

CASE REPORT

Modern scurvy

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Abstract

Scurvy is a disease that played an important role in ancient history and used to be a notorious cause of death in sailors. Nowadays, scurvy is not a common diagnosis in the civilized world, but this case report indicates that this old-fashioned disease is not extinct at all and still exists but in a different patient category.

INTRODUCTION

Scurvy is a disease that played an important role in history and used to be the number one killer of sailors. Nowadays, scurvy is not a common diagnose in the developed world. It is still diagnosed in third-world countries because of malnutrition and in epidemic form in refugee camps. However, recently a patient in our clinic was diagnosed with scurvy.

CASE REPORT

A 35-year-old patient was seen at the emergency department of a Level 1 trauma centre with spontaneous bruising on the lower extremity. Symptoms occurred on his right leg with progression to the contralateral leg.

Initially, the patient was seen by an orthopaedic surgeon at an outpatient clinic with a painful knee without any preceding trauma. An arthroscopy was planned under suspicion of a meniscal tear. The procedure was postponed twice. At first, the arthroscopy was cancelled because the patient had the flu. The second time the orthopaedic surgeon postponed the operation because of extensive bruising on the right leg (Fig. 1). Moreover, doctors of the internal medicine and dermatology department were consulted to explore the origin of the haematomas. Given the petechiae on the lower legs, vasculitis was considered (Fig. 2) and a biopsy was performed. At the time of the current presentation at the emergency department, no results were known. Because of the progression of the haematomas to the

patients' left leg, the surgeon was consulted to rule out an active bleeding focus.

There was no previous medical history. The patient was an electrician, currently unemployed because of knee problems. Since 10 weeks, there were spots on his lower legs (Fig. 2). The haematomas on his right leg occurred after an episode of flu a month ago (Fig. 3). Ever since, he had been exhausted, and he had spent the majority of his time in bed. He also reported orthostatic complaints when waking up.

Further enquiry revealed bad teeth, with easy bleeding tendency. His dentist proposed to remove the decaying teeth. According to the patient, the bad teeth could be explained by his alleged eating disorder. Apparently, the patients' eating regimen only consisted of bread, sometimes with spread, but mostly without any additions. For this eating habit, he was seeing a psychologist.

On physical examination, we encountered a pale patient with haematomas on his upper legs, generally green/blue or yellow coloured. Laboratory tests revealed anaemia with a haemoglobin drop of 2.5 points in 2 weeks (from 8.6 to 5.7 mmol/l).

No surgical cause for the haematomas was found. Instead, the diagnosis of a severe vitamin C deficiency ('scurvy') by malnutrition due to his eating disorder was considered. After laboratory blood tests were drawn to confirm the diagnosis, vitamin C supplements were started.

After 4 weeks, the patient was seen at the outpatient clinic. The biopsy showed atypical tissues with mild inflammation, not specific for vasculitis. Vitamin C level was very low (<35 µmol/l).

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Figure 1: Small bruises on the upper legs.



Figure 2: Spots, suspect of petechiae.

The patient reported strong improvement of health. With the help of an advising dietician, he was expanding his diet. He still used the supplements. The haematomas were disappeared, and his energy level improved.

DISCUSSION

It is regrettable that the United East India Company (VOC) lost more sailors on scurvy than on the battlefield during the



Figure 3: Expansion of bruises after 2 weeks.

seventeenth century. Scurvy was one of the limiting factors for travelling long distances on ships because of the absence of fresh food, fruit and vitamins. Only dried, smoked or salted food was available. Scurvy was first described by Hippocrates [1]. Later in 1753, a surgeon of the Royal Navy described how citrus fruits enhanced the symptoms of scurvy. In 1930, it was discovered that depletion of vitamin C level was the cause [2].

Vitamin C is needed for the synthesis of collagen, which is essential for firmness of the blood vessels. In patients with scurvy, the vessels become weak, leak and abnormal bleeding. The presentation of scurvy is often malaise, fatigue, stiff joints and bruising, mostly on the upper thighs and legs. Frequently, easy bleeding of spongy gums is encountered. The next stage consists of open wounds, jaundice, fever, loss of teeth and finally death [3].

Scurvy does not occur in most animals as they can synthesize their own vitamin C in contrast with the human, for example guinea pigs and certain monkey species. Our vitamin C storage becomes depleted in 1–3 months [3]. Treatment is relatively simple with a versatile diet with citrus fruits, sweet peppers and tomatoes. Sometimes, administration of vitamin C is necessary. Ninety per cent of the vitamin C intake is provided by vegetables and fruit. The recommended daily quantity of vitamin C is 75 mg for women and 90 mg for men [4] (<http://www.who.int/en/>), but up to 40% more can be necessary in smokers and during infection [1].

Nowadays, scurvy occurs predominantly in developed countries because of malnutrition, and frequently epidemics are reported from the lesser civilized areas [2]. This present case report emphasizes that scurvy may still occur in developed countries and that patients with scurvy could be encountered by physicians of multiple medical disciplines. Scurvy should be considered in risk groups, e.g. singles, patients with eating disorder, students, elderly, alcohol abusers and patients after gastric surgery [5, 6]. Recently, in Wales (UK) in 2011, a young patient died of scurvy (<http://www.bbc.com/news/uk-wales-31039895>).

Scurvy is a diagnosis that could be missed easily. However, even in these modern timeframe, groups with a high risk of vitamin deficiencies can be discerned [5].

In our patient, the biopsy could have been avoided, and supplements could have been initiated more quickly in case of higher awareness of the signs and symptoms of vitamin C deficiency. Scurvy remains a disease with a potential fulminant course and even risk of death.

CONFLICT OF INTEREST STATEMENT

None declared.

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