

Yellow or orange hands as presenting signs of carotenaemia

Yellow discolouration was published recently in the photo quiz in the Netherlands Journal of Medicine.¹ Almost exactly the same clinical picture showing orange hands has been published previously.² In this previous study we reported carotenaemia presenting with orange hands due to excessive intake of β -carotene-containing vitamin drinks. The differential diagnosis of yellow or orange hands should include excessive dietary intake of vitamin drinks, lycopenaemia and riboflavinaemia. However, they were not excluded. Lycopenaemia is a probable diagnosis, because history mentioned high intake of processed tomato products, containing high amounts of lycopene. In addition, diagnosis was not confirmed by resolution of symptoms and normalisation of β -carotene levels following restriction of the culprit vitamin from the diet.

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Response from the authors

The most important observation in yellow-orange discolouration of the skin is the absence of scleral icterus. As Dr Miesen commented, the differential diagnosis is then limited to hypercarotenaemia, lycopenaemia, riboflavinaemia, and certain drugs, or vitamin drinks. A good review of carotenoderma has been written by Maharsak et al.¹ Carotenoderma may remain for weeks regardless of serum carotene levels, due to accumulation in the tissue. The importance of recognising this condition is mainly to explain to the patient what is happening and to avoid unnecessary examinations. Usually, hypercarotenaemia is caused by excessive dietary consumption of β -carotene. Some metabolic states may add to hypercarotenaemia due to impaired conversion of β -carotene into vitamin A or through hyperlipidaemia. Foods containing high carotene levels include carrots, spinach, peas, green beans, sweet potatoes, broccoli, mangoes, butter, eggs, milk and palm oil. Surprisingly, many green fruits and vegetables contain much more carotene than their yellow counterparts, with the yellow colour masked by the green chlorophyll. Processing of fruit and vegetables that results in breakdown of cell membranes significantly increases the bioavailability of the carotene. Our patient ate more than three big cans of processed vegetables daily (Hak, Zeist, the Netherlands: spinach, beans, peas) in addition to freshly cooked haricots verts, eggs, oranges, apples and also six tomatoes. He denied vitamin drinks. Lycopene, which is found in tomatoes, rosehips, pink guava, pink grapefruit and watermelon, may have added to the total clinical picture. However, we feel that the message of the photo quiz should be that a bizarre diet may surprise clinicians. Within eight days of his hospitalisation, β -carotene levels decreased to 0.95 μ /l. At follow-up, the patient was eating a normal diet and showed no yellow discolouration.

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