Dermatology Practical & Conceptual

Clinical and Histopathological Insights into Acantholytic Dyskeratotic Acanthoma: A Case Series

Buğra Burç Dağtaş[1], Cem Leblebici[2], Cemre Büşra Türk[3], Asude Kara Polat[4], Ayşe Esra Koku Aksu[1]

1 University of Health Sciences, Istanbul Training and Research, Department of Dermatology, Istanbul, Turkey
2 University of Health Sciences, Istanbul Training and Research, Department of Pathology, Istanbul, Turkey
3 Massachusetts General Hospital, Department of Surgery, Harvard Medical School, MA, USA
4 Istanbul Arel University, Memorial Hospital, Department of Dermatology, Istanbul, Turkey

Key words: Acantholytic dyskeratotic acanthoma, Acantholysis, Dyskeratosis, Acanthoma

Citation: Dağtaş BB, Leblebici C, Türk CB, Polat AK, Koku Aksu AE. Clinical and Histopathological Insights into Acantholytic Dyskeratotic Acanthoma: A Case Series. *Dermatol Pract Concept*. 2025;15(3):5455. DOI: https://doi.org/10.5826/dpc.1503a5455

Accepted: June 4, 2025; **Published:** July 2025

Funding: None.

Competing Interests: None.

Authorship: All authors have contributed significantly to this publication.

Corresponding Author: Buğra Burç Dağtaş, MD. University of Health Sciences, İstanbul Training and Research Hospital, Department of Dermatology, Istanbul /Turkey. Orcid ID: 0000-0002-9592-9968. E-mail: bugradagtas@gmail.com

Introduction

Acantholytic dyskeratotic acanthoma (ADA) is a rare epidermal lesion characterized by acantholysis and dyskeratosis. First described in 2007, ADA typically presents as solitary papules or plaques less than 1 cm in diameter, confirmed histopathologically [1]. Clinically, ADA may mimic verruca vulgaris, irritated seborrheic keratosis (ISK), squamous cell carcinoma (SCC), and basal cell carcinoma (BCC). The presence of confluent acantholytic dyskeratosis is critical for diagnosis. Due to histological similarities with other acantholytic dermatoses, accurate differential diagnosis is essential [2]. This study evaluated the clinical and histopathological features of eight patients diagnosed with ADA, aiming to expand the limited cumulative data in the literature and highlight key distinguishing features to aid in accurate diagnosis.

Case Presentations

The patients, aged 49 to 89 years, had a mean age of 65.0 ±14.0 years; 62.5% were male and 37.5% female (Table 1). Two patients had BCC, one had non-Hodgkin lymphoma (NHL) with prior radiotherapy, and one had bladder carcinoma. The mean lesion duration was 14.6 ±19.4 months, with a median of six months. Lesions averaged 8.9 ±5.4 mm in size, with a median of 8 mm. The majority of lesions were located on the trunk (50%), followed by the thigh (37.5%) and the gluteal region (12.5%) (Figure 1). All patients underwent complete surgical excision.

The most frequent differential diagnoses included verruca vulgaris (22.1%), ISK (22.1%), and actinic keratosis (16.7%). Histopathological analysis revealed hyperkeratosis and acanthosis in all cases, with psoriasiform acanthosis

Table 1. Patient Characteristics, Lesion Features, and Histological Findings in Acantholytic Dyskeratotic Acanthoma.

Case (No)	Age (years)	Sex	Known Disease	Duration (months)	Localization	Differential diagnosis	Size (mm)	Hyperkeratosis	Acanthosis	Level of Acantholysis	Level of Dyskeratotic Cells	Confluent Appearance	Corp Ronds	Grain	Suprabasal Cleft Formation	Superficial Lymphocyte Infiltration
1	54	M	NHL	60	Left thigh	Bowen, SCC, Cut. Met	20	+	+	Suprabasal/ epidermis lower level	Spinal layer	+	–	–	–	+
2	49	M	–	12	Right thigh	Wart, ISK, AK	3	+ (Prominent keratin horn)	+	Epidermis lower level	Spinal layer	–	–	+	–	+
3	82	F	BCC	6	Trunk	AK, SCC	8	+	+	Epidermis lower level	Spinal layer	+	+	+	–	+
4	89	M	BCC	6	Trunk	BCC	4	+	+	Suprabasal/ epidermis lower level	Spinal layer	+	+	–	+	+
5	68	M	Bladder CA	1	Glutea	DF, SK	10	+	+ (Psoriasiform)	Suprabasal/ epidermis lower level	Spinal layer	–	–	+	+	+
6	60	F	–	6	Trunk	Wart, ISK	6	+	+	Suprabasal/ epidermis lower level	Spinal layer	+	–	–	+	+
7	63	F	–	22	Right thigh	Wart, ISK	12	+	+	Epidermis lower level	Spinal layer	+	–	+	+	+
8	55	M	–	4	Trunk	AK, ISK, Wart	8	+	+	Epidermis lower level	Spinal layer	–	–	–	–	–

M: Male, **F:** Female;

Abbreviations: NHL: non-Hodgkin lymphoma; BCC: basal cell carcinoma; Bladder CA: bladder carcinoma; ISK: irritated seborrheic keratosis; SCC: squamous cell carcinoma; AK: actinic keratosis; DF: dermatofibroma; SK: seborrheic keratosis; Cut. Met: cutaneous metastasis; Bowen: Bowen's disease; +: presence of histopathological finding; –: absence.

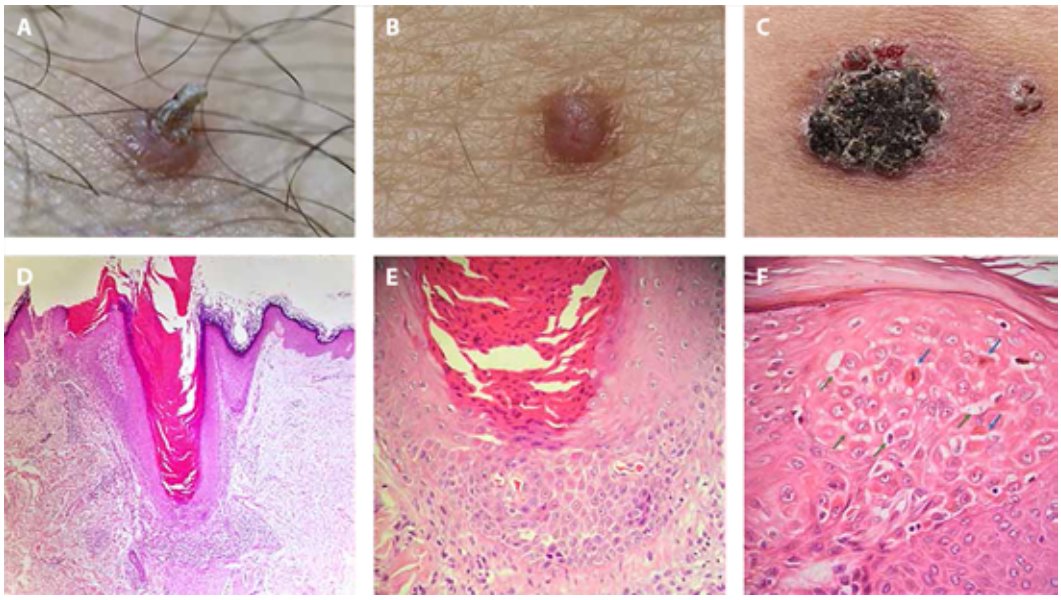

Figure 1. (A) Hyperkeratotic corn-covered, indurated papule with an erythematous base, measuring 3 mm in diameter, located on the right thigh. This clinical presentation correlates with the orthohyperkeratosis and follicular involvement observed histologically in panel (D). (B) Brownish papule measuring 4 mm with slight central erosion, located on the trunk. The central erosion is reflected histologically by the focal acantholysis and sparse dyskeratotic keratinocytes observed in panel (E). (C) Plaque approximately 2 cm in size with an erythematous base and a black crust of about 1 cm, located on the trunk. This appearance corresponds to the dense acantholytic areas and prominent dyskeratotic cells illustrated in panel (F). (D) Irregular acanthosis and orthohyperkeratosis in the epidermis, with a hyperkeratotic column extending from the hair follicle infundibulum to the surface (H&E, x40). (E) Focal and minimal acantholysis in the hair follicle epithelium, sparse dyskeratotic cells, and keratinocytes with prominent eosinophilic cytoplasm (H&E x200). (F) Sparse dyskeratotic cells and eosinophilic keratinocytes in the acantholytic area (H&E x400; blue arrow: dyskeratotic cells; green arrow: acantholysis).

observed in one case. Confluent acantholytic dyskeratosis was observed in 62.5% of cases, suprabasal cleft formation in 50%, corps ronds in 25%, and grain in 50%. Dyskeratotic cells were consistently localized to the spinous layer, and superficial lymphocytic infiltration was present in 87.5% of cases. Acantholysis was identified in the suprabasal/epidermal lower layers in four cases and the lower epidermal layers in the remaining four.

Conclusion

ADA is a rare but distinct entity that can clinically mimic malignancies. Limited case series in the literature highlight its importance in differential diagnosis. The lesion size and locations observed in this series are consistent with previous reports, with a predominance on the trunk and average diameter below 1 cm [2,3].

Histopathologically, ADA is characterized by confluent acantholytic dyskeratosis and suprabasal cleft formation—observed in 62.5% and 50% of cases, respectively—which are crucial for differentiation from other dermatoses. The absence of nuclear atypia is a key distinguishing feature from SCC and actinic keratosis [2,3].

Although the etiopathogenesis of ADA remains unclear, prior studies have suggested a potential link to immunosuppression [4-6]. Further studies are needed to elucidate the role of immunological factors in ADA.

Complete surgical excision remains the most effective diagnostic and therapeutic method, as confirmed by this series [3].

ADA should be recognized as a rare but clinically relevant entity that can be managed effectively when correctly diagnosed. Our case series contributes valuable cumulative data and reinforces the importance of complete excision and histological confirmation in ambiguous solitary lesions. Further studies are warranted to better define its etiopathogenesis and guide diagnostic criteria.

Statement of Ethics: The study was conducted ethically in accordance with the World Medical Association Declaration of Helsinki. Ethics Committee approval was not required for this study by national guidelines.

Informed Consent: Written informed consent was obtained from all patients for the publication of their medical details and accompanying clinical images.

References

1. Omulecki A, Lesiak A, Narbutt J, Woźniacka A, Piekarski J, Biernat W. Plaque form of warty dyskeratoma - acantholytic dyskeratotic acanthoma. *J Cutan Pathol*. Jun 2007;34(6):494-6. doi:10.1111/j.1600-0560.2006.00642.x. PMID: 17518779.
2. Ko CJ, Barr RJ, Subtil A, McNiff JM. Acantholytic dyskeratotic acanthoma: a variant of a benign keratosis. *J Cutan Pathol*. Mar 2008;35(3):298-301. doi:10.1111/j.1600-0560.2007.00799.x. PMID: 18251744.
3. Goldenberg A, Lee RA, Cohen PR. Acantholytic dyskeratotic acanthoma: case report and review of the literature. *Dermatol Pract Concept*. Jul 2014;4(3):25-30. doi:10.5826/dpc.0403a03. PMID: 25126453.
4. Bürgler C, Schlapbach C, Feldmeyer L, Haneke E. Multiple acantholytic dyskeratotic acanthomas in an organ transplant recipient. *JAAD Case Rep*. Aug 2018;4(7):695-697. doi:10.1016/j.jdcr.2018.04.009. PMID: 30128341.
5. Kanitakis J, Gouillon L, Jullien D, Ducroux E. Multiple acantholytic dyskeratotic acanthomas in a liver-transplant recipient. *Dermatol Online J*. Apr 15 2019;25(4)PMID: 31046909.
6. Nair NG, Athira BM. Acantholytic dyskeratotic acanthoma: A rare clinicopathological entity – A case report and review of literature. *Journal of Skin and Sexually Transmitted Diseases*. 2020;2(2):115-8. DOI: 10.25259/JSSTD_20_2020