The Oral Effects of Anemia

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Anemia is a pathologic condition in which the red blood cells count is lower than normal. Anemia also occurs when the red blood cells don't contain enough of the iron-rich protein hemoglobin, which gives blood its red hue. Hemoglobin helps red blood cells transport oxygen throughout the body. In presence of anemia, the body may not get an adequate supply of oxygen-rich blood. This can result the problems as serious as heart failure. It can also affect oral cavity organs. The oral cavity plays a critical role in numerous physiologic processes, including digestion, respiration, and speech. It is also unique for the presence of teeth and mucosa. The mouth is frequently involved in conditions that affect the skin, but it is also affected by many systemic diseases. Oral involvement may precede or follow the appearance of findings at other locations. This article is intended as a general overview of conditions with oral manifestations of systemic diseases – especially anemia: An increased risk for periodontitis, or gum diseases, Abnormally pale tissue in the oral cavity due to a decreased number of red blood cells, Inflammation of the tongue, called glossitis. The tongue may appear swollen, smooth, and pale, and it may feel sore and tender. The dentist must know if the patient has anemia before scheduling any procedures. Common anemias associated with oral manifestations include iron-deficiency anemia and macrocytic anemia secondary to B-12 deficiency. Hemochromatosis, a syndrome of systemic iron overload, may be caused by hereditary hemochromatosis, transfusional iron overload, chronic hemolysis, or excess dietary iron. Oral manifestations are observed in approximately 15-25% of patients. In the majority of these patients, there is a blue-gray hyperpigmentation of the oral mucosa. The most commonly affected sites are the buccal mucosa and gingiva, although a minority of patients have diffuse, homogenous pigmentation of the oral cavity. Histologic examination with Prussian blue stain reveals iron mineral deposits. Congenital erythropoietic porphyria is a rare, autosomal recessive disease caused by a mutation in the *UROS* gene, which encodes uroporphyrinogen III synthase. This enzyme defect disrupts hemebiosynthesis and leads to an accumulation of uroporphyrin in erythrocytes, which, in turn, increases their osmotic fragility and results in hemolysis. In the oral cavity, erythrodontia, a red-brown discoloration of the teeth, is pathognomonic for congenital erythropoietic porphyria. Teeth appear bright red with exposure to UV fluorescence. It has been proposed that erythrodontia is due the binding of excess porphyrin to calcium phosphate in dentin and enamel, although this condition is not present in other porphyrias. So, the body uses iron to build healthy skin, hair, nails, and teeth. Common symptoms of anemia seen in the oral cavity includes sores, reduced number and size of taste buds, burning tongue and mouth, discoloration, and oral infections. Infections that start in the throat and mouth areas can quickly spread throughout the rest of the body and cause more severe health concerns. Regular flossing prevents buildup of bacteria and can lower the risk of illness.

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