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Original Article

Seasonal heat eccrine hidrocystoma: Robinson type

Khalifa E. Sharquie[1], Waqas S. Abdulwahhab[2]

[1] Department of Dermatology, College of Medicine, University of Baghdad, Center of Dermatology, Medical City Teaching Hospital, Iraq.
[2] Department of Dermatology, Al-Qassimi Hospital, Sharjah. College of Medicine, University of Sharjah, UAE.

Abstract

Objective To do a full clinical evaluation of all gathered cases of eccrine hidrocystomas of Robinson type.

Methods This is a cross-sectional descriptive clinical study where all patients with eccrine hidrocystomas were seen during the period from 2014-2023. The different demographic features were described with full clinical evaluation.

Results Eighteen patients were seen, their ages ranged from 30-60 years with 17 (94.4%) females and one (5.6%) male. All patients presented during summer time from May-September then followed by complete remission in winter time but recurrent on next summer. The rash was itchy and burning consisting of skin-colored or erythematous shiny clear papules of a few millimeters in size. When punctured by a needle, clear fluid appeared. The location of the rash was the face mainly on the cheeks, around the eyes, and forehead. The rash was exacerbated over any heat exposure like working in a kitchen.

Conclusion This is a specific variant of eccrine hidrocystoma that was seen mostly in middle-aged females with seasonal variation seen only in summer time. As the rash is inflammatory, itchy and seasonal, we suggest the name: seasonal heat eccrine hidrocystoma. As preventive measure, we suggest to do botulinum toxin type A injection in early hot season to minimize sweating, thus avoiding rash appearance.

Key words
Hidrocystoma; Eccrine hidrocystoma; Apocrine hidrocystoma.

Introduction

Hidrocystoma is a benign cystic tumor of the skin and there are two types of hidrocystomas, namely apocrine and eccrine, based on their histological and genetic characteristics. In 1893, Robinson described eccrine hidrocystomas in women who worked in hot and humid environments and presented with multiple vesicular lesions.[1] Another group of patients with solitary or few lesions, most of whom were male, Smith and Chernosky described in 1973.[2] It is known that these two types of hidrocystomas are called "Classic Robinson" and "Smith and Chernosky".

The eccrine hidrocystoma is a benign translucent cystic lesion that arises from the eccrine duct and is estimated to occur in 1 out of every 1000 skin biopsies.[3] Females between the ages of 30 and 70 are typically affected more often than males, but children and adolescents can also be affected.[4,5] Typically occurring during summer months and hot humid weather, it has a chronic

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Address for correspondence
Professor Khalifa E. Sharquie
Department of Dermatology, College of Medicine,
University of Baghdad, P.O. BOX 61080,
Postal code 12114, Baghdad, Iraq.
Ph: 009647901468515.
Email: ksharquieprof@yahoo.com

course and seasonal variability.[6] It usually presents as asymptomatic, skin-colored papulonodular or cystic lesions with bluish tents ranging from 2-5 mm in diameter, with a centrofacial distribution, but may also be pigmented in some patients.[7-9]

In histopathology, eccrine hidrocystomas appear as a single cystic cavity comprised of 1-2 layers of cuboidal cells, and they occur within the superficial or mid-dermal layer of the skin.[7] Diseases that are rarely associated with eccrine hidrocystomas are Graves' disease, Parkinson's disease, Goltz-Gorlin syndrome, Schöpf–Schulz–Passarge syndrome, craniofacial hyperhidrosis and prolactinoma.[10-14] Eccrine hidrocystoms are important to differentiate from apocrine hidrocystoms, epidermal cysts, syringoma, mucoid cysts, hemangioma, lymphangioma, cystic basal cell carcinoma, and malignant melanoma.[15]

Treatment modalities for eccrine hidrocystoma include simple needle puncture, surgical excision or by surgical incision with cauterization of the cyst wall, cryotherapy, microdermabrasion, topical 1% atropine ointment, topical botulinum toxin type A, and pulse dye laser with 585 nm laser.[15-17]

Patients and Methods

Eighteen patients complaining of eccrine hidrocystomas of Robinson type were recruited during the period from 2014-2023 years were involved in this cross-sectional descriptive, clinical study. The Declaration of Helsinki was followed during the study. Informed Consent forms were obtained from all patients after discussing the nature of the study. The close-up photo was taken at the same place with a fixed distance and illumination. In addition, all included patients accepted the idea to share their photos in this present work. Full epidemiological and demographic features were recorded. A thorough full history to establish the right clinical diagnosis with thorough examination was done. Name, age, gender, residence, occupation, duration of the lesions, chief complaint, history of hyperhidrosis, seasonal variation and aggravating factors like sun/heat exposure were recorded. Associated symptoms such as itching, burning, and discomfort were noticed. The site, type, and geographical distribution of the lesions, color, cyst content, and number of lesions were reported. In addition, a family history of eccrine hidrocystoma, personal or family history of diabetes mellitus and thyroid disease were taken.

Results

A total of eighteen patients complaining of eccrine hidrocystomas of Robinson type were considered in the present work, their ages ranged from 30-60 years with 17 (94.4%) females and one (5.6%) male. All patients presented during summer time from May-September then followed by complete remission in winter time but recurring next summer. The rash was itchy and burning consisting of skin-colored or erythematous shiny clear papules of a few millimeters in size and had a bad cosmetic appearance. When these papules were punctured by a needle, clear fluid appeared. The location of the rash was the face mainly on the cheeks, around the eyes, and forehead. The rash was exacerbated by any heat exposure like working in the kitchen. While in one male taxi driver patient, the rash was appeared only on the left side of face where there was sunlight exposure **(Table 1; Figures 1-4)**.

Table 1 Sociodemographic characteristics study.

Characteristic		*n (18)*
Age range in years:	Min	30
	Max	60
Gender:	Male	1 (5.6%)
	Female	17 (94.4%)

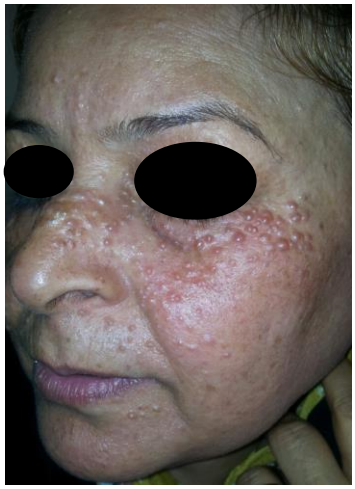

Figure 1 50-year-old patient showing typical eccrine hidrocystoma rash distributed around the center of the face.

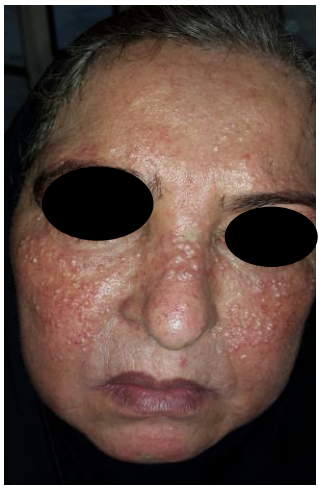

Figure 2 55-year-old female patient with eccrine hidrocystoma, where the erythematous rash was located all over the face.

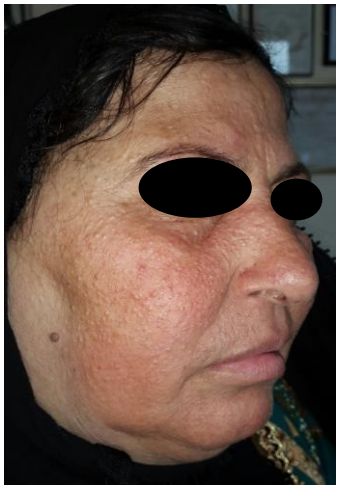

Figure 3 57-year-old female with eccrine hidrocystoma showing the distribution of rash all over the face.

Discussion

Eccrine hidrocystoma is a cystic lesion that measures around 1-3 mm in diameter and is commonly found on the face, in particular the periorbital area. The symptoms usually subside in the winter but worsen in the summer. Previous studies have documented this seasonal variation in exacerbation and remission.[7,9]

Despite poor elucidation of their pathogenesis, they are thought to be caused by eccrine duct obstruction and sweat retention, as evident in cystic dilation and flattening of the ductal cells or adenomatous proliferation in the excretory duct.[4] Apocrine hidrocystoma remains a major differential diagnosis. Apocrine hidrocystomas are usually 3-15 mm in size and are located in the inner canthus near the eyelid margin, as well as the forearms, chests, axillae, and labia majora, and do not show seasonal variation[5] and on histological examination, the dermis shows papillary projections lined by columnar and myoepithelial cells that secrete decapitation secretion and contain diastase-resistant periodic acid-Schiff (PAS) positive granules. Eccrine hidrocystomas, on the other hand, are usually unilocular and lined with two layers of cuboidal cells and they lack papillary projections, myoepithelial cells, decapitation secretion, and diastase-resistant PAS-positive granules.[5]

The present study clearly demonstrates that all cases show very characteristic clinical features of eccrine hidrocystoma Robinson without associated comorbidities, and 94.4% of the cases were middle-aged women between 30 and 60 years. Patients presented from May to September during summer time, remitted during winter time but presented again during summer the following year. The rash was characterized by skin-colored or erythematous shiny clear papules that are of a few millimeters in size, and it was itchy and burning. Upon puncturing it with a needle, a clear fluid appeared at the site. This rash mostly appeared on the cheeks, around the eyes, and on the forehead on the face, where it spread. The rash seemed to be more severe over prolonged periods of heat exposure, so it was more commonly seen among people working in a kitchen or who sweat profusely over a prolonged period of time.

As these patients cannot avoid heat exposure, especially in summer time, hence we suggest to give botulinum toxin type A (BoNTA) as a

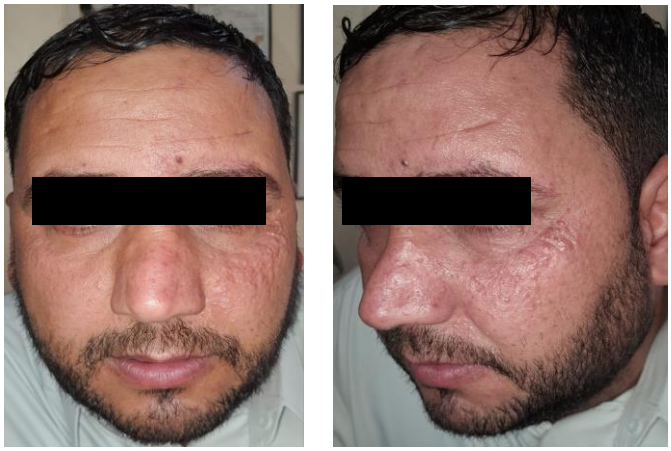

Figure 4 A 30-year-old taxi driver with rash only on left side of face at the side of sunlight exposure.

powerful neurotoxin that inhibits acetylcholine release from presynaptic vesicles thus preventing sweating during hot season. It could be given in May and its action will last for 6 months thus minimizing or preventing the rash relapse.[18]

Conclusion

This is a specific variant of eccrine hidrocystoma that was mostly observed in middle-aged females with seasonal variation and seen only in summer time. As the rash is inflammatory, itchy and seasonal, we suggest the name seasonal heat eccrine hidrocystoma.

Declaration of patient consent The authors certify that they have obtained all appropriate patient consent.

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Conflict of interest Authors declared no conflict of interest.

Author's contribution

KES: Substantial contributions to study design, acquisition of data, manuscript writing and final approval of the version to be published.

WSA: Substantial contributions to analysis and interpretation of data, critical review and final approval of the version to be published.

References

1. Robinson AR. Hidrocystoma. J Cutan Genitourin Dis 1893; 11:293-303. Quoted from: Sperling LC, Sakas EL. Eccrine hidrocystomas. *J Am Acad Dermatol*. 1992;**26**:780-2.
2. Smith JD, Chernosky ME. Hidrocystomas. *Arch Dermatol*. 1973;**108**:676-9.
3. Dhattarwal N, Sondhi M, Mahajan VK. Multiple eccrine hidrocystomas of the face (Robinson type): Response to topical hyoscine butyl bromide. *Our Dermatol Online J*. 2021;**12(3)**:307-9.
4. Maeng M, Petrakos P, Zhou M, Levine B, Lelli G, Setabutr P. Bi-institutional retrospective study on the demographics and basic clinical presentation of hidrocystomas. *Orbit*. 2017;**36**:433-5.
5. Ovhal AG, Deshkulakarani SV, Abhange RS, Birare SD. Rare benign cystic lesions on face: Apocrine hidrocystoma. *Indian J Dermatol*. 2016;**61**:237.
6. Correia O, Duarte AF, Barros AM, Rocha N. Multiple eccrine hidrocystomas—from diagnosis to treatment: The role of dermatoscopy and botulinum toxin. *Dermatology*. 2009;**219**:77-9.
7. Alfadley A, Al Aboud K, Tulba A, Mouras MM. Multiple eccrine hidrocystomas of the face. *Int J Dermatol*. 2001;**40(2)**:125-9.
8. Kubaisi Thamir. Eccrine Hidrocystoma. *Clinical Descriptive Study*. 2009;**7:**34-8.
9. Odom R, James W, Timeltly B. Epidermal Nevi, Neoplasms, and Cysts in: Andrews Diseases of the Skin, Clinical Dermatology 9th edition WB Saunder Company, Philadelphia, 2000, pp 800-868.
10. Nagai Y, Ishikawa O, Miyachi Y. Multiple eccrine hidrocystomas associated with Graves' disease. *J Dermatol*. 1996;**23(9)**:652-4.
11. Schröder K, Goerdt S. Multiple eccrine hidrocystomas in Parkinson disease. *Hautartzt*. 1997;**48(4)**:270-3.
12. Ascherman JA, Knowles SL, Troutman KC. Extensive facial clefting in a patient with Goltz syndrome: multidisciplinary treatment of a previously unreported association. *Cleft Palate Craniofac J*. 2002;**39**:469-73.
13. Kudligi C, Kuntoji V, Bhagwat P, Raj SB. Eccrine hidrocystoma: A brief report. *Our Dermatol Online J*. 2018;**9**:341-2.

14. Ma L, Jakobiec FA, Wolkow N, Dryja TP, Borodic GE. Multiple eyelid cysts (apocrine and eccrine hidrocystomas, trichilemmal cyst, and hybrid cyst) in a patient with a prolactinoma. *Ophthalmic Plast Reconstr Surg*. 2018;**34**:e83-5.
15. Khashayar Sarabi, Amor Khachemoune. Hidrocystomas A Brief Review. *MedGenMed*. 2006;**8(3)**:57.
16. Armstrong DK, Walsh MY. Corbett JR. Multiple facial eccrine hidrocystomas: effective topical therapy with atropine. *Br J Dermatol*. 1998;**139**:558-9.
17. Tanzi E, Alster T. Pulsed dye laser treatment of multiple eccrine hidrocystomas: a novel approach. *Dermatol Surg*. 2001;**27**:898–900.
18. Alster TS, Harrison IS. Alternative Clinical Indications of Botulinum Toxin. *Am J Clin Dermatol*. 2020;**21(6)**:855-80. doi 10.1007/s40257-020-00532-0. PMID: 32651806.