

6. Greaves R, Woollard G, Hoard K, Walmsley T, Johnson L, Briscoe S, et al. Laboratory medicine best practice guideline: vitamins A, E and the carotenoids in blood. *Clin Biochem Rev.* 2014;35: 81–113.
7. D'Ambrosio D, Clugston R, Blaner W. Vitamin A metabolism: an update. *Nutrients.* 2011;3:63–103.
8. Amaya García MJ, Vilchez López FJ, Campos Martín C, Sánchez Vera P, Pereira Cunill JL. Micronutrients in bariatric surgery [Article in España]. *Nutr Hosp.* 2012;27:349–61.
9. Granado-Lorencio F, Simal-Antón A, Blanco-Navarro I, González-Domínguez T, Pérez-Sacristán B. Depletion of serum carotenoid and other fat-soluble vitamin concentrations following obesity surgery. *Obes Surg.* 2011;1605–11.

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Comments on «Hipercarotinemia after bariatric surgery»[☆]



Comentarios a «Hipercarotinemia tras cirugía bariátrica»

Sir,

With regard to the letter to the editor by Soblechero-Martín et al. in this issue, referring to the case report recently published in *ENDOCRINOLOGÍA Y NUTRICIÓN* and described by our group,¹ we first of all want to thank the authors for their enriching contribution. Second, we would like to clarify some issues.

According to their comments, blood carotenoid and retinyl ester levels were regrettably not measured. In addition, retinol levels were not available at the time the patient attended the emergency room for skin hyperpigmentation. However, the interpretation of vitamin A biochemical measurements is difficult because they may be modified by various circumstances such as decreased retinol binding protein (RBP) levels or retinoid treatment itself.² Low RBP levels could therefore have resulted in falsely low vitamin A levels, leading to long-term supplementation with high vitamin A doses.

On the other hand, although no detailed quantification of the amount of carotenoids taken by the patient was made using food composition tables, the detailed dietary survey performed showed no excess consumption. Moreover, a very weak correlation has been reported between vitamin A intake and serum levels.³

On the other hand, other causes of carotenoderma such as hypothyroidism, diabetes mellitus, anorexia nervosa, nephrotic syndrome, or liver disease were excluded.

Finally, it should be noted that the patient's symptoms, as well as the yellowish pigmentation of the palm of her hand, disappeared after the vitamin A dose was reduced. Therefore, despite the limitations and lack of biochemical measurements due to the unexpectedness of the finding, the timing of the events and the clinical picture led us to attribute the symptoms to treatment with vitamin A, especially given the reversibility of the condition after a substantial reduction of the dose administered. Because of this and the uncommon presentation of the dermatological lesions, we considered the case to be of interest and one worth sharing.

References

1. Gutiérrez Medina S, Iglesias Bolaños P, Paniagua Ruíz A, Blanca Martínez-Barbeito M, Bartolomé Hernández L. Hypercarotinemia after bariatric surgery. *Endocrinol Nutr.* 2016;63:43–4.
2. Granado Lorencio F, Córdoba Chicote C, Olmedilla Alonso B, Deulofeu Piquet R, Ruiz Budría J. Evaluación del estatus nutricional de vitamina A. *Documentos de la Sociedad Española de Bioquímica Clínica y Patología Molecular (SEQC).* 2015;8:68–76.
3. Willett WC, Stampfer MJ, Underwood BA, Sampson LA, Hennekens CH, Wallingford JC, et al. Vitamin A supplementation and plasma retinol levels: a randomized clinical trial among women. *J Natl Cancer Inst.* 1984;73:1445–8.

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