

Case report

Perifollicular purpura must not be forgotten in scurvy: case reports

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Introduction

Perifollicular purpura can be a primary sign of scurvy. Widespread ecchymosis with arthralgia is another finding in this disease. Recognition of these signs can help the physician reach a proper diagnosis and thus avoid exhaustive, unnecessary testing. Diagnosis of scurvy is mainly made by investigating the history of the condition and by physical findings [1]. The best method for confirmation of scurvy continues to be resolution of the disease with the administration of vitamin C [1,2]. Clinical manifestations of scurvy arise mainly as a result of a defect in the metabolism of collagen. This defect produces instability in tropocollagen fibrils and breakdown of connective tissue in vessel walls and perivascular areas, which leads to haemorrhage.

In the past, scurvy occurred during epidemics because of the unavailability of foods containing ascorbic acid [3,4]. These epidemics may still occur in some parts of the world, especially in international refugee camps and in populations that subsist mainly on donated cereal grains [5]. In the United States, however, only certain individuals who have a monotonous or peculiar diet or have malabsorption are at risk of scurvy [6]. Other people at risk include

alcoholics, the elderly (widower's scurvy), infants with Barlow disease 6 to 12 months after artificial feeding is begun [5,7], food faddists, patients with dyspepsia and gastric ulcers who avoid acidic foods that contain vitamin C, patients with Crohn or Whipple disease, and the mentally ill [7,8]. Here we report two patients with scurvy both of whom were on restricted diets due to their chronic gastritis and ulcerative colitis. They ate a diet without any type of fresh fruits for 2-3 years.

Cases reports

Case 1

A 29-year-old male Caucasian opium addict was referred to our dermatology clinic with disseminated perifollicular purpura associated with some large ecchymotic patches, mostly on his thighs and some on other areas. Diffuse follicular hyperkeratosis with corkscrew shape of hairs was also seen. He complained of stomach-ache for the past 3 years, for which he was taking antacids, cimetidine and bismuth salts constantly. A diet of only cooked foods and restricted fresh fruits and vegetables had been advised to him. On physical examination perifollicular purpura (diameter 2 mm) and follicular hyperkeratosis with numer-

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ous corkscrew hairs were seen on his thighs and forearms. His gums were haemorrhagic and erythematous with bleeding. Haemoglobin serum level was 13.8 g/dL with normochromic, normocytic erythrocytes. The peripheral blood smear revealed no abnormality, and platelet count, prothrombin time and partial thromboplastin time were all normal. A biopsy specimen showed no evidence of vasculitis. Treatment with ascorbic acid tablets (1000 mg/day) was prescribed and most lesions cleared within 14 days and all haemorrhagic patches resolved after 20 days.

Case 2

A 45-year-old Caucasian man who had been admitted to the rheumatology ward because of arthropathy and disseminated purpuric petechiae (perifollicular haemorrhage) and ecchymoses with woody appearance of the left leg was referred to the dermatology clinic. On examination, as well as diffuse perifollicular purpura and some large ecchymotic patches on his thigh, some buccal petechiae with gingival haemorrhage were seen that had appeared 40 days before. He had been diagnosed with ulcerative colitis 2 years before and he was using sulfasalazine constantly. He had been on a diet free of fresh fruits and vegetables for the past 2 years (when the diagnosis of ulcerative colitis was made). On physical examination, perifollicular purpura (diameter of 1–2 mm) and some follicular hyperkeratosis in combination with fractured hair in his lower limbs were observed. His gums were, inflamed, erythematous and constantly bleeding. Haemoglobin and peripheral blood smear examinations revealed no abnormality. Estimated platelet count, prothrombin time and partial thromboplastin time were normal. Oral ascorbic acid 1500 mg/day (500 mg, 3 times a day) was prescribed with a high

protein diet for both the vitamin C deficiency and the ulcerative colitis. This was continued for 3 weeks. Purpuric ecchymosis and petechiae disappeared completely after 21 days.

Discussion

Scurvy has been known since the time of Hippocrates but it was not a significant problem until the advent of long ocean voyages, when ships lost up to two-thirds of their crew as a result of the disease [2,4]. It was not until James Lind, a Scottish surgeon, conducted his study in 1753 that citrus fruits were used to prevent scurvy. With this information Captain James Cook was able to circumnavigate the world without a single case of scurvy in his crew. In 1795 the British Admiralty ordered that lime juice be a part of every sailor's diet; thus originated the term "limey" for British sailors.

The active ingredient in citrus fruit remained a mystery until 1932, when King and Waugh identified ascorbic acid [3,9]. Most animals can convert gluconate into ascorbate, but humans and guinea pigs, which provide the usual animal model for scurvy, cannot do so and therefore require exogenous vitamin C [3]. The total body pool of vitamin C is approximately 1500 mg [10,11]. Clinical symptoms of scurvy are not apparent as long as this pool remains above 350 mg. To reach such a level, vitamin C must be eliminated from the diet for 60 to 90 days. As little as 6–10 mg of vitamin C a day is sufficient to maintain a level of 350 mg. A small orange contains approximately 50 mg of vitamin C. Many common foods, however, such as bread, eggs, rice, peanuts, butter, cooked meats, and fish contain little or no vitamin C. Fresh meat contains vitamin C but it is destroyed by

cooking. Fresh fruits and vegetables are the best sources of vitamin C.

About 75% of patients with scurvy have normochromic, normocytic anaemia from blood loss into tissues, blood loss in the gastrointestinal tract and intravascular haemolysis. The differential diagnosis of scurvy includes all diseases that can cause petechiae and perifollicular haemorrhage, such as systemic disorders, platelet coagulation abnormalities, thrombophlebitis and some types of vasculitis [1,6]. Of all these conditions, scurvy is the only one that improves with administration of daily ascorbic acid [8]. Treatment of scurvy in adults consists of the administration of ascorbic acid in dosages of at least 200 mg/day [2,4,8], although 800 to 1000 mg/day for 1

week is generally recommended [5,10]. Both of our patients were treated with ascorbic acid tablets (1000 mg/day and 1500 mg/day) orally, with high protein diet, and purpuric petechiae completely disappeared in 3 weeks. Infants and children with scurvy should be treated with 150–300 mg of vitamin C per day for 1 month. Patients should also be educated about proper nutrition and given a diet that contains sufficient amounts of vitamin C [4]. Because diets deficient in vitamin C are also deficient in other nutrients, the patient should also be given a multivitamin. With proper treatment, bleeding stops within 24 hours and the perifollicular petechiae resolve within 3 weeks [11].

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