

## Trauma-induced Focal Nodular Mucinoses: A Rare Entity

### Abstract

Cutaneous mucinoses refer to disorders with abnormal accumulation of mucin in the skin. Mucin is an amorphous material that is a part of the extracellular matrix in dermis. Cutaneous mucinoses could be primary or secondary. The latter is associated with systemic disorders such as autoimmune diseases, diabetes mellitus, paraproteinemia, or altered thyroid function. Here, we report an adult female patient with trauma-induced cutaneous focal nodular mucinoses on left-sided scapular region. Histology showed replacement of collagen bundles by mucinous deposits in superficial and mid-dermis. Mucinous substance was present in peri-ecrine location on Alcian blue staining.

**Keywords:** Mucin, mucinoses, solitary nodule

### Introduction

Cutaneous focal nodular mucinosis (CFNM) is a localized form of cutaneous dermal mucinosis clinically presenting as an asymptomatic skin-colored papule or nodule that occurs anywhere on the body. The etiopathogenesis of CFM is unclear but is thought to represent a reactive lesion.<sup>[1]</sup>

### Case Report

A 30-year-old female presented to us with a history of skin-colored lesions over the upper back of 3-year duration. There was a history of blunt trauma at the site 6 months prior to the onset of lesions. There were no systemic complaints. On examination, a solitary erythematous to pigmented plaque of size 4 cm in length and 2 cm in width (4 × 2) cm, ovoid shaped, firm in consistency, irregular surface was present on the right scapular region with a firm rubbery nodule surmounted over the plaque [Figure 1]. The surrounding skin showed follicular prominence. Patient complained of recurring mucinous discharge from the lesion for the last 2 months. Rest of the cutaneous and systemic examination and blood biochemistry were within normal limits. Thyroid function tests showed no abnormality. Antinuclear antibodies and human immunodeficiency virus antibodies were negative. Histopathological examination of biopsy specimen showed normal

epidermis with separation and replacement of collagen bundles by mucinous deposits in superficial and mid-dermis (hematoxylin and eosin, ×40) [Figure 2]. There was mild inflammatory infiltrate. Mucinous substance was present in the peri-ecrine location on Alcian blue staining (×200) [Figure 3].

Based on the above findings, a diagnosis of focal nodular mucinoses was made and the patient was referred to the department of surgery for excision.

### Discussion

CFM was first described by Johnson and Helwig in 1966 as an asymptomatic, elevated, whitish papule, plaque, or nodule that is usually solitary and present on the face, trunk, or extremities.<sup>[1]</sup> CFM has been reported previously in various morphological forms such as fibroma, polyp, plaque, and nodule.<sup>[2,3]</sup> In our case, it started as a papule, and within 3 months progressed to form a discharging nodule. CFM is usually not associated with systemic manifestations.

In our case, trauma was the inciting factor which led to CFM. The cause of CFM is unknown but is thought to be a reactive lesion arising as a result of the dysfunction of fibroblasts in a circumscribed area.<sup>[4]</sup> Several recent studies have examined the relationship of CD44 receptor expression to dermal hyaluronate mucin accumulation. However, multiple focal cutaneous

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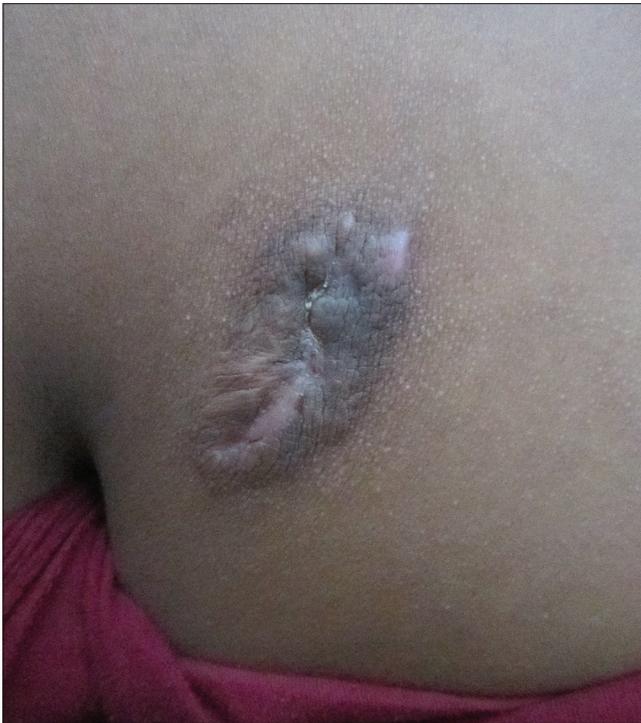


Figure 1: Solitary, ovoid, soft to firm plaque present on left scapular region surrounded by follicular prominences

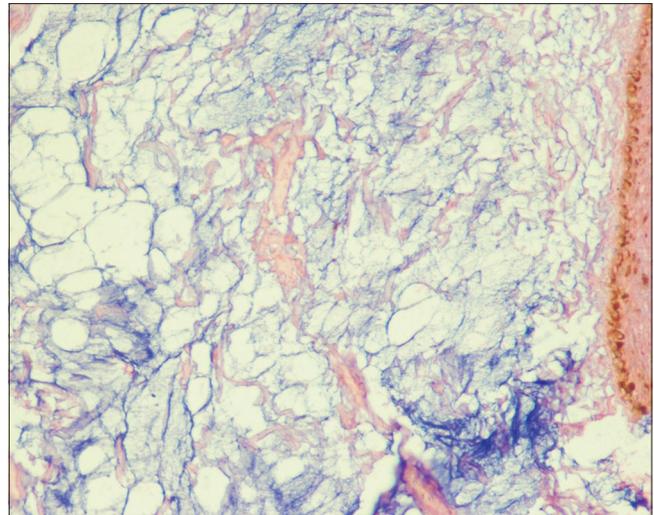


Figure 2: Attenuated collagen bundles in dermis widely separated by pools of acellular mucin. (H and E, x40)



Figure 3: Dermal mucin highlighted (Alcian Blue, x200)

mucinoses have been seen as a side effect of anti-TNF- $\alpha$  therapy in a psoriatic patient.<sup>[5]</sup> Furthermore, trauma as an inciting factor has been seen in two cases till date which later progressed to CFM.<sup>[4]</sup>

Histology is essential for the diagnosis and shows replacement of collagen bundles by mucinous deposits in superficial and mid-dermis. The epidermis may be normal or hyperplastic. Systemic investigations such as ANA and thyroid function tests should be done to rule out other diseases with dermal mucinoses such as scleredema, scleremyxedema, and granuloma annulare.

Clinical differential diagnosis considered in our case was scrofuloderma, however, on investigation, chest X-ray was normal and Mantoux test was negative which helped us in ruling out scrofuloderma. Histopathological differential diagnosis of CFM includes scar sarcoidosis and benign and malignant neoplasms characterized by mucinous tumor stroma with angiomyxoma, nerve sheath myxoma, and myxofibrosarcoma.<sup>[6-8]</sup>

Intralesional steroid injections could be useful by acting on cytokines pathway. Surgical excision, which is the treatment of choice for CFM, was considered in our case.

In summary, we reported a case of trauma-induced CFM arising on scapular skin in an adult female. Our case depicts an uncommon condition which is induced by trauma and required histopathology for confirmation of diagnosis. Trauma could be an inciting factor in our patient and could have a role in the pathogenesis of disease as it could lead to overproduction of hyaluronic acid by fibroblasts.

#### *Declaration of patient consent*

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

#### *Conflicts of interest*

There are no conflicts of interest.

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