



HYPOTHYROIDISM IN COMBINATION WITH VITAMIN C AND THIAMIN DEFICIENCY MAY BE AN UNDERESTIMATED ISSUE IN SURGICAL PATIENTS



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Background

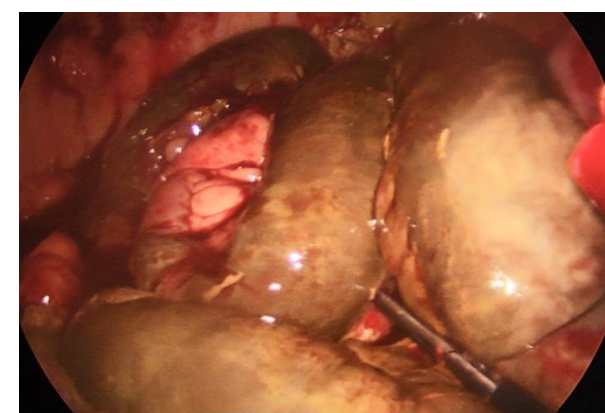
- ❑ Poly-vitamin deficiency & endocrinopathy
 - Rare condition
 - Causes mix of unclear symptoms
 - Develop critical illness (sepsis)
- ❑ Risk factors:
 - Poor socioeconomic status
 - Poor dietary choices
 - Drug and alcohol abuse

Index patient

77 yo female: presents to ER with sepsis, confusion, respiratory failure, necrotic leg



- Improvement after BKA
- Gluteal necrosis debrided; laparoscopy for colostomy; necrotic bowel resected



Elevated TSH: IV Synthroid & Thiamin
Mild improvement

Poor healing stump and colostomy and skin ulcers: Scurvy: VitC <0.1; Hospice



Patients and Methods

- ❑ Discussion of death of index patient (& identification of more VitC & B1 deficient patients)
- ❑ Patients considered at risk tested for TSH, VitC, Thiamin and Zinc levels

Results

2018-2022: 801 VitC levels: 309 (39%) below 0.4mg/dl; 38 had critically low levels (<0.1mg/dl)

In this population: 626 Thiamin levels: 39% low; 2221 TSH levels: 14% elevated

Final study group: 22 patients with elevated TSH & low VitC and/or VitB1 levels (within 1 week) (41% combined Vitamin B1 and C deficient).

- 16 female and 6 male
- Median age 54.8 (range 19.4 to 85.8) years; Median BMI 33.7 (range 19.5 to 59.7) kg/m²; 68% obese or morbidly obese
- 4 oncologic patients, 7 bariatric patients, one had partial gastrectomy.
- Approximately 33% low pre-albumin and/or zinc

After diagnosis, aggressive replacement of Vitamins and thyroid hormones

Results

- 4 patients from medical teams
- 6 patients managed non-operatively
- 12 had surgeries (colectomy, appendectomy, abdominal explorations, VATS, skin incisions, BKA, foregut & bariatric surgery)
- 2 died from Scurvy (one also Myxedema)
- 1 patient (non healing perineal wound after APR) died from recurrent anal cancer
- All others alive after a protracted clinical course

- ❑ Early phase: patients tested after their procedures
- ❑ Later phase: preoperative testing per protocol with supplementation starting prior to surgery even if results are not received

Summary and Conclusions

- ❑ Poly-vitamin deficiency together with endocrinopathy: potentially under-diagnosed
- ❑ Consider inpatients presenting with a mix of unclear symptoms
- ❑ If appropriately diagnosed and treated, full recovery can be achieved