Case Report

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Nipple Eczema Causing Galactorrhea by Reactive Hyperprolactinemia, Complicated by a Galactocele

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ABSTRACT

We present a case of atopic nipple eczema leading to reactive hyperprolactinemia, by mechanical nipple stimulation. This reactive hyperprolactinemia caused an aggravation of the eczema because of the resulting galactorrhea, by local irritation and inflammation, and was complicated by a galactocele. This benign tumour was a source of concern for the patient and required several diagnostic radiographic examinations.

Keywords: Nipple eczema, hyperprolactinemia, galactocele

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Key Points

- Nipple eczema is a manifestation of atopic dermatitis and constitutes a known topography.
- Mechanical nipple stimulation causes reactive hyperprolactinemia.
- The occurrence of galactorrhea, hyperprolactinemia, or galactocele in a patient who is not breastfeeding should lead to clinical inspection of the skin to search for mechanical factors responsible for mechanical stimulation of the nipple area.

Introduction

Nipple eczema may be a manifestation of atopic dermatitis and constitutes a known topography (1). Bilateral presentation is the most common, with a chronic course involving successive periods of remission and aggravation, particularly in cases of additional contact eczema or during breastfeeding (2, 3).

Hyperprolactinemia is defined as an increase in plasma prolactin concentration to levels beyond the upper limit of the normal range, which is mostly between 15 and 25 ng/mL (corresponding to about 500 IU/mL), according to the method used (4). The typical etiologies of hyperprolactinemia are pituitary diseases (hypophysitis, macroadenoma), hypothalamic diseases (sarcoidosis, meningioma), drug treatments (neuroleptics), and endocrinological conditions (hypothyroidism, polycystic ovary syndrome, pregnancy and breastfeeding). Clinical manifestations are dominated by amenorrhea and galactorrhea.

Reactive hyperprolactinemia in response to external stimulation of the nipple is a known phenomenon that contributes to milk secretion during breastfeeding. The stimulus provided by breastfeeding leads to the secretion of prolactin through activation of the vagal nerve. Repeated stimulation of the nipple in non-lactating women can also activate similar mechanisms, triggering reactive hyperprolactinemia (5-7).

To the best of our knowledge, eczema due to contact of the nipples with maternal breast milk has never previously been reported.

We describe the case of a 48-year-old woman presenting with bilateral atopic eczema of the nipples causing galactorrhea through reactive hyperprolactinemia, resulting in clinical aggravation through secondary local irritation and inflammation, and galactocele. The patient gave her written and informed consent for this publication.

This study was presented as a poster in Journée dermatologiques de Paris in 2019.

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Case Presentation

A 48-year-old, postmenopausal woman had a history of atopic dermatitis diagnosed in childhood, with no other relevant medical history, and without current medical treatment. She had presented with regular flare-ups of generalized eczema, treated with class II topical steroids, but often insufficiently due to a strong fear of steroids. No systemic treatment was attempted, at the request of the patient who did not want to have oral treatment.

An allergology evaluation performed between 1995 and 2019 identified multiple sensitizations. The elimination of these allergens improved the patient's eczema everywhere, with the exception of the nipples, where the lesions persisted. The patient attended because of extremely debilitating, bilateral severe eczema of the nipples, of about twelve months duration. The manifestations were yellow crusty lesions of the nipples, discharging large amounts of a thick milky liquid, emanating from the pores of the lactiferous ducts (Figures 1, 2 and 3). The areolae were thickened and inflamed, and several eczema-like lesions were observed on the patient's back and arms. One nodular lesion of the right breast, a centimeter or so across, was detected on palpation. The rest of the clinical examination was normal.

Pathological examination of a skin biopsy specimen taken from the internal right periareolar region revealed a histological appearance consistent with chronic eczema, with no signs of bacterial or fungal infection.

Bilateral mammography and breast ultrasound examination revealed the presence of a micronodule of pseudocyst-like appearance, consistent with a galactocele of about a centimeter across, under the right areola.

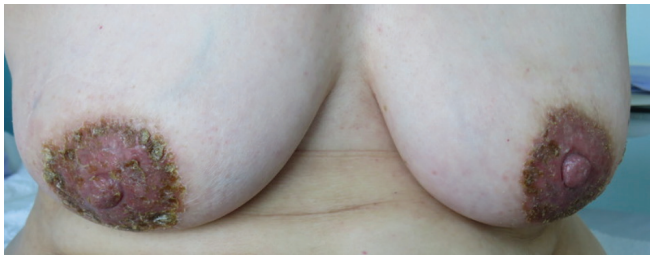

Figure 1. Severe eczema of both nipples. The clinical manifestations were as: crusty yellowing lesions of the nipples, with the discharge of large amounts of a thick milky liquid from fissures and the pores of the lactiferous ducts

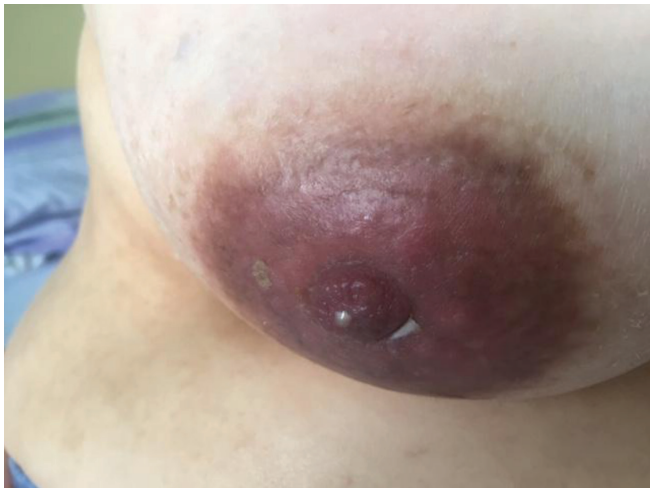

Figure 2. Galactorrhea of the right breast, after initial local care

The examination was classified as bilateral ACR 2 (American College of Radiologists).

Blood tests revealed hypereosinophilia (up to 1798 cells/mm3), and hyperprolactinemia (93.10 ng/mL). Determinations of the plasma concentrations of other hypothalamus-pituitary gland axis hormones (thyroid stimulating hormone, estradiol, follicle stimulating hormone, luteinizing hormone, cortisol and adrenocorticotropic hormone) were normal.

Brain magnetic resonance imaging (MRI) centered on the pituitary gland was performed to rule out pituitary macroadenoma. The results were entirely normal.

Galactocele induced by galactorrhea, secondary to hyperprolactinemia due to mechanical stimulation of the nipples in a context of bilateral atopic nipple eczema, was diagnosed (Figure 4).

Treatment with class I topical steroids, the application of which was checked during hospitalization, replaced by topical tacrolimus, resulted in the complete remission of the nipple eczema and the total cessation of galactorrhea. Tests on biological samples demonstrated a decrease in the prolactin blood level to 37.6 µg/L after 72 hours from the start of treatment, and to 22.9 µg/L (normal) after one month (Figure 5). Six months later she is still in complete remission without any recurrences after only 20 g of topical tacrolimus per month.

Discussion and Conclusion

Galactocele is a complication well known to gynecologists. It occurs postpartum, during breastfeeding, and is not a cause of clinical concern in these contexts. Nipple eczema is a problem well known to patients with atopy; it can greatly affect the quality of life and may be difficult to treat.

Outside the context of breastfeeding, several cases of galactocele in association with galactorrhea and hyperprolactinemia, secondary to prolactinoma have been described (8, 9). The present case is novel due to

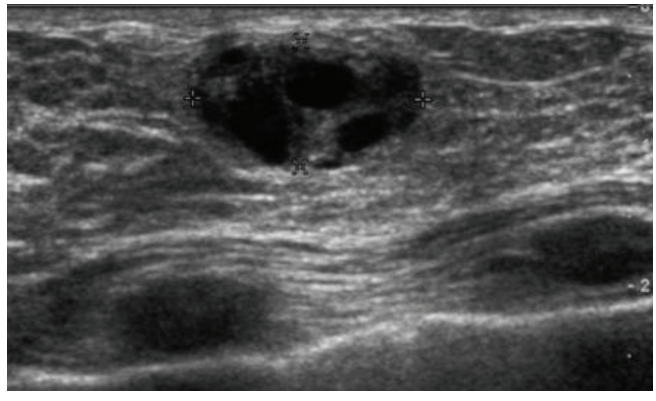

Figure 3. Ultrasound examination of a galactocele

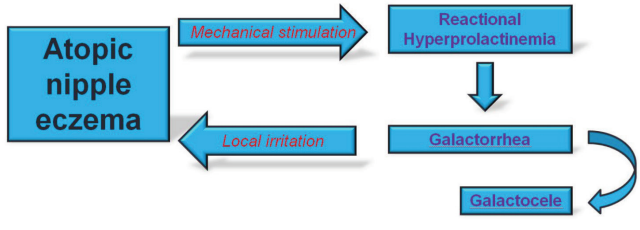

Figure 4. Graphical abstract

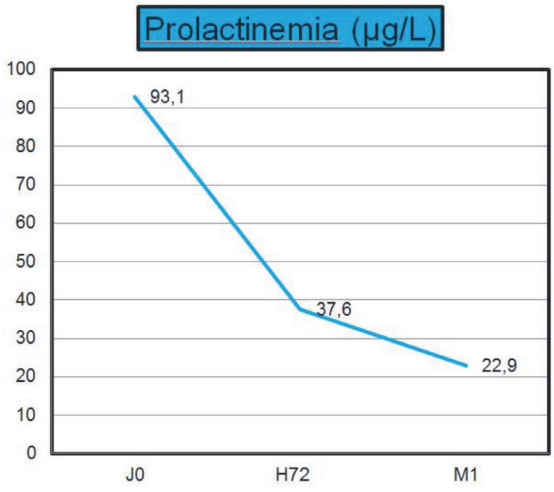

Figure 5. Decrease in prolactin levels

the absence of pituitary macroadenoma. Some cases have been reported after breast enlargement surgery (10-13), or following vacuum-assisted core biopsy of the breast (14) but the etiology in these cases remains unclear, but probably occurs by post-surgical obstruction of the milk ducts. Pediatric cases are also described, especially in male infants, which could represent a developmental anomaly, possibly promoted by an obstructive phenomenon involving a defect of hollowing of some primary epidermal buds (15, 16). However, galactocele has never been described as occurring secondary to a dermatological condition affecting the nipples. The common features of all these etiologies are probably the association of hyperprolactinemia and galactorrhea with a certain degree of obstruction of the milk ducts.

In conclusion, we describe the first case of nipple eczema, probably leading to the appearance of a galactocele through galactorrhea, secondary to reactive hyperprolactinemia.

Nipple eczema led to excessive mechanical stimulation of the nipples and the areolae, due to discharge from the lesion, itching and local care (including non-adhesive dressings in particular). This mechanical effect increased the pituitary secretion of prolactin through a hormonal response to local stimuli, thereby triggering the onset of galactorrhea outside the normal lactation period.

The occurrence of galactorrhea and/or hyperprolactinemia in a patient who is not breastfeeding should lead to clinical inspection of the skin to search for mechanical or traumatic factors responsible for mechanical stimulation of the nipple area. An increase in serum prolactin concentration is classically observed in cases of chronic nipple stimulation and MRI examinations of the pituitary gland are not necessarily required in this context. It is crucial to explain the importance of treatment to avoid such significant consequences.

Informed Consent: Written and informed consent of patient was obtained for publication.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Conception: K.C.; Design: K.C., C.B.P.; Supervision: C.B.P., H.M.; Materials: A.V., E.C.; Data Collection and/or Processing: A.V., E.C., C.B.P.; Analysis and/or Interpretation: H.M.; Literature Review: K.C.; Writing: K.C.

Conflict of Interest: No conflict of interest declared by the authors.

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