



Background

Patients on home parenteral nutrition (HPN) receive macronutrients, electrolytes, and trace elements in their HPN bag. The multivitamins must be added separately as a dual vial addition daily. While labs to monitor HPN usually include a complete metabolic profile, magnesium, phosphorus, and complete blood count assessed on a monthly or bi-monthly basis, vitamin and trace element panels may be done every 6 months, and vitamin levels (such as Vitamin A, E, or B-vitamins) may only be done on an as needed basis based on any signs or symptoms noted.

Case Report

- 53-year-old female; Ht: 66 in / Wt: 62.7 kg
- HPN for > 20 years (short bowel syndrome secondary to Crohn's disease and multiple small/large bowel resections)
- GI anatomy - stomach, duodenum, 2.5 ft small bowel, rectum, and end jejunostomy/ileostomy.
- HPN daily provides: 75 gm amino acids, 175 gm dextrose, no lipids; zinc, copper in the bag
- Standard IV multivitamins (Infuvite©, Baxter) added separately daily. Oral selenium provided
- She does eat some foods with variable tolerance and primarily for pleasure.

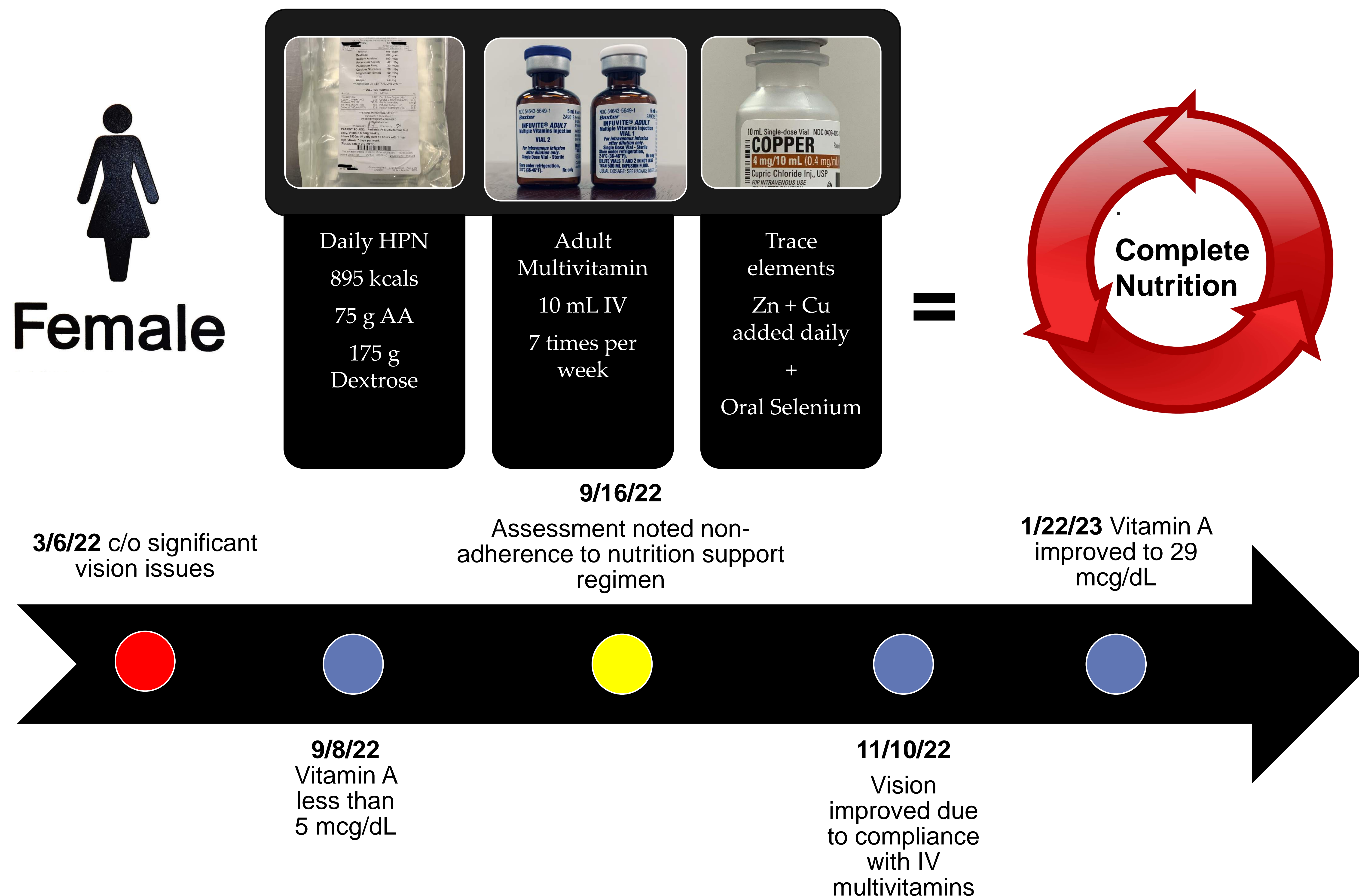
During assessments over 7 months, she complained of black spots in her vision when lying down, “white balloons and red glitter” in peripheral vision as well as no night vision and difficulty seeing indoors. She could see outdoors without difficulty. She has seen multiple ophthalmic specialists, who did not have answers for the patient.

Her clinician explained the potential for Vitamin A deficiency to cause the symptoms she was describing. The patient was taking an oral vitamin she believed was meeting her needs. Further investigation found she was ordering but not using the IV multivitamin as prescribed.

Lab Results

	Initial	Follow up	Reference Range
Vitamin A (retinol) mcg/dL	< 5	29	38-98

Figure 1. Prescribed Home Nutrition Support Regimen



Summary and Implications for Practice

- ✓ Although the patient believed her oral multivitamin provided adequate fat and water soluble vitamins, she has reduced absorptive capacity due to her altered GI anatomy.
- ✓ Visual decrease at night (night blindness) is a key indicator of Vitamin A deficiency. Unusual changes in vision should be investigated for patients receiving HPN as Vitamin A has a vital role in phototransduction.
- ✓ This case report emphasizes the importance of probing patients on HPN to assess if they are infusing the multivitamins as prescribed. This may be further extrapolated to other medications.
- ✓ Clinicians should routinely educate patients regarding the importance of all components of their HPN formula to prevent nutritional deficiencies.