White Fibrous Papulosis of the Chest and Back: A Case Report

Suthasanee Prasertsook MD*, Pichaya Limphoka MD*, Penvadee Pattanaprichakul MD*,.**

**Department of Dermatology, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand*
***Department of Pathology, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand*

ABSTARCT:
White fibrous papulosis (WFP) is a rare, benign dermatologic condition within the spectrum of fibroelastolytic papulosis of the neck. It typically presents as asymptomatic, pale to skin-colored, firm, non-follicular papules, most commonly on the neck of elderly individuals. We report a 39-year-old Thai woman with a four-year history of slowly progressive, monomorphic, skin-colored papules on the upper back and chest with few papules on each side of the neck. Histopathology showed thickened collagen bundles with sparse perivascular lymphoid infiltrates in the dermis, and elastin staining revealed a slight reduction of elastic fibers in the upper reticular dermis. Correlating clinical and histological findings, a diagnosis of WFP was established, with the truncal involvement representing an uncommon presentation of this condition.

Key words: White fibrous papulosis, fibroelastolytic papulosis of the neck, pseudoxanthoma elasticum–like papillary dermal elastolysis

Introduction

White fibrous papulosis (WFP) represents a rare and often underrecognized dermatologic condition. First described in Japan, it is now recognized as part of the spectrum of fibroelastolytic papulosis of the neck (FEPN), which also includes pseudoxanthoma elasticum-like papillary dermal elastolysis (PXE-PDE). These disorders are characterized by acquired alterations in dermal connective tissue, resulting in discrete papular eruptions and changes in elastic fibers[1,2]. WFP commonly manifests as multiple, firm, skin-colored papules, typically 2-3 mm in diameter, most frequently affecting the neck of middle-aged to elderly women. In this report, we describe a case of WFP with unusual truncal involvement in a middle-aged Asian woman, highlighting a less commonly observed presentation of this spectrum disorder.

Case presentation

A 39-year-old healthy Thai woman presented with asymptomatic papules that had gradually increased in number over 4 years. Multiple discrete, non-follicular, skin-colored to whitish, firm papules were observed, distributed symmetrically on the chest and upper back, with only a few lesions on each side of the neck (Figure 1). She had no history of prolonged sun exposure, and denied history of trauma, rash, inflammation, previous treatment for the lesions, and other systemic symptoms. No family members were affected by the similar clinical. The rest of her physical examination was otherwise unremarkable.

Corresponding author: Penvadee Pattanaprichakul MD, email: penvadee.pat@gmail.com

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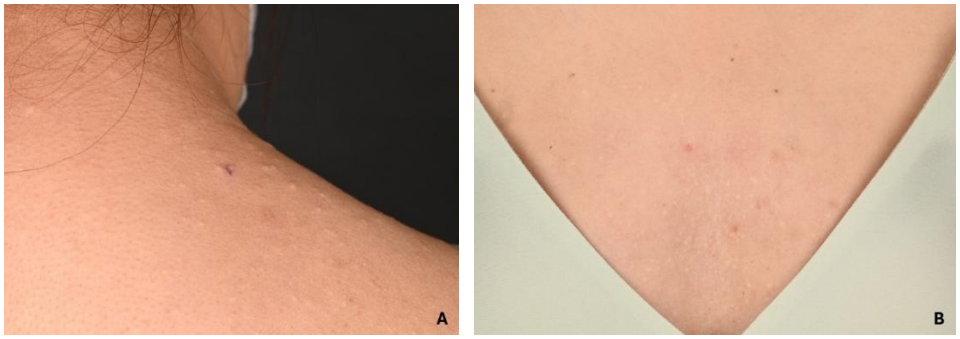

Figure 1 Multiple discrete, non-follicular, skin-colored to whitish, firm papules symmetrically distributed on the chest (A) and upper back (B)

Clinical suspicion included WFP, FEPN, PXE-PDE, and papular scar, prompting a 4-mm punch biopsy of a representative papule on the back. Microscopic examination revealed normal overlying epidermis, with aggregated dense collagen bundles and sparse perivascular lymphoid infiltration within the upper reticular dermis. Verhoeff-van Gieson stain demonstrated slight reduction of elastic fibers within the upper reticular dermis (Figure 2). Based on clinicopathological findings, a diagnosis of WFP was established. The patient was counseled regarding her condition, including the potential risks and benefits of laser treatment. Due to the possibility of post-inflammatory hyperpigmentation and scarring with ablative lasers, she decided not to proceed with treatment.

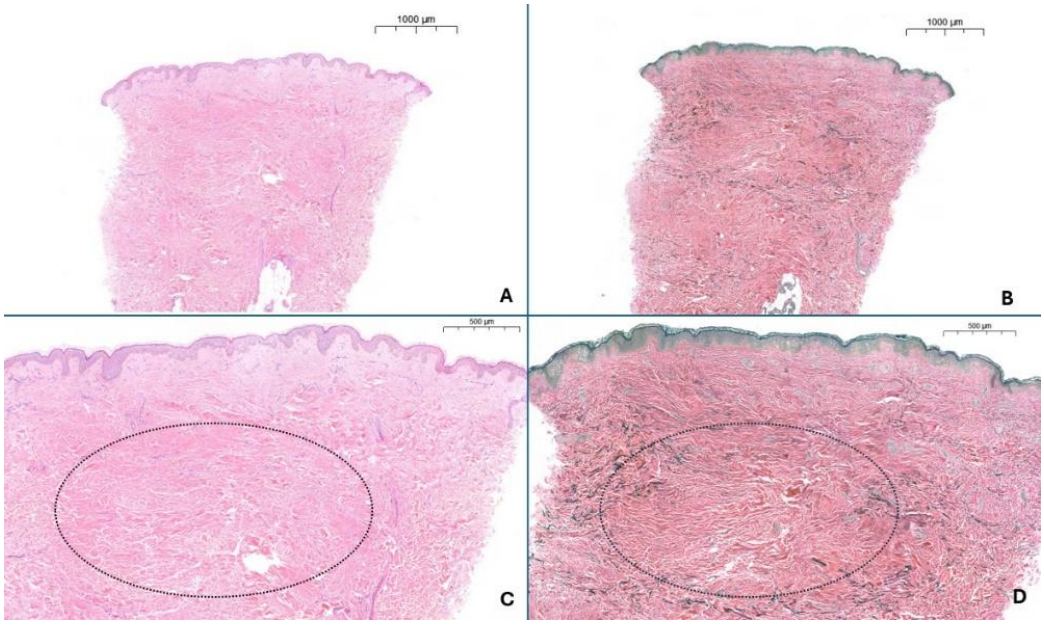

Figure 2 Histopathology shows a normal epidermis with dense, aggregated collagen bundles (circle sign) and sparse perivascular lymphoid infiltrates in the upper reticular dermis (A, C; H&E X40 and X200, respectively). Verhoeff–Van Gieson staining demonstrates a slight reduction of elastic fibers in the upper reticular dermis (B, D; VVG X40 and X200, respectively)

Table 1 Comparative table of papular conditions in the fibroelastolytic spectrum

Condition	Clinical Presentation	Age of onset	Pathogenesis	Key Histology	Verhoeff–Van Gieson staining
White fibrous papulosis	Firm whitish papules, usually neck; rare chest/back	Middle-aged to elderly (40–70 yrs)	Fibrosis, predominant degenerative change (aging ± UV)	Dermal fibrosis with circumscribed areas of thickened collagen bundles ; slight elastic fiber loss	Variable loss or fragmentation of elastic fibers in the papillary and mid-dermis
Pseudoxanthoma elasticum-like papillary dermal elastolysis	Yellowish cobblestone papules, flexural areas (neck, axillae, antecubital)	Elderly women (50–70 yrs)	Elastolysis, predominant aging/photoaging	Marked loss of papillary dermal elastic fibers, without fibrosis	Absence or significant reduction of elastic fibers in the papillary dermis
Papular Scar	Firm papules at prior acne/trauma sites; face, chest, back	Younger adults	Post-inflammatory fibrosis	Dense dermal collagen with loss of elastic fibers, replacing normal structure in the dermis	Patchy loss and fragmentation of elastic fibers

Discussion

White fibrous papulosis of the neck (WFPN) was first described in 1983 by Shimizu et al.[1] Subsequently, in 1997, Balus et al. proposed the term “fibroelastolytic papulosis of the neck” to encompass these lesions, recognizing the clinical and histopathological overlap between WFPN and related entities. Having been reported across different ethnic groups including White, Black, and Asian populations, with a predominance observed among middle-aged women[2], this condition is considered to reflect a manifestation of skin senescence, characterized by degenerative alterations in dermal connective tissue[3].

The etiology of this condition remains incompletely understood; however, intrinsic skin photoaging and environmental factors, including ultraviolet exposure, are thought to contribute to its pathogenesis. It has been suggested that fibroblasts respond to elastic fiber loss by initiating subpapillary elastogenesis and activating cellular mechanisms, a process that may give rise to the distinctive white papular lesions observed clinically[4].

The differential diagnoses in the present case included various forms of dermal elastolysis such as WFP, FEPN, PXE-PDE, as well as papular scar, dermal connective tissue tumor, and dermal deposition disorders including mucinosis, scleromyxedema or possible amyloidosis. Although WFP, PXE-PDE, and FEPN belong to the same spectrum, they were considered separately because of their differing histopathological features and clinical patterns: WFP is fibrosis-dominant, PXE-PDE shows marked elastolysis with yellowish coalescent papules, and FEPN represents overlapping cases. Papular scars were also included in the differential diagnosis, as they may mimic papular eruptions, particularly in the follicular areas of the neck, upper chest and back following acne lesions. WFP usually affects the neck with firm whitish papules, whereas PXE-PDE more often presents with yellowish cobblestone-like plaques on flexural areas[1,2,6,7]. Truncal involvement in WFP is exceedingly uncommon, with only a few isolated cases reported in the literature[8,10]. To date, there has been only one previously documented case in Thailand[5], making this presentation particularly noteworthy.

WFP has not been linked to any comorbid conditions[6]. The diagnosis is established through skin biopsy, which provides valuable histological insights, further aiding in the diagnosis and confirmation of the clinical impression. Histologically, it is characterized by slight, focal increase and thickening of irregularly arranged collagen bundles within the reticular and papillary dermis, accompanied by sparse superficial perivascular inflammatory infiltrates and elastic fibers that may appear normal or reduced, as observed in our patient[4,7]. In contrast, PXE-PDE is defined by papillary dermal elastolysis without evidence of fibrosis[8].

To date, no treatment has been established to achieve remission due to unclear etiology. Despite its benign and typically asymptomatic nature, it may present a significant cosmetic concern for affected patients. Various therapeutic approaches have been attempted to treat WFP with variable success. Topical agents, including tretinoin and antioxidants intended to counteract free-radical-induced skin aging, have generally yielded poor therapeutic outcomes. Patients are typically advised to avoid excessive sun exposure, particularly UVA, as part of management[6,8]. For well-circumscribed lesions, surgical approaches such as excision or laser therapy, including non-ablative fractional 1550-nm ytterbium/erbium laser and CO_2 laser, appear to offer the most favorable treatment outcomes[5,6]. Table 1 summarizes the key clinical, pathological, and management features of papular conditions within the fibroelastolytic spectrum, along with papular scars as an important mimic.

In summary, WFP is a rare benign condition, usually confined to the neck of older individuals. We describe an unusual case with truncal involvement in a middle-aged Thai woman, extending the clinical spectrum of this entity. WFP and PXE-PDE are now considered part of a spectrum known as FEPN, with WFP representing the fibrosis-dominant form and PXE-PDE demonstrating the elastolysis-dominant form. Recognizing this spectrum helps to avoid misdiagnosis with other papular dermatoses and reinforces the benign nature of the disease, for which treatment is mainly for cosmetic concern.

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