

Adequate Nutritional Support and Monitoring in Post-Traumatic High Output Duodenal Fistula

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Abstract : Background: Adequate nutritional support and daily patient monitoring have an independent therapeutic role in the successful management of high output fistulae and early recovery after abdominal trauma. Case presentation: An 18-year-old girl was brought to AIIMS emergency with alleged history of fall of a heavy weight (electric motor) over abdomen. She was evaluated as per Advanced Trauma Life Support(ATLS) protocols and diagnosed to have significant abdominal trauma. After stabilization, she was referred to Trauma center. Abdomen was guarded and focused assessment with sonography for trauma(FAST) was found positive. Complete duodenojejunal(DJ) junction transection was found at laparotomy, and end-to-end repair was done. However, patient was re-explored in view of biliary peritonitis on post-operative day3, and anastomotic leak was found with sloughing of duodenal end. Resection of non-viable segments was done followed by side-to-side anastomosis. Unfortunately, the anastomosis leaked again, this time due to a post-anastomotic kink, diagnosed on dye study. Due to hostile abdomen, the patient was planned for supportive care, with plan of build-up and delayed definitive surgery. Percutaneous transhepatic biliary drainage (PTBD) and STSG were required in the course as well. Nutrition: In intensive care unit (ICU), major goals of nutritional therapy were to improve wound healing, optimize nutrition, minimize enteral feed associated complications, reduce biliary fistula output, and prepare the patient for definitive surgeries. Feeding jejunostomy (FJ) was started from day 4 at the rate of 30ml/h along with total parenteral nutrition (TPN) and intra-venous (IV) micronutrients support. Due to high bile output, bile refeed started from day 13. After 23 days of ICU stay, patient was transferred to general ward with body mass index (BMI)<11kg/m² and serum albumin -1.5gm%. Patient was received in the ward in catabolic phase with high risk of refeeding syndrome. Patient was kept on FJ bolus feed at the rate of 30-50 ml/h. After 3-4 days, while maintaining patient diet book log it was observed that patient use to refuse feed at night and started becoming less responsive with every passing day. After few minutes of conversation with the patient for a couple of days, she complained about enteral feed discharge in urine, mild pain and sign of dumping syndrome. Dye study was done, which ruled out any enterovesical fistula and conservative management were planned. At this time, decision was taken for continuous slow rate feeding through commercial feeding pump at the rate of 2-3ml/min. Drastic improvement was observed from the second day in gastro-intestinal symptoms and general condition of the patient. Nutritional composition of feed, TPN and diet ranged between 800 and 2100 kcal and 50-95 g protein. After STSG, TPN was stopped. Periodic diet counselling was given to improve oral intake. At the time of discharge, serum albumin level was 2.1g%, weight - 38.6, BMI - 15.19 kg/m². Patient got discharge on an oral diet. Conclusion: Successful management of post-traumatic proximal high output fistulae is a challenging task, due to impaired nutrient absorption and enteral feed associated complications. Strategic- and goal-based nutrition support can salvage such critically ill patients, as demonstrated in the present case.

Keywords : nutritional monitoring, nutritional support, duodenal fistula, abdominal trauma

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