows), (MART-1 immunostaining, x100)

benign melanosis of the nipple and areola has been described in a 7-year-old girl with early thelarche. Taken together, these observations support a potential role for hormonal stimulation in the pathogenesis of this entity.<sup>1-6</sup>

Benign melanosis of the nipple and areola is frequently confused clinically with malignant melanoma and pigmented Paget's disease. The absence of an atypical pigment network and blue-white veil, features typical of melanoma, and the lack of perifocal erythema, commonly associated with pigmented Paget's disease, may aid dermoscopic distinction.<sup>7</sup> Because benign melanosis of the nipple and areola may closely resemble melanoma *in situ* on dermoscopic examination, histopathological confirmation remains essential. In the present case, the absence of melanocytic atypia and the lack of a significant increase in MART-1- and HMB-45-positive melanocytes ruled out melanoma *in situ*.

Additionally, the patient's history of vitiligo and the development of pigmented islands within previously depigmented areolar areas are noteworthy. Only three cases of coexistence of vitiligo and benign melanosis of the nipple and areola during pregnancy have been reported in the literature.<sup>3-5</sup> This rare coexistence represents a distinctive feature of the present case and suggests that pregnancy-related hormonal alterations may induce localized pigmentary changes in patients with vitiligo, thereby contributing to the development of benign melanosis of the nipple and areola.

## CONCLUSION

In conclusion, benign melanosis of the nipple and areola may clinically mimic malignant pigmented lesions, posing a diagnostic challenge. The limited number of reported cases contributes to its perceived rarity in the literature. Given the scarcity of experience and available data, particularly regarding its coexistence with vitiligo, we present this case to expand the current body of knowledge and emphasize the importance of accurate clinicopathological correlation.

## Footnotes

**Informed Consent:** Written informed consent was obtained from the patient for publication of clinical data and images.

## Authorship Contributions

Surgical and Medical Practices: M.D., Ş.D., F.K., A.O.H., Concept: M.D., Ş.D., F.K., A.O.H., Design: M.D., Ş.D., F.K., A.O.H., Data Collection or Processing: M.D., Ş.D., F.K., A.O.H., Analysis or Interpretation: M.D., Ş.D., F.K., A.O.H., Literature Search: M.D., Ş.D., F.K., A.O.H., Writing: M.D., Ş.D., F.K., A.O.H.

**Conflict of Interest:** The authors declared that they have no conflict of interest.

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