

Confluent and Reticulated Papillomatosis of Gougerot and Carteaud: Two Cases with a Comprehensive Literature Review

Boujguenna I^{1*}, Elaattoul N², Sakkah A³, Boujguenna H⁴, Malki S⁵, Abdouh S⁶, Haoussani N⁷,
Boukis F⁸

¹Guelmim Faculty of Medicine and Pharmacy, Ibn Zohr Agadir University Guelmim, Morocco

²Dermatology Department, Essamara Provincial Hospital Center, Essamara, Morocco

³Dermatology Department, Guelmim Military Hospital, Moulay El Hassan. Guelmim, Morocco

⁴Private University of Marrakesh, Marrakesh, Morocco

⁵Mohammed VI Polytechnic University, Benguerir, Morocco

⁶Private Practice Physician, Marrakesh, Morocco

⁷Faculty of Medicine and Pharmacy of Rabat, University Mohammed V, Souissi, Rabat, Morocco

⁸Al AMAL Pathological Anatomy Laboratory, Guelmim-Morocco

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***Corresponding author:** Boujguenna I, Guelmim Faculty of Medicine and Pharmacy, Ibn Zohr Agadir University Guelmim, Morocco

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ABSTRACT

Confluent and reticulated papillomatosis (CARP) of Gougerot and Carteaud is a rare chronic dermatosis characterized by relapsing and remitting episodes, predominantly affecting young individuals. We report two cases of CARP in young Moroccan female patients. The etiology of CARP remains unclear, with a potentially multifactorial pathogenesis, as it occurs in both healthy individuals and patients with obesity, insulin resistance, and/or polycystic ovary syndrome (PCOS). Various therapeutic options have been successfully employed for CARP management; however, minocycline or azithromycin are generally considered first-line treatments.

Keywords: Confluent and reticulated papillomatosis of Gougerot and Carteaud; Dermatopathology; Treatment

INTRODUCTION

Confluent and reticulated papillomatosis (CARP) of Gougerot and Carteaud is a rare chronic disorder characterized by episodes of exacerbation and remission, primarily affecting young individuals. It manifests as asymptomatic, scaly, hyperpigmented papules and plaques that are reticulated at the periphery and confluent at the center. The reported sex predominance varies across studies, with some indicating a male predominance and others a female predominance.

Treatment options for CARP include both topical and systemic therapies. Systemic treatments include minocycline, doxycycline, antifungals, retinoids (isotretinoin, acitretin), oral contraceptives, and/or phototherapy.

Topical treatments involve lactic acid, selenium sulfide shampoo, antifungals, mupirocin, retinoids, salicylic acid, urea, tacrolimus, and vitamin D analogs.

CASE REPORTS

Case 1

A 28-year-old female patient with no significant medical history presented with small brownish hyperkeratotic papules. The lesions initially appeared in the intermammary and interscapular regions, progressively expanding centrifugally to other anatomical sites with a reticulated pattern over several years.

Histopathological examination revealed an acanthotic, sometimes papillomatous epidermis with an anastomosing pattern. The epidermis was covered with orthokeratotic hyperkeratosis, occasionally forming superficial plugs. Basal layer hyperpigmentation was noted. The dermis showed fibrosis with a mononuclear inflammatory infiltrate. No evidence of vasculitis or pathogens was found with periodic acid-Schiff (PAS) staining.

The patient was treated with doxycycline at a dosage of 100 mg per day for three months. The treatment resulted in a remarkable improvement, with complete resolution of all skin lesions. No adverse effects were reported.

Case 2

A 26-year-old female patient with no relevant medical history presented with a stable, grossly reticulated pigmented plaque on the anterior thoracic region, persisting for 16 years. Clinical examination confirmed the diagnosis.

Histopathological analysis demonstrated an acanthotic, sometimes papillomatous epidermis with an anastomosing pattern (Figure 1). Orthokeratotic hyperkeratosis (Figure 2), occasionally forming superficial plugs, was observed. Basal layer hyperpigmentation was present. The dermis exhibited fibrosis with a mononuclear inflammatory infiltrate. PAS staining revealed no evidence of vasculitis or infectious agents.

Doxycycline was administered at 100 mg per day for three months. The patient showed a dramatic improvement, with complete resolution of skin lesions. No adverse effects were reported.

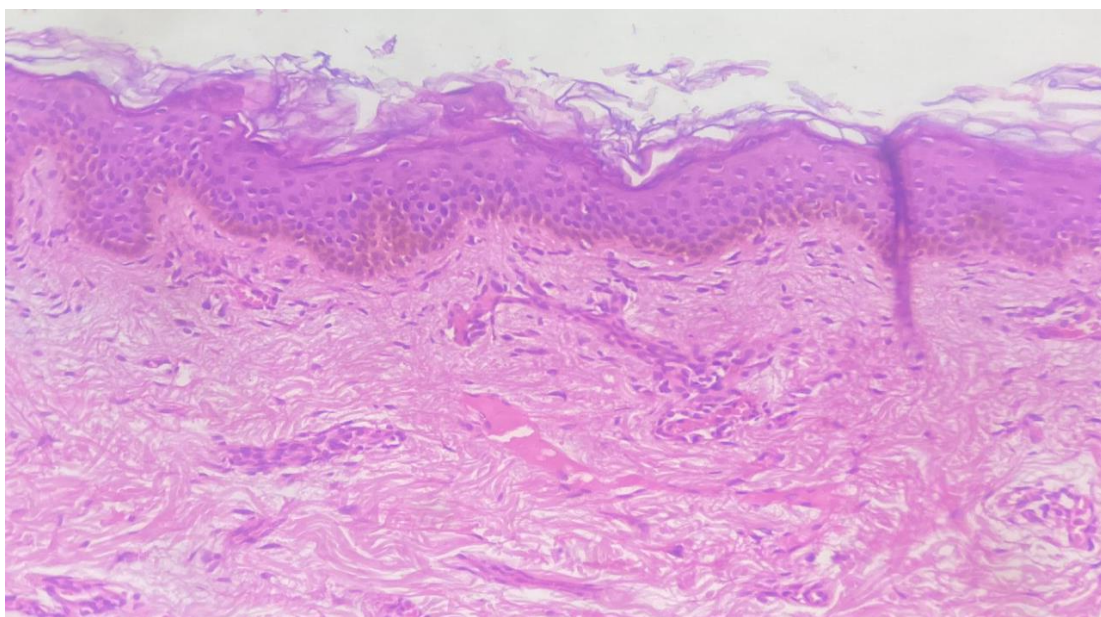


Figure 1: Acanthotic epidermis with basal pigmentation (H&E ×25).

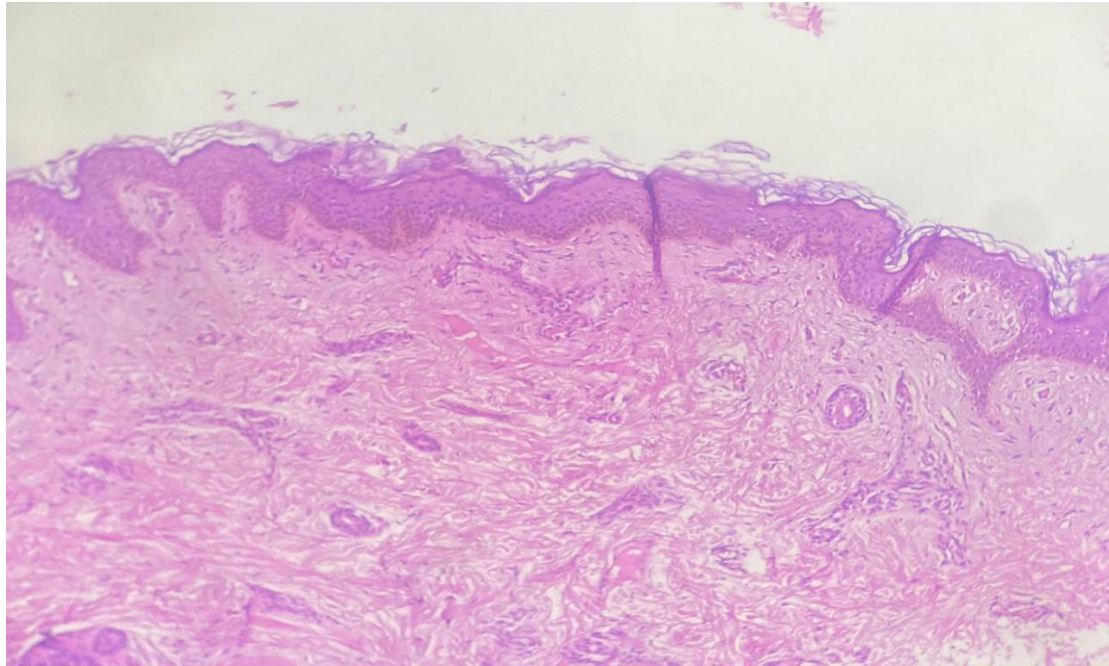


Figure 2: Orthokeratotic hyperkeratosis (H&E ×25).

DISCUSSION

CARP of Gougerot and Carteaud is a rare chronic condition characterized by relapsing and remitting episodes, primarily affecting young individuals [1-16]. First described in 1927 [17,18], we provide a comprehensive review of all reported CARP cases in the literature (Table 1).

Table 1: Reported cases of confluent and reticulated papillomatosis of Gougerot and Carteaud in the literature (2010-2025).

Cases	Year	Country	Age	Gender	Site	Clinical presentation	Treatment	Evolution
1	2010	France	56	F	Cheeks	Brown hyperkeratotic dermatitis		
2	2010		15	M			13-cis-retinoic acid	Has remained in remission
3	2012	USA	36	F	Chest, abdomen, and back	scaling plaques that were hypopigmented in a reticulated pattern	Minocycline, 100 mg/d, for 3 months and then tapered to every other day for 2 months	The patient remained free of lesions at 3 months of follow-up
			15	M	trunk	Hypopigmented papules that coalesced into large plaques	Minocycline, 100 mg, twice daily. After 3 months of treatment, the patient reported minimal response to minocycline. Daily application of tazarotene cream, 0.05%, was added as adjuvant therapy, and the patient continued with both medications for another 2 months	The patient reported vast improvement
			17	F	Chest, shoulders, and upper back	Multiple, slightly scaly, hypopigmented macules and	Minocycline, 100 mg/d. After 2 months of therapy, the lesions improved; the	The patient remained free of rash while not receiving

						papules on her neck	minocycline dosage was decreased to 100 mg every other day for 1 month The minocycline dosage was changed to 50 mg/d and adjuvant therapy with topical tazarotene cream, 0.1%, daily was added, which the patient used for 2 weeks	any therapy at the 6-month follow-up
			23	F	Chest, trunk	Hypopigmented macules that coalesced into patches	Treatment was initiated with minocycline, 100 mg, twice daily and ammonium lactate cream, 12%, twice daily. After 6 weeks of oral and topical therapy, the patient's lesions resolved. Four months later, the patient returned with a recurrence of her lesions. She was again prescribed minocycline, 100 mg, twice daily for 2 months. Two years later, she again returned with a recurrence, stating that her lesions had been cleared with prior therapy	She resumed using minocycline at a dose of 100 mg/d. She was again lost to follow-up
4	2013	Taiwan	2 patients			Scaly, dull, brownish, confluent and reticulate macules and patches	Oral minocycline and topical tazarotene	Both patients showed clearance of CRP lesions at 12- and 8-month follow-up, respectively
5	2014	turkey		Two brothers				
6	2014	Nrazil	36	M	Trunk, back	Desquamative and pruritic hypertrophic lesions	Weight loss	The patient returned after 45 days presenting a significant reduction in the number of lesions
7	2016	Cote d'ivoire	38	M	Lesions began on the interscapular area to extend to the entire chest region and upper back	Flat papular lesions 1–5 mm in diameter, grayish pigmented color, and verrucose surface	Minocycline at a dose of 100 mg/day resulted in complete cure of the patient in two weeks	No recurrence after six months of regress
			29	M	Lesions sat in the pectoral region and upper back	Flat papular lesions and pigmented slightly squamous surface	Minocycline at a dose of 100 mg/day. This therapy resulted in complete cure of the patient in 15 days	No recurrence was noted after nine months of regress
8	2017	Morocco	19	F	Neck, intermammary regions, epigastrium as well as the roots of the two upper limbs	Keratotic papules evolving for 3 years, yellowish brown in color, of variable size	Cyclines was started at a dosage of 200 mg per day for 3 months.	spectacular improvement with total disappearance of all skin lesions

9	2017	Colombia	24	F	Neck, back, intermammary regions	Linear brown plates, reticulated, with a "cigarette paper"	Minocycline 100mg per day for 1month	
			23	F	Neck, fold, intermammary regions	Linear brown plates, reticulated, with a "cigarette paper"	Minocycline 200mg per day for 2months	Total disappearance of all skin lesions
			21	M	Back, region lumbar, thorax former	Linear and atrophic brown plaques	Minocycline 100mg per day for 2months	Total disappearance of all skin lesions
			27	F	Back side of neck	Velvety brown plaque with papules and pseudostreaks	Minocycline 100mg per day for 2months	
			29	M	Neck, back and abdomen	Reticulated linear brown plates, with pseudo-streaks	Minocycline 100mg per day for 3months	
			20	M	Neck, abdomen	Linear brown plates, reticulated, with pseudo-striations	Minocycline 100mg per day for 3months	Partial improvement
			48	M	Thorax	Linear brown plates, reticulated, with a "cigarette paper"	Minocycline 100mg per day for 3months	Total disappearance of all skin lesions
			28	F	Neck, thorax	Brown-erythematous plaques linear, with pseudostriations	Minocycline 100mg per day for 6months minocycline 200 mg/d for 3 months Isotretinoin 40 mg/d for 9 months	Improvement with recurrence
			26	M	Thorax	Reticulated brown plates with linear atrophic zones	Minocycline 100mg per day for 2months	Total disappearance of all skin lesions
			17	M	Thorax	Confluent brown macules and linear	Minocycline 100mg per day for 2months	Improvement with recurrence
			41	F	Neck, back, lumbar region	Brown-erythematous plaques reticulated, with a "paper" appearance "cigarette" and fine peeling	Minocycline 100mg per day for 2months	Partial improvement
			21	M	Back, neck	Brown-erythematous plaques with rough surface and pseudostriations	Minocycline 100mg per day for 1month	Total disappearance of all skin lesions
			15	F	Region intermammary and supraclavicular	Linear euehromic plates reticulated, with atrophic zones and peeling	Minocycline 100mg per day for 2months	Total disappearance of all skin lesions
			41	F	Fold intermammary	Linear brown plates of shiny surface	Minocycline 100mg per day for 2months	Partial improvement
			17	M	Fold intermammary	Brown plates made up of papules and linear pseudo-streaks	Desonide 0.05% emulsion	

			15	M	Thorax	Reticulated brown patches with linear pseudo-striations	Minocycline 100mg per day for 2months	improvement with recurrence
			17	M	Abdomen	Confluent reticulated patches with "paper" appearance cigarette"	Minocycline 100mg per day for 2months	
			17	M	Back, thorax	Reticulated brown plates with linear pseudostreaks and peeling	Minocycline 100mg per day for 2months	Total improvement
			43	F	Fold intermammary	Reticulated brown plates, shiny, with pseudostreaks linear	Minocycline 100mg per day for 2months	Partial improvement
10	2022	tunisia	30	M	Trunk	Non-pruritic hyperpigmented skin lesions	Doxycycline 100 mg twice daily with	Complete remission after 4 weeks No recurrence was noted within 2 months of follow-up
11	2024	malaysia	18	F	Neck, axillary regions, abdomen, back, trunk, knee	Brownish papules and plaques	Oral doxycycline (100 mg twice daily), topical 0.05%tretinoincream nightly	Total improvement

The suggested etiological factors include genetic predisposition and endocrine disturbances, particularly insulin resistance, which may be explained by the pro-mitotic and anti-apoptotic effects of hyperinsulinemia. Obesity has been implicated in CARP due to its association with metabolic disturbances and insulin resistance. Additional proposed causes include bacterial or fungal infections, particularly *Malassezia furfur*, UV radiation, and a variant of cutaneous amyloidosis. Sebaceous secretion has also been considered a contributing factor, given CARP's occurrence in adolescents and its predilection for seborrheic areas. While CARP is mostly asymptomatic, pruritus may occur in some cases [5].

In 2006, Davis et al. proposed five diagnostic criteria for CARP:

1. Presence of a rash with peripheral reticulation,
2. Involvement of the upper trunk and neck,
3. Negative fungal staining,
4. Lack of response to antifungal treatment, and
5. Positive response to tetracyclines [19].

Both of our patients fulfilled all five diagnostic criteria.

Histopathologically, CARP is characterized by club-shaped epidermal ridges with basal pigmentation. The first-line treatment remains oral minocycline at 50-100 mg twice daily [19]. Recent reports on the efficacy of macrolides suggest that these antibiotics could become the preferred treatment option for CARP [20].

Furthermore, oral contraceptives containing progestins have been reported as an effective treatment in CARP patients with PCOS [21]. More recently, a case of CARP was observed to resolve immediately following bariatric surgery, further supporting the role of metabolic factors in its pathogenesis.

CARP is a rare disorder with an unclear etiology, likely involving multiple contributing factors. It occurs in both healthy individuals and patients with obesity, insulin resistance, and/or PCOS. Several treatment options exist, with minocycline or azithromycin generally being the preferred first-line therapies.

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