Indian Journal of
Nutrition

Open Science Publications

Volume 13, Issue 2 - 2026

www.opensciencepublications.com

A Case Report on Management of Nutritional Status with Hyperosmia in a Post-Surgical Patient Using 100% Whey Isolate

Case Report

Jamir I

Department of Dietetics, Christian Institute of Health Sciences and Research, Nagaland, India

***Corresponding author:** : Jamir I, Department of Dietetics, Christian Institute of Health Sciences and Research, Nagaland, India.
E- mail Id: atu32.imsu@gmail.com

Article Information: **Submission:** 27/07/2026; **Accepted:** 08/09/2026; **Published:** 11/09/2026

Abstract

Background: post-operative patients often experience gastrointestinal intolerance and altered sensory perception, including hyperosmia—an exaggerated sensitivity to smell that can significantly impact dietary intake. Hyperosmia heightens aversion to food odors, frequently resulting in reduced appetite, nausea, and poor tolerance to standard oral nutrition supplements (ONS). Tailored nutritional strategies that minimize sensory triggers are therefore essential to maintain adequate nutrient intake and support recovery.

Materials and Methods: A 54-year-old female with a history of intestinal obstruction, Hirschsprung's disease, and previous abdominal surgeries underwent Hartmann's reversal. Nutrition care was delivered from POD 3 to POD 8, with daily monitoring of oral intake, symptoms, ONS tolerance, and progression of diet. Hyperosmia contributed to intolerance to polymeric ONS. A transition to Pentasure Whey Max (100% whey isolate) was implemented based on sensory tolerance, protein requirements (1.2 g/kg/day), and energy targets (30 kcal/kg/day).

Results: The patient initially tolerated only liquids and polymeric ONS poorly, developing nausea and vomiting by POD 5. Switching to 100% whey isolate led to rapid improvement in tolerance within 24 hours. Protein intake increased from 28 g on POD 3 to 63 g/day by discharge (POD 8). Calorie intake progressively improved from 231 kcal/day to 1600 kcal/day. Whey isolate's neutral taste minimized odor-triggered intolerance associated with hyperosmia, enabling consistent intake even during fluid restriction. Soft diet was fully tolerated by POD 7.

Conclusion: 100% whey isolate is an effective nutritional strategy for post-surgical patients with hyperosmia and feeding intolerance. Its neutral sensory profile, high digestibility, and flexibility in administration support adequate protein intake and enhance recovery. The case reinforces the importance of choosing ONS that align with sensory sensitivities in post-operative nutrition care.

Introduction

Post-operative nutritional management requires more than escalation of calories and protein; it requires identification and correction of factors that interfere with nutrition delivery. Following major gastrointestinal surgery, reduced intake may arise from gastrointestinal symptoms, dietary restrictions, altered sensory perception, and poor tolerance of oral nutritional supplements (ONS). Inadequate intake during this period can widen the gap between estimated requirements and actual nutrient delivery. ESPEN guidelines support early, individualized nutrition therapy in surgical patients. In this context, this case illustrates the practical application of sensory-tailored ONS selection in a post-surgical patient whose intake was limited by clinically assessed odor sensitivity and intolerance to a polymeric ONS.

Case Presentation

A 54-year-old female (BMI 21 kg/m^2) presented for a planned Hartmann's reversal. Her history included intestinal obstruction, achalasia cardia, Hirschsprung's disease, and multiple prior surgeries

ISSN: 2395-2326

including Heller's myotomy with DOR fundoplication and sigmoid colectomy. On nutrition assessment, the patient reported no nausea, vomiting, diarrhea, or chewing/swallowing issues but was on liquid diet intake with SGA-B classification and reduced functional activity.

The patient was clinically assessed as having heightened sensitivity to food odors, which caused discomfort and reluctance toward the polymeric ONS. This was a clinical observation based on patient-reported symptoms and feeding behavior; no standardized olfactory testing or formally validated hyperosmia instrument was used.

Laboratory values on 25–29 October showed anemia (Hb 9.1–9.9 g/dL), elevated TLC, and a fall in serum potassium to 3.2 mmol/L on POD 5. These findings were interpreted in the context of the post-operative inflammatory and metabolic response. Anemia may reflect perioperative blood loss, inflammation, or other clinical factors and should not be considered a specific marker of nutritional deficiency in isolation. The elevated TLC was considered compatible with an inflammatory response.

Nutrition Intervention

Requirements: **30 kcal/kg/day** and **1.2 g/kg/day protein**, as per ESPEN/IAPEN guidelines.

POD 3–4

- Started with polymeric ONS (5 scoops/day); partial tolerance.
- Hyperosmia triggered aversion to smell, limiting intake.

POD 5

- Developed nausea/vomiting; oral fluids restricted to 60 ml 2-hourly.
- Polymeric ONS discontinued → shifted to 100% whey isolate due to neutral odor and taste.

POD 6–8

- Rapid symptom relief; oral intake rose to 1500 ml/day.
- Introduced bland liquids and soft foods.
- Whey isolate adjusted to 9–10 sachets/day (~45-50 grams) to meet protein goals.
- Discharged on high-protein soft diet with 1–2 sachets/day for protein support.

Protein intake increased from 28 g (POD 3) to 63 g (POD 8). Caloric intake improved from 231 kcal to 1600 kcal/day.

Outcomes

- Complete resolution of nausea and vomiting after switching to whey isolate.
- Improved tolerance to oral feeds despite hyperosmia.
- Ability to meet protein targets even during volume restriction.
- No alteration of food taste or smell, supporting acceptance.
- Early progression to full soft diet and successful discharge.

Discussion

Odor sensitivity can be an important, but potentially under-recognized, barrier to oral nutrition delivery after surgery. In this case, the patient's clinically observed odor sensitivity coincided with aversion to the polymeric ONS and subsequent nausea/vomiting, making sensory tolerance an important consideration in formulation selection. However, because hyperosmia was assessed clinically rather than with a standardized olfactory test, the case cannot establish a formally validated diagnosis of hyperosmia or infer causality between odor sensitivity and the clinical outcomes. The improvement in intake following substitution with 100% whey isolate supports the practical value of individualized ONS selection when sensory characteristics limit adherence, while recognizing that the observed response may reflect multiple concurrent changes in symptoms, diet progression, and overall post-operative recovery.

Conclusion

100% whey isolate is highly effective for post-operative patients with hyperosmia who struggle with polymeric formulas. Its sensory neutrality allows better tolerance, maintains protein adequacy, and supports faster recovery.

Ethical Approval

Ethical clearance for this case report was granted by the Christian Institute of Health Sciences and Research Institutional Ethics Committee, Reference No: CIHSR-IEC/2025-26 EXP REV-CR/1, under expedited review

Acknowledgement

The authors would like to thank Hexagon Nutrition Limited for supplying Penta sure Whey Max, 100% Whey Isolate formula supplements used during this study. Their support was instrumental in enabling this research, and we greatly appreciate their contribution to enhancing patient care and health outcomes

References

1. Weimann A, Braga M, Carli F, Higashiguchi T, Hübner M, Klek S, et al. (2017) ESPEN guideline: Clinical nutrition in surgery. Clin Nutr 36: 623-650.
2. Weimann A, Braga M, Carli F, Higashiguchi T, Hübner M, Klek S, et al. (2021) ESPEN practical guideline: Clinical nutrition in surgery. Clin Nutr 40: 4745-4761.
3. Singer P, Blaser AR, Berger MM, Alhazzani W, Calder PC, Casaer MP, et al. (2019) ESPEN guideline on clinical nutrition in the intensive care unit. Clin Nutr 38: 48-79.
4. Cederholm T, Barazzoni R, Austin P, Ballmer P, Biolo G, Bischoff SC, et al. (2017) ESPEN guidelines on definitions and terminology of clinical nutrition. Clin Nutr 36: 49-64.

Citation: Jamir I. A Case Report on Management of Nutritional Status with Hyperosmia in a Post-Surgical Patient Using 100% Whey Isolate. Indian J Nutri. 2026;13(2): 350.

5. De Silva A, Salem V, Long CJ, Makwana A (2015) The use of oral nutritional supplements in surgical patients: current evidence and practice. Proc Nutr Soc 74: 389-398.

6. Marshall K (2004) Therapeutic applications of whey protein. Altern Med Rev 9: 136-156.

7. Phillips SM, Fulgoni VL, Heaney RP, Nicklas TA, Slavin JL, Weaver CM (2015) Commonly consumed protein foods contribute to nutrient intake, diet quality, and nutrient adequacy. Am J Clin Nutr 101: 1346S-1352S.

8. Hoffman JR, Falvo MJ (2004) Protein: Which is best? J Sports Sci Med 3: 118-130.

9. Doty RL (2019) Olfaction in health and disease. Handb Clin Neurol 164: 3-45.

10. Croy I, Nordin S, Hummel T (2014) Olfactory disorders and quality of life: an updated review. Chem Senses 39: 185-194.

11. Deutz NEP, Bauer JM, Barazzoni R, Biolo G, Boirie Y, Bosy-Westphal A, et al. (2014) Protein intake and exercise for optimal muscle function with aging: recommendations from the PROT-AGE Study Group. Clin Nutr 33: 929-936.

Citation: Jamir I. A Case Report on Management of Nutritional Status with Hyperosmia in a Post-Surgical Patient Using 100% Whey Isolate. Indian J Nutri. 2026;13(2): 350.