

Cutaneous Bronchogenic Cyst Presenting as a Keloid on the Back – A Case Report

Julia Nowowiejska¹, Camilo Arias-Rodriguez², Giuseppe Argenziano³, Andrea Ronchi⁴,
Vincenzo Piccolo³

1 Department of Dermatology and Venereology, Medical University of Bialystok, Poland

2 Department of Dermatology, Universidad Pontificia Bolivariana, Medellín, Colombia

3 Dermatology Unit, University of Campania, Naples, Italy

4 Pathology Unit, University of Campania, Naples, Italy

Key words: bronchogenic cyst, keloid, scar, dermoscopy, dermatopahtology

Citation: Nowowiejska J, Arias-Rodriguez C, Argenziano G, Ronchi A, Piccolo V. Cutaneous Bronchogenic Cyst Presenting as a Keloid on the Back – A Case Report. *Dermatol Pract Concept*. 2024;14(1):e2024054. DOI: <https://doi.org/10.5826/dpc.1401a54>

Accepted: September 17, 2023; **Published:** January 2024

Copyright: ©2024 Nowowiejska et al. This is an open-access article distributed under the terms of the Creative Commons Attribution-NonCommercial License (BY-NC-4.0), <https://creativecommons.org/licenses/by-nc/4.0/>, which permits unrestricted noncommercial use, distribution, and reproduction in any medium, provided the original authors and source are credited.

Funding: None.

Competing Interests: None.

Authorship: All authors have contributed significantly to this publication.

Corresponding Author: Julia Nowowiejska, MD, PhD, Department of Dermatology and Venereology, Medical University of Bialystok, Poland. Phone: +48857409572 E-mail: julia.nowowiejska@umb.edu.pl

Introduction

Bronchogenic cyst (BC) is a rare congenital condition that occurs due to an impaired process of lung development. The pathogenesis involves a set of cells that separate from the rest, which differentiate by themselves and develop a small lung bud [1]. BC is usually diagnosed in the first years of life and manifests clinically as a tumorous mass or orifice draining fluid [2], symptomatic in about half of cases [1]. The treatment of choice is surgical removal [2].

Case Presentation

Young girl, Fitzpatrick III, first presented to the dermatology out-patient department at the age of 9 years. She had already undergone previously two surgeries due to a small tumefaction, draining seropurulent exudation, located in the scapular region. The excised tissue was sent for histopathological examination and revealed a sebaceous cyst. The parents decided to visit a doctor again because, despite those two surgeries, they were concerned about the persistent and continuous drainage from a small orifice on the surface of a lesion that resembled a keloid scar, which was additionally constantly growing (Figure 1A). Upon dermoscopy, the

lesion displayed linear vessels arranged peripherally over a pink to white structureless background, resembling a keloid (Figure 1B). On the latest evaluation, dermoscopy of the grown lesion additionally showed pigmented tan lines and circles arranged linearly, located also peripherally, which could correspond to pigmentation due to melanocyte activation due to scar formation. The patient's parents refused another excision or biopsy of the lesion at that time. Later, the patient presented for the second time one year later due to further enlargement of the lesion, but this time a deep shaving biopsy was taken to exclude dermatofibrosarcoma protuberans. The result of the histopathological examination (Figure 1, C and D) unexpectedly revealed cutaneous bronchogenic cyst.

Conclusions

Presumably, extrapulmonary BC located on the periscapular area develops due to an abnormal budding of the tracheobronchial primitive foregut during early embryogenesis, with migration to the thorax. Other proposed theories include: metaplasia of pre-existing cutaneous tissue, primary bizarre differentiation of skin cells in formation [3], and

development from multipotent stem cells that would undergo cystic degeneration [4].

The usual extrapulmonary localization of bronchogenic cysts is mediastinum [1,2,4] however, in our case, it was the skin of the scapular region. In the available literature, there are only 15 cases of scapular BC, of which most were children with male predominance [2,3,5,6], unlike our case, however with no dermoscopy of this disorder. We studied all available cases of BCs and the whole list is presented in the supplementary Table 1.

In the described patient, the clinical picture involved a slowly growing tumor with pus leakage, which is the usual presentation of BC [2]. However, later it resembled a keloid, which was symptomatic and grew over time, hence the differential diagnosis was dermatofibrosarcoma protuberans. We did not find any other BC description clinically resembling a keloid. We also need to take into account that it might have been actually a regular keloid scar after previous excisions coexisting with a BC but hence, one must be careful in order not to miss another pathology hidden underneath.

Possible complications include cyst rupturing or its compression on other structures. In our case, none of these happened because it was located externally. Another

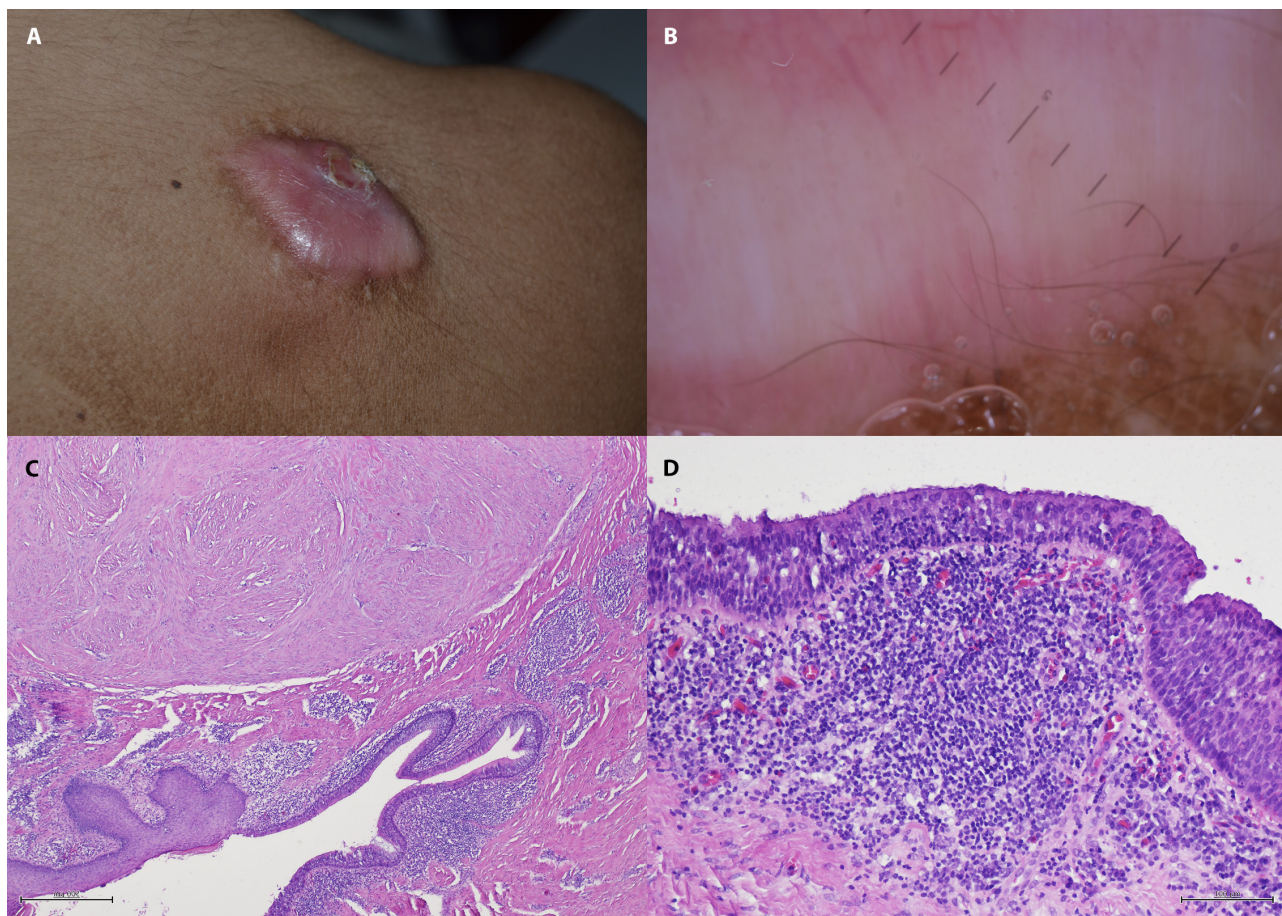


Figure 1. (A) Clinical picture of the bronchogenic cyst resembling a keloid scar. (B) Dermoscopic picture of the bronchogenic cyst; linear vessels arranged peripherally over a pink to white structureless background, resembling a keloid. (C,D) Microscopic pictures of the sample taken from the bronchogenic cyst, H&E, 10x and 40x, respectively.

potential complication is infection. Noteworthy, it has been documented that BC may undergo malignant transformation [1].

Hereby we describe a very rare case of cutaneous bronchogenic cyst. Considering the possibility of malignant transformation, dermatologists should be aware of such entities to early diagnose and remove the cyst.

References

1. Suen HC, Mathisen DJ, Grillo HC, et al. Surgical Management and Radiological Characteristics of Bronchogenic Cysts. *Ann Thorac Surg.* 1993;55(2):476-481. DOI: 10.1016/0003-4975(93)91022-f. PMID: 8431062.
2. Ozel SK, Kazez A, Koseogullari AA, Akpolat N. Scapular bronchogenic cysts in children: case report and review of the literature. *Pediatr Surg Int.* 2005;21(10):843-845. DOI: 10.1007/s00383-005-1531-5. PMID: 16180006.
3. Al-Balushi Z, Ehsan MT, Al Sajee D, Al Riyami M. Scapular Bronchogenic Cyst: A Case Report and Literature Review. *Oman Med J.* 2012;27(2):161-163. DOI: 10.5001/omj.2012.33. PMID: 22496944. PMCID: PMC3321343.
4. Aldawood Z, Moyer DJ, Woo SB. A Bronchogenic Cyst Masquerading as a Tongue Mass. *Head Neck Pathol.* 2021;15(4):1404-1408. DOI: 10.1007/s12105-021-01303-x. PMID: 33638760. PMCID: PMC8633169.
5. van der Putte SC, Toonstra J. Cutaneous 'bronchogenic' cyst. *J Cutan Pathol.* 1985;12(5):404-409. DOI: 10.1111/j.1600-0560.1985.tb00437.x. PMID: 4056165.
6. Tresser NJ, Dahms B, Berner JJ. Cutaneous bronchogenic cyst of the back: a case report and review of the literature. *Pediatr Pathol.* 1994;14(2):207-212. DOI: 10.3109/15513819409024254. PMID: 8008684.