

Active 2 Year Old Thrives Using Next Generation Portable Pump

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Tube feeding is a common treatment for Failure to Thrive which is typically diagnosed as a result of a disease state. An active 2-year-old female was diagnosed with hypercholesterolemia, hypertriglyceridemia, gastroesophageal reflux disease, and failure to thrive as a result of an undiagnosed feeding/appetite disorder. Enteral feeding began June 2005. During the first 2.5 months of tube feeding, compliance to the feeding schedule was not met due to lack of pump portability and problematic pump programming of first generation portable pumps (FGPP). Changing to a next generation portable pump (NGPP, EnteraLite® Infinity®, ZEVEX, Salt Lake City, Utah) resulted in feeding schedule compliance and the patient is now growing at a steady rate.

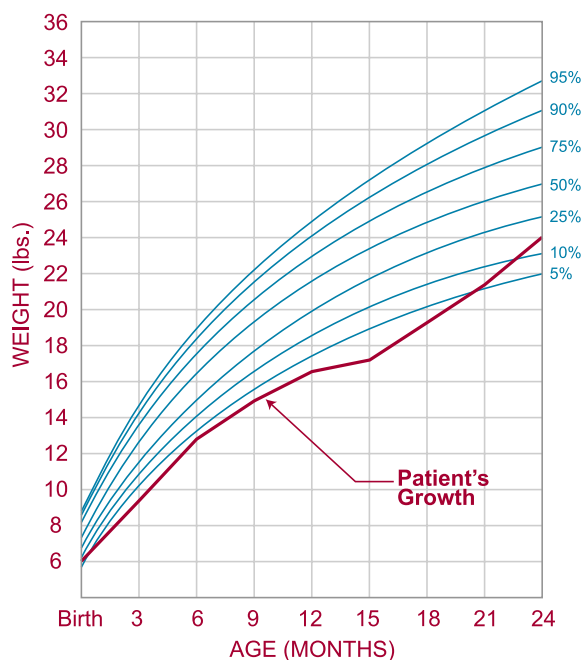
Objective: The objective of this case study is to demonstrate the impact of a NGPP to clinical outcomes by promoting compliance to an enteral feeding schedule by eliminating daily living activity barriers.

Background: At birth, the patient weighed 6 lbs, 3 oz. born to a 25 year old woman, gravida 3, para 4. Between 2 weeks and 16 weeks old, patient exhibited signs of Gastroesophageal Reflux Disorder (GERD) through posturing, refusing to take liquid or solid foods, and indications of aspiration such as persistent congestion, and reoccurring respiratory and sinus infections. At 15 months, the patient's growth dropped off the growth curve; weight dropped to 16 pounds (50th percentile for a 6-month-old).

At 18 months of age, a Nissen Fundoplication was performed. Simultaneously a Percutaneous Endoscopic Gastrostomy (PEG) Tube was placed as a precaution if patient refused to eat postoperative. Tube feedings were started 4 days later when the patient did not exhibit signs of hunger or thirst.

Therapy Challenges: The patient was discharged from hospital with a FGPP and prescription for 60cc of a standard pediatric tube feeding formula every three hours during the day and continuous night time feeds.

Two FGPPs were tried without successful compliance to the feeding schedule.



Pump A:

- ▶ Too heavy for patient to carry.
- ▶ No programmable dose; requiring caregiver to track time closely to avoid over feeding or to refill feeding bag.
- ▶ 8 hours of battery life, requiring pump to be plugged in for most feedings.

Pump B:

- ▶ Larger than pump A when placed in carry pack.
- ▶ Utilized drip chamber technology requiring the pump to remain upright at all times to avoid flow alarms.

As a result, the FGPPs remained on an IV pole during most of the feedings. The patient's physical activity was restricted affecting muscle growth, and activities

for the entire family were impeded resulting in late and missed feedings.

Gravity feedings were recommended as a solution for day time feedings. Simultaneously feedings were adjusted to 90cc, every three hours. The patient did not tolerate the gravity feedings. During gravity feedings, the last 15cc were delivered via syringe, resulting in high pressures that caused the anti-reflux valve in the low profile gastrostomy tube to malfunction. Three gastrostomy tubes were replaced within 10 days.

Conclusion: Pump feedings were again recommended. Communicating with other parents, the caregivers learned of a NGPP that the patient could carry and could

be programmed to deliver the prescribed feedings at desired intervals.

Use of the NGPP with a small custom backpack, programmed with interval feedings began August 2005. This allowed unlimited physical activity for the patient and uninterrupted daily activities for the family.

Summary: Since starting a successful tube feeding regimen which includes a NGPP that enables compliance to the feeding schedule, allowing the patient to be physically active, the patient has experienced weight gains of 3 lbs and height increases of 2 inches.

