

CASE REPORT

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Erosive adenoma of nipple treated with cryotherapy and dermatoscopic features **Dua Cebeci¹**,  **Sirin Yasar²**,  **Pembegul Gunes³**¹ Famagusta State Hospital, Department of Dermatology and Venerology, Famagusta, Cyprus, Republic Of Turkish² Haydarpasa Training and Research Hospital, Department of Dermatology and Venerology, Istanbul, Turkey³ Haydarpasa Training and Research Hospital, Department of Pathology, Istanbul, Turkey

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**Abstract**

Erosive adenoma of the nipple (EAN) is a rare benign condition and originates from the lacteroducts of the nipple. It mimics benign conditions such as contact dermatitis, psoriasis and cutaneous infections, but Paget's disease is its main differential diagnosis. Patients usually present with a serous discharge from the nipple and nipple erosion. While the histopathological evaluation is being the gold Standard for diagnosis, dermatoscopy is an easy, practical and versatile optical tool that helps in the diagnosis of EAN. In this article we present fortyfour years old female patient with clinical and dermoscopic features of EAN which was referred to the Dermatology Service with a lesion on her left nipple.

Keywords: Erosive adenoma of the nipple, breast diseases, histopathology**Introduction**

Erosive adenomatosis of the nipple (EAN) is a benign tumor that develops from the lactiferous ducts of the nipple. It is generally seen 4-5.th decades, in woman [1]. Clinically, the lesion has a polymorphic structure and may appear in the form of nipple erosion, erythema, inflammation in the initial stages. Itching and pain are the main complaint. Symptoms can be aggravated in the premenstrual period [2-3]. This condition, can easily be mistaken with psoriasis and eczema in the early stages and with the Paget's disease clinic at later stage [4]. The use of dermoscopy has increased significantly in recent years to help diagnose skin conditions other than melanocytic lesions / non-melanocytic tumors. EAN's dermoscopic features first were described by Takashima et al. as the regular and small, linear cherry-red structures characteristically observed possibly reflect with luminal openings. However, with dermoscopy it is impossible to differentiate EAN from non-pigmented Paget's disease, pigmented melanoma and squamous cell cancer.

Therefore, the literature reports that careful dermoscopic observations and histopathological examinations, will be useful for the correct diagnosis of EAN [5]. Histologically, EAN is characterized by intra-ductal proliferation invading well-circumscribed, non encapsulated stroma. The inner layer of the cuboidal epithelial cells that make the apocrine secretion and the outer layer of the myoepithelial cells form the main cell population [6]. Immunohistochemistry tests and immunoperoxidase markers can be useful in making differential diagnosis with malignant diseases [7]. In this article we present the case of a 42- year-old white woman with erosive adenomatosis of the nipple, with clinical and dermoscopic features.

Case Presentation

Forty -two -years old female patient had applied to outpatient clinic for more than a year with the complaint of swelling, bleeding and discharge in the left nipple. Biopsy was taken with preliminary diagnosis of nipple eczema, Paget's disease and EAN. After the incisional biopsy, she applied to us due to enlargement of the lesion and the increase of bleeding. Dermatological examination revealed rough and thickened with erosion that caused mild papillary prominence and bleeding in the left nipple (Figure 1abc).

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Figure 1. ab; Erosion and slight growth in the left nipple. c; lobular, hemorrhagic appearance after 1 month

Dermoscopic examination with immersion gel observed, partial hemorrhage and 1 linear vessel structure close to the center on the background of the homogeneous pink white area (Figure 2a).

Histologic findings showed ductal hyperplasia in the solid cribriform pattern with double-row epithelium-lined fluoride and apocrine cell metaplasia without nuclear pleomorphism. The lesion was evaluated as compatible with EAN in mixed-proliferative type pattern. (Figure 3abc).

In mammographic imaging, bilateral type 3 parenchymal structure fibrocystic changes were detected. The patient did not accept surgical treatment. She was defined as BIRADS category 2, as therapy was applied topical 10% sucralfate and zinc mixture and then 3 cycles of spray cryotherapy for 10 seconds. Two weeks after application, the bleeding areas disappeared and the lesion regressed. Therefore we decided to continue the cryotherapy treatment (Figure 2 d). She will be followed up regularly for recurrence if any.



Figure 2. a; Eroded areas and 1 linear serpiginous vessels in dermoscopic examination, b; 10 days after topical treatment, c; cryotherapy application, d; 15. days after the first session of cryotherapy.

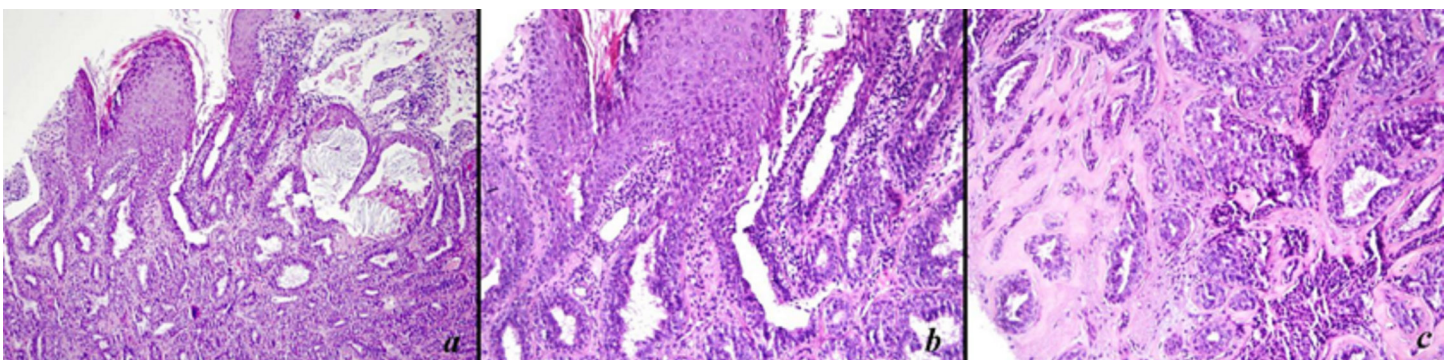


Figure 3. Hyperkeratosis, parakeratosis, adenosis that fills the entire dermis, and ductal hyperplasia that goes with double-row epithelium and fluoride and apocrine cell metaplasia (H & Ex 40,100,200)

Discussion

Erosive adenomatosis (EAN) of the nipple was first described by Jones in 1955 as fluoride papillomatosis or papillary adenoma of the nipple. Later, in 1959, LeGal et al. revealed the term “erosive adenomatosis” due to clinical and pathological findings. Other synonyms for EAN include nipple adenoma, subareolar

papillomatosis, nipple papillary adenoma, and fluoride subareolar ductal papillomatosis [8].

Although the pathogenesis is not clear there are two hypothesis about the origin of hyperplasia of these channels; one thought argues that origin is the precursor of breast adenocarcinoma, while the other thought suppose that is a marker for fibrocystic breast

changes. However, more evidence is needed to determine the relationship with fibrocystic 83 breast changes [9].

The association of EAN with ipsilateral or contralateral breast cancer has been reported in the literature. In this context, a direct causal relationship between EAN and breast cancer cannot completely excluded. Therefore, some authors suggest that cases with histology compatible with the papillomatosis lesions of the breast should be evaluated in the “B3” category and they recommend breast mammography imaging once a year and total excision involving nipple, areola and subareolar tissue in some suspected condition [10].

Skin biopsy is important histologically to distinguish EAN from intraductal carcinoma with atypical large cells with hyperchromatic eccentric nuclei and abundant cytoplasm is the main findings [8]. In our case, the absence of cytological atypia and the dominance of two cell types covering the ducts removed from the possibility of mammary paget's disease or intraductal carcinoma.

Dermoscopically, light brown diffuse pigmentation”, “irregular black spots and small blue-gray structures” “irregular linear veins, bright white lines or chrysalis-like structures are more prominent in pigmented mammary Paget's disease. Some of the features above-mentioned can seen also in classical (clinically nonpigmented) paget's disease [11]. This condition can be explained by a concept that benign lesions generally have a regular vascular structure - while malignant lesions have atypical vessels, irregular structures [12].

Our case report with light pink regular structures and luminal openings confirm the diagnosis of EAN. Therefore, more studies are needed on larger patient groups to support our observations.

Partial or complete nipple excision is the most recommended treatment option with the lowest recurrence rate. Mastectomy or extensive surgery should be avoided, especially in unmarried women [2]. Since the relationship between EAN and breast cancer cannot be ignored, cryotherapy is a method that can be used to provide local bleeding / discharge control when the surgery is not possible. In a previous study, cryosurgery has been shown a successful treatment in a patient who has been followed for 7 years. Thus, cryosurgery that is used in the treatment of other benign conditions, can eliminate the tumor by local destruction [13].

In our case, who did not accept any surgical treatment, based on this successful literature, we chose the less invasive and traumatic treatment as cryotherapy.

We treated with the open-spray technique, with a double freeze-thaw cycle, 10-second spray, and reaching a tissue temperature of -50°C . After forming a freezing ring, application repeated in 3 cycles within 1 minute. The duration of cooling to achieve an optimal depth of freeze necessary for this lesion was 10 seconds.

After the disappearance of bleeding areas and regression of the lesion we decided to follow-up the patient and continue this treatment. The patient was satisfied with the results, as the nipple structure was preserved.

Conclusion

The erosive adenoma of nipple (EAN) is typically a benign breast tumor, manifested by erythema, erosion, and crusting. Due to its variable clinical features it must distinguish from inflammatory skin diseases such as Paget's disease, psoriasis, and eczema. Besides the clinical approach and histology, dermoscopy is helpful and effective tool that promise to be useful for the accurate diagnosis of EAN. Cryosurgery can be offered as an alternative option in some patients who refuse conservative treatments.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Conflict of interests

The authors declare that they have no competing interests.

Financial Disclosure

All authors declare no financial support.

Patient informed consent

Written informed consent was obtained from study participant.

References

1. Spohn GP, Trotter SC, Tozbikian G, et al. Nipple adenoma in a female patient presenting with persistent erythema of the right nipple skin: case report, review of the literature, clinical implications, and relevancy to health care providers who evaluate and treat patients with dermatologic conditions of the breast skin. *BMC Dermatol*. 2016;16:4.
2. Ward KA, Burton JL. Dermatologic diseases of the breast in young women. *Clin Dermatol*. 1997;15:45-52.
3. Gu X, Wang G, Wu R, et al. Erosive adenomatosis of the nipple in a man. *Indian J Dermatol Venereol Leprol*. 2015;81:68-70.
4. Takashima S, Fujita Y, Miyauchi T, et al. Dermoscopic observation in adenoma of the nipple. *J Dermatol*. 2015;42:341-2.
5. Alvarez-Velaz S, Majluf-Caceres P, Gonzalez-Bombardiere S. Erythematous eroded plaque on the left nipple in a 75-year-old woman. *Indian J Dermatol Venereol Leprol*. 2019;85:307-9.
6. Moulin G. Superficial papillary adenomatosis of the nipple. *J Am Acad Dermatol*. 1997;36:133.
7. Kumar PK, Thomas J. Erosive adenomatosis of the nipple masquerading as Paget's disease. *Indian Dermatol Online J*. 2013;4:239-40.
8. Albers SE, Barnard M, Thorner P, et al. Erosive adenomatosis of the nipple in an eight-year-old girl. *J Am Acad Dermatol*. 1999;40:834-7.
9. Rosen PP, Caicco JA. Florid papillomatosis of the nipple. A study of 51 patients, including nine with mammary carcinoma. *Am J Surg Pathol*. 1986;10:87-101.
10. Crignis GS, Abreu L, Bucard AM, et al. Polarized dermoscopy of mammary Paget disease. *An Bras Dermatol*. 2013;88:290-2.
11. Errichetti E, Avellini C, Pegolo E, et al. Dermoscopy as a supportive instrument in the early recognition of erosive adenomatosis of the nipple and mammary paget's disease. *Ann Dermatol*. 2017;29:365-7.
12. Kuflik EG. Erosive adenomatosis of the nipple treated with cryosurgery. *J Am Acad Dermatol*. 1998;38:270-1.