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Scurvy: A Case Report

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ABSTRACT

Scurvy is a rare case found in many countries, but it is often found in refugee areas, especially in Africa. Vitamin C deficiency varies based on season and occurs more in men with age. The purpose of this research is to avoid misdiagnosis so that it can be a reference in the field of medicine to diagnose and provide management on scurvy. This prospective research was conducted with one sample of research. Observation had been carried out for two months, starting at one month after the patient was suspected with the diagnosis of scurvy. Computer Tomography (CT) Scan lumbosacral to pelvic results were normal. Laboratory test of HB result was 9.5 g/dl, in which MCV was 63.2 fL, MCH was 20.3 pg, and MCHC was 32.1 g/dl. Scurvy treatment in the first visit was 3x1 tablets vitamin C, 3x5 ml ibuprofen Syr, and physiotherapy. The results were that the patient still suffered swollen and bleeding gums, but the pain no longer existed, pale, behavioural disorders, unable to walk, and pain in both knees. After the second visit, the child got therapy of 4x50 mg vitamin C, 1x1 tablets vitamin B12, 1x150 IU vitamin E, 1x1 tablets cavit D3, and physiotherapy. After two weeks of treatment, there were no complaints of swelling, painful or bleeding gums. The child could straighten her legs, but she was still unable to walk due to the trauma of feeling great pain while walking. Special attention is required to diagnose appropriately so the doctor can minimize and prevent complications.

1. Introduction

Scurvy is a rare case found in many countries, but it is often found in refugee areas, especially in Africa.[1] The incidence rate of 5 refugee places in Somalia and Sudan, from 1985 to 1987, was 14% and 19.8% for four months and 18 months respectively.[2] The high incidence was in camp-based clinics in Eastern Ethiopia in which it reached 3.5/1000/month in November 1993 and 12.8/1000/month in January 1994. In 1994, scurvy cases were reported among Bhutanese refugees in Nepal in the age group of 10-30 years and reached 0.7/10000/day.[2] In 1994, the incidence rate was in 0.5 - 0.7/10.000/day. In October 1995, the incidence rate was 0.12/10.000/day.[2,3]

The prevalence of age, gender, and season in scurvy is 73.9% in 2668 people in North India and 45.7% in 2970 from South India.[3] Only 10.8% in the North and 25.9% in the South meet the criteria. Vitamin C deficiency varies based on season and occurs more in men with age.

Clinical symptoms of scurvy are very diverse and often occur misdiagnosis, such as Henoch Schoenlein Purpura (HSP) and acute rheumatoid arthritis fever, osteomyelitis, nonaccidental trauma or acrodynia so that the treatment in patients is inappropriate and can cause the patient's condition to worsen.[5,6] Complications of scurvy include pseudoparalysis, bleeding, skeletal muscle degeneration, cardiac hypertrophy, bonemarrow depression, osteoporosis, and adrenal atrophy.[7,8,9]

This report was created to avoid such misdiagnosis so that the treatment of the patient can be done optimally. Furthermore, it can be a reference in the field of medicine to diagnose and provide management on scurvy.

2. Case Presentation

Study methods

This prospective research was conducted with one sample of research. Observation had been carried out for two months, starting on March 6, 2019, when the patient came to the children polyclinic and was suspected with the diagnosis of scurvy. It was done when the child was 4 years, 15 days and ended when she was at the age of 4 years, 2 months, 17 days.

Patient information

A girl was taken to Pangeran Jaya Sumitra Hospital, and her condition was unable to walk for 4 months and 15 days. Initially, her both legs were painful, and she walked by dragging the foot for 10 days. The legs were difficult to be straightened, and she felt constant pain. Complaints included pain in the spine so the child could only lie down. Gums had been swollen and easily bleeding since 4 months ago. The appetite decreased, she only ate rice porridge, soy sauce, and Soto gravy. She looked pale, and there was a behavioural disorder. There was no history of high fever, trauma, cold and cough, and diarrhoea. Her weight was loss in which her weight before she was sick was 15 kg. There was a previous history with the same complaint, the child was treated for 5 days in the children's room from February 19, 2019 up to February 23, 2019.

3. Results and Discussion

At the beginning of the observation, the child still came for examination every week at the outpatient clinic of Pangeran Jaya Sumitra Hospital. There was no change in therapy. After the second visit, the child was referred to the Physical Medicine and Rehabilitation Department to train the child to walk.

Scurvy treatment that had been administered on the first visit was 3x1 tablets vitamin C, 3x5 ml ibuprofen Syr (if the child felt pain), and physiotherapy. There were no complaints regarding swollen, bleeding, and painful gums, but the child was still unable to walk, and both of her knees were still painful. After the second visit, the child got therapy of 4x50 mg vitamin C, 1x1 tablets vitamin B12, 1x150 IU vitamin E, 1x1 tablets cavit D3, and physiotherapy. After two weeks of treatment, there were no complaints of swollen, painful or bleeding gums. The child has already wanted to eat and did not become a picky eater anymore. She could straighten her legs, but she was still unable to walk due to the trauma of feeling great pain while walking. For two weeks, the child had never been coming to the polyclinic and physiotherapy due to the busyness of the parents, but she still exercised walking at home. After that, she got treatment again to physiotherapy for walking exercises. The nutritional status of the patient according to WHO, when she was hospitalized before receiving vitamin C therapy was weight: 9.7 kg and height 90 cm (weight/height -3SD). The nutritional status of the child, when given vitamin C, was weight: 14 kg and height: 90 cm (weight/height +2SD to - 2SD

Previously the patient had been treated with the same complaint, but she was treated differently. She was treated from February 19, 2019 up to February 23, 2019 with the diagnosis of paraparesis ec fracture dd mass (SOL) mid spine and anaemia. Computer Tomography (CT) Scan lumbosacral to pelvic results were normal. Laboratory test of HB was 9.5 g/dl, in which MCV was 63.2 fL, MCH was 20.3 pg, and MCHC was 32.1 g/dl. Besides, leukocyte was 5.3x103/mm3. She was diagnosed hypochromic microcytic anaemia ec ADB dd chronic infection, febris viral infection, and leukocytosis. The therapy that the patient got was 52 ml/h D5 1/4 NS Infusion, 150 mg paracetamol, 3 mg diazepam (slow bolus 30 minutes before ct scan), 4x5 ml metamizole sodium, 3x5 ml lactulac, 220 mg/8 hours tranexamic acid, NaCl compress for gums, 2x6 ml cefadroxil, and 3x1.2 mg salbutamol. The condition

of the patient when she was home was feeling pain in the back of the body, both legs, but swollen and bleeding gums began to decrease. Vital signs were within normal limits. The patient must still do Physiotherapy and would be referred to Ulin Regional General Hospital Banjarmasin.

A girl came to the hospital after her hospitalization. She was pale, unable to walk, and having bleeding, and swollen gums, with bone pain, and behavioural changes. The patient was diagnosed with vitamin C deficiency, so she had got vitamin C supplementation for two months. Based on the observations, there was a noticeable clinical improvement in this patient, so it could be concluded that this patient suffered from scurvy. Complaints of the child who was unable to walk for more than four months are the same with some cases of scurvy with complaints of leg pain, changes in the gums characterized by greyish red, swelling like mucosal sponges that usually occurs in the incisivus teeth, uncomfortable body, feeling lethargic, a decreased appetite, changes in behaviour, weight loss, diarrhoea, and tachypnea and fever.

The scurvy disease is very closely related to eating habits with the deficiency of vitamin C. The incidence of scurvy in children's age is more commonly found due to their diet and the occurrence of heating in food. The deficiency of vitamin C intake was also found in the patient.[10]

Physical examination of the patient proved that she suffered conjunctival pallor (+/+), xerostomia in oral mucosa, bleeding and swelling of the gums, and legs that are difficult to be strengthened. This is in line with the theory that states that changes in the gums, discolouration of greyish red, sponge-like swelling in the mucosa, usually occurs in the upper incisivus.11 Vitamin C deficiency also causes an increase of capillary fragility, spontaneous bleeding that occurs not only in the subperiosteal but also in the mucosa that covers the gum, and in the intestine.[11] Too low iron levels can cause iron-deficiency anaemia characterized by feeling weak, dizzy, quickly tired, and a pale-looking face.[12]

Anaemia can describe the inability of the body in utilize iron or metabolic disorders of folic acid.[13,14] The patient's level of Hb was 9.5 g/dL, with the MCV was 63.2 fL, MCH was 20.3 pg, and MCHC was 32.1 g/dL. Due to vitamin C deficiency, there were capillary fragility, spontaneous bleeding which was not only in the subperiosteal but also in the mucosa that covers the gum and in the intestine.[15] These things are caused by cell failure to precipitate collagen fibrils and intercellular cement substances, so wound healing takes several months.[16]

CT Scan result of the patient was within normal limits. There was no data regarding the patient's foot x-ray. According to the theory, subperiosteal bleeding does not appear in an x-ray in the active scurvy. During healing, the raised periosteum undergoes calcification, and the affected bone is halter-shaped or stick-shaped.[9,17]

The patient got 4x50 mg vitamin C, and this is in line with the theory that explains that vitamin C for the treatment of scurvy is 100-200 mg/day.[18] Treatments including giving 1x1 tablets Vitamin B12, 1x150 IU vitamin E and 1x1 tablets Cavit D3 had been carried out regularly for one week, and mostly the patient's clinical signs have improved, but she had not been able to walk. After two months of treatment, the patient has recovered.

Figure 1. The left and right knees were difficult to move due to the pain.

Figure 2. The left and right knees could only bend towards the body.

Figure 3. Xerostomia in the oral mucosa. Swollen gums (+) active bleeding throughout the gingival (+). There was edentulous in the upper jaw (incisivus, canines, and premolar).

Figure 4. CT Scan Lumbosacral Ap/Lateral, February 21, 2019

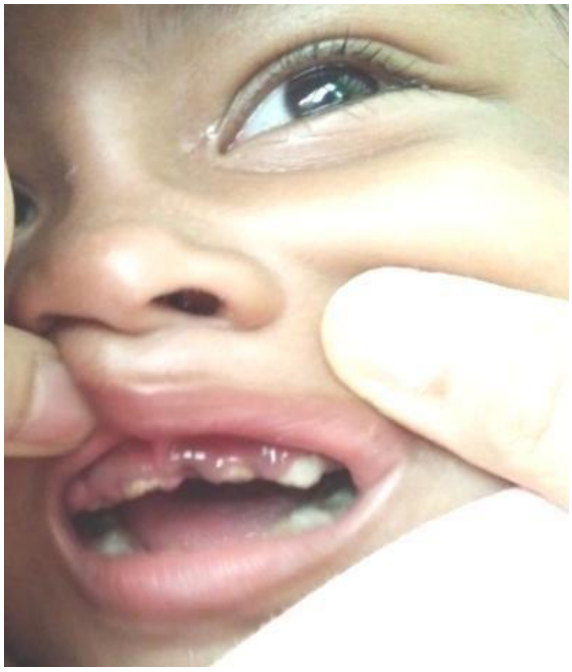

Figure 5. Swelling only in molar 1 dextra, after given treatment with vitamin C for six days.

4. Conclusion

Scurvy is a disease with the failure of the formation of osteoblast, with osteoporosis results that cause subperiosteal and submucosal bleeding. The disease is caused by vitamin C deficiency (ascorbic acid) in which it causes a lack of collagen synthesis in children. Scurvy happens more commonly in children as it relates to food consumed (does not contain enough vitamin C). The scurvy disease rarely happens in modern society, but it should be considered in undernourished people, alcoholics and in the baby with milk diet without supplementation, and people with musculoskeletal pain or bleeding.

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