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Case Report

Cutaneous Small Vessel Vasculitis: A Rare Manifestation of Protein Supplement Nutritional Powder

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Abstract

I am Describing a rare case of purpuric rash that developed in a Diabetic patient who was advised Nutritional Protein powder for her hypoalbuminemia. There was no history of any new drug intake, joint pains, nasal ulcers or hematuria. Histopathology revealed the diagnosis cutaneous small vessel vasculitis. The protein powder was stopped and as the lesions did not regress significantly patient was started steroids with complete resolution of lesions in 4 weeks.

Key words: Leukocytoclastic Vasculitis, Purpuric rash, fibrinoid necrosis

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A 50-year-old patients was taking basal bolus insulin regime along with pioglitazone and metformin, with well controlled blood sugar levels for past two years and an HBa1c of 7 presented in Opd with complain of bilateral pedal edema for past 07 days. Her BSR was 200 and blood pressure was 120/80. Considering it a side effect of pioglitazone it was stopped and furosemide and spironolactone combination was advised to decrease pedal edema. Initially edema decreased but occurred again after stopping diuretic.

Further investigations were done for the cause of pedal edema and her Urine R/E did not reveal any proteinuria, her Renal functions tests, echocardiography and ultrasound abdomen was normal. Her liver function tests were normal except for mildly low serum albumin levels (serum Albumin 3.2). Her dietary history revealed poor intake of meat and eggs. Therefore, patient was asked to increase protein intake and was also prescribed nutritional supplement rich in protein (beneprotein). One day after starting the protein powder she developed palpable purpura involving the whole body especially more crops on the lower limbs. She did not give any history of joint pains, jaundice, oral /nasal ulcers, cough, hemoptysis, hematuria, fever or weight loss.

Considering it as an allergic reaction to protein powder, it was stopped and skin biopsy was done for histopathology. Her ESR levels was reported to be 98. A provisional diagnosis of vasculitic rash was made and her investigations were sent to rule out systemic small vessel vasculitis. Her RA factor, ANA, Anti DsDNA, C and P ANCA, IGA levels, complement levels, cryoglobulin levels, Hep B and C serology, HIV antibody, Urine R/E and RFTs all were reported to be normal. Her histopathology revealed neutrophilic infiltrates along with fibrinoid necrosis making a diagnosis of Cutaneous leukocytoclastic vasculitis/Cutaneous small vessel Vasculitis. The lesions did not regress significantly after stopping of protein for a week. Therefore, patient was given oral prednisolone (0.5mg/kg) for 10 days followed by gradual taper over two weeks. Her oral hypoglycemic agents were adjusted to maintain blood sugar levels within range with steroids. Her lesions settled in 04 weeks with full recovery.

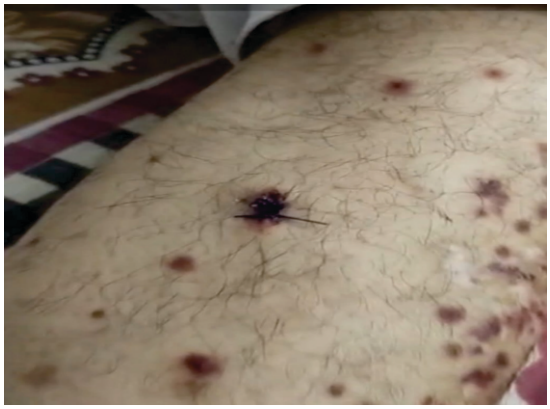
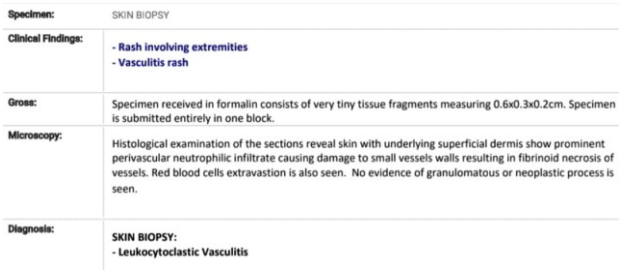


Figure 1: *Case presentation*



Specimen:	SKIN BIOPSY
Clinical Findings:	**- Rash involving extremities** **- Vasculitis rash**
Gross:	Specimen received in formalin consists of very tiny tissue fragments measuring 0.6x0.3x0.2cm. Specimen is submitted entirely in one block.
Microscopy:	Histological examination of the sections reveal skin with underlying superficial dermis show prominent perivascular neutrophilic infiltrate causing damage to small vessels walls resulting in fibrinoid necrosis of vessels. Red blood cells extravastion is also seen. No evidence of granulomatous or neoplastic process is seen.
Diagnosis:	**SKIN BIOPSY:** **- Leukocytoclastic Vasculitis**

Figure 2: *Diagnostic Criteria*

Discussion

Cutaneous small vessel vasculitis or leukocytoclastic vasculitis or hypersensitivity vasculitis names often used interchangeably, is a form of small vessel vasculitis that involves capillaries, arterioles and post capillary venules of skin and manifests in the form of skin lesions. These lesions vary and can be in the form of palpable purpura, blisters and ulcers that can be painful and itchy and sometimes get infected and can cause scarring.

In this form of vasculitis there is inflammation of small vessels that involves infiltration of neutrophils along with fibrinoid necrosis. The term leukocytoclastic vasculitis is derived from word leukocytoclastic which means breakdown of neutrophil nuclei to fragmenets.[1] As per "2012 International Chapel Hill Consensus Conference on the nomenclature for vasculitides" "single organ vasculitis" is the term that should be used be used if the symptoms are confined only to one organ and is not involving other organs.[2]

This condition can be due to a number of causes like drugs, infections, connective tissue diseases, malignancies but can be idiopathic as well. It usually resolves after stopping or treating underlying cause but recurrence can occur.[3,4,5]

In our case nutritional supplement that contains essential and non- essential amino acids derived from whey protein was the culprit. It is an unusual reaction from a protein derived from milk source. The purpose of this case report is to highlight this rare reaction with protein supplement powder that physicians should keep in mind in patients who are taking or are advised to take whey protein derived nutritional product.

Conflict of Interest: None

Funding Source: None

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