Reversible knuckle hyperpigmentation in B12 deficiency

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Clinical—A 25-year-old female, a university student, presented with complaints of gradually progressive blackish discoloration of skin over the dorsum of proximal interphalangeal and distal interphalangeal joints of both hands for the past 3 months (Figure 1).

Figure 1

She was a vegan and gave no history of any chronic drug intake. Her investigations revealed haemoglobin as 87 gm/L with normal leukocyte and platelet counts; peripheral blood film showed normocytic normochromic picture with presence of hypersegmented neutrophils; normal serum iron studies, folic acid levels and red blood cell indices. However serum vitamin B12 levels were decreased to 31.6 pg/ml. All other investigations including ultrasound abdomen, faecal fat estimation, IgA tTG and anti-parietal cell antibodies were normal.

A final diagnosis of vitamin B12 deficiency anaemia secondary to nutritional deficiency was made and patient was put on oral replacement. Her subsequent visit, after 6 months of regular treatment, revealed disappearance of pigmentation and normalization of serum vitamin B12 haemoglobin levels.
**Discussion**—Hyperpigmentation of skin, especially knuckles, has been reported as a manifestation of vitamin B12 deficiency. Only occasionally, as in the present case, has it been reported as a presenting manifestation of B12 deficiency. The pigmentation is reversible with supplementation of vitamin B12.

The pigmentation can also involve nails. Although the exact mechanism is not known it is believed to be a result of increase in melanin synthesis in B12 deficiency.

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