



CASE

Infected Punctum–Associated Cyst Mimicking Erysipelas

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SUMMARY

Epidermoid cysts (congenital and acquired) are not the unusual benign lesions. But to our knowledge, this is the first report in the English literature that describes an uncommon presentation of the infected *acquired epidermoid cyst* (ie, *punctum–associated cyst* or *atheroma*) manifesting as unilateral facial erysipelas in a 74-year-old Caucasian female. Terminology and the “submarine sign” ultrasound appearance are also analyzed.

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Please cite this article as: Fesenko II, Snisarevskiy PP, Zaritska VI. Infected punctum–associated cyst mimicking erysipelas. J Diagn Treat Oral Maxillofac Pathol 2021;5(2):15–9.

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Paper received 6 January 2021

Accepted 16 January 2021

Available online 28 February 2021

<https://dx.doi.org/10.23999/j.dtmp.2021.2.1>

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INTRODUCTION

Punctum-associated cyst (PAC) is termed in the literature as epidermoid cyst^{1,2}, epidermal cyst³, keratinous cyst⁴, sebaceous cyst⁴, retention cyst of the sebaceous gland⁵, and atheroma⁵. The authors are united in their opinions that *cutaneous punctum* is a hallmark of the clinical diagnosis for the acquired keratin-filled cutaneous-linked cysts (ie, acquired epidermoid cyst).¹⁻⁵ They describe punctum as 1) a place of plugging of the follicular orifice¹ and 2) a place where the skin is fused with the cyst membrane (in this place, a cutaneous retraction point can be found).⁵

Hoang et al notes that such benign lesions may become inflamed as a result of the rupture of the cyst wall (ie, cyst lining).¹ Usually, with suppuration of PAC, the skin above it has a round-shape hyperemia, edematous, does not fold into a fold, the formation is painful and badly movable.⁵ Even fluctuation can be determined (due to the appearance of pus).⁵

The differential diagnosis of PAC can be performed with furuncle⁶, cutaneous above-the-skin-level manifestations (subcutaneous granuloma) of odontogenic cutaneous sinus tract⁷, non-odontogenic subcutaneous granuloma⁵, and pyogenic granuloma⁸.

This study presents a uniquely rare case of infected PAC of the infraorbital area mimicking unilateral erysipelas in a 74-year-old female.

CASE

A 74-year-old Caucasian female presented to the center of maxillofacial surgery in July 2015 with a local facial pain and a skin erythema in the right infraorbital area which began 4 days ago.

Examination revealed an erythematous area (severe redness) of the right face extending vertically from the projection of the infraorbital rim to the angle of the mouth and horizontally from the right zygomatic area to the right nasal ala. Also, a separate erythematous area (moderate redness) at the dorsum of the nose with a wound on the skin was visualized what mimicked the facial emphysema. But, the presence of a punctum (Fig 1) on the skin surface (in the middle of erythema) at the right infraorbital area with a white 1.5-mm circle around gave a reason to suspect an infected punctum-associated cyst with atypical manifestation.

Under the local anesthesia (right extraoral infraorbital nerve block using 0.7 ml Ultracain D-S forte, Frankfurt, Aventis Pharma Deutschland GmbH, Germany) a small diameter elliptical incision was performed with the inclusion of the punctum¹. A suppurated malodorous cheese-like content was obtained and the fragment of a thick white cystic wall (what is typical for the PACs) was removed during the curettage (Fig 2).

Microscopic histopathologic examination confirmed the diagnosis *atheroma* (common term in some East European countries) (ie, *acquired type of epidermoid cysts*) showing a stratified squamous epithelium with perifocal inflammation. Postoperative period was smooth with no pain and gradual (during several days) decrease of skin erythema.

DISCUSSION

Epidermoid cyst can be congenital and acquired.¹ To the acquired ones belong punctum-associated cysts (ie, atheromas) which can be suspected by collecting anamnesis and performing clinical and ultrasound examination.^{1-3,5} Moreover, Lee et al introduced a “submarine sign” term as a special ultrasonographic feature of the epidermoid cysts.⁹ Such term was applied because a keratin-plugged orifice of the PAC was visualized on sonograms as a submarine periscope.

Nowadays, the literature indicate that the term *sebaceous cyst* is considered misnomer due to the fact of absence of sebaceous glands within the cyst lining.

A small elliptical incision with partial skin removal and cystectomy is recommended if a punctum or scar is present.⁵ Also, the malignant degeneration of the epidermoid cysts is described what required a wide excision of the tumor (with a small possibility of radiation therapy after surgery) or radiation therapy as a primary treatment.¹⁰ Multiple works reported carcinomas arising from epidermoid/sebaceous cysts (patients' age varied from 21 to 89 yrs) what required from surgeons to motivate patients to remove the cysts as soon as possible.¹⁰⁻¹⁵

Veenstra et al summarized global literature presenting the data that squamous cell carcinoma arising from epidermal cysts has an incidence ranging from 0.011 to 0.045 percent.¹⁴



FIGURE 1. Arrow indicates a punctum (ie, keratin-filled orifice) of the cyst in a 74-year-old female. Printed with permission and copyrights retained by I.I.F.



FIGURE 2. Specimen visualized as a thick shell-like fragment of a cystic wall (*arrow*) and a suppurated malodorous cheese-like content (*arrowhead*). Printed with permission and copyrights retained by I.I.F.

According to Ochs and Dolwick erysipelas distinguished from other soft tissue infection (cellulitis) primarily by its well-defined and raised margins.¹⁶ In our case the presence of only one part of a cystic wall explains why the erythematous skin area was so large and had no well-defined round-shape borders. Analysis of the English literature sources show no evidence of previously published cases of acquired infected epidermoid cysts mimicking erysipelas.

CONCLUSIONS

In sum, the proposed term *punctum-associated cysts* can be applied to the acquired epidermoid cysts which show the presence of plugged orifice, which have “submarine sign” ultrasonographic appearance and which were previously termed *sebaceous cysts* (also known as *atheroma* and *retention cysts of the sebaceous glands*). Such punctum can be very useful in differential diagnostics between infect cyst and unilateral facial erysipelas.

TERM OF CONSENT

Written patient consent was obtained from all patients to publish the clinical photographs.

AUTHOR CONTRIBUTION

Conceptualization: Fesenko II. Data and interpretation acquisition: Snisarevskiy PP, Zaritska VI. Drafting of the manuscript: Fesenko II. Critical revision of the manuscript: Snisarevskiy PP, Zaritska VI, Fesenko II. Approval of the final version of the manuscript: all authors.

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