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Infantile Hypertrophic Pyloric Stenosis in a Preterm Infant Following Nasojejunal Tube Feeding

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Infantile hypertrophic pyloric stenosis is a disorder of young infants caused by hypertrophy of the pylorus, which can progress to near-complete obstruction of the gastric outlet, leading to forceful vomiting[1].

Hypertrophic pyloric stenosis occurs in approximately 2 to 3.5 per 1000 live births, although rates and trends vary markedly from region to region, it is more common in males and preterm babies. Approximately 30 to 40 percent of cases occur in first-born children (approximately 1.5-fold increased risk). Symptoms usually begin between 3 and 5 weeks of age, and very rarely occur after 12 weeks of age[1].

A baby boy was assessed for poor weight gaining, as he was preterm started on Nasogastric tube feeding, but later found to have poor weight gaining as he was having significant GERD despite treatment. He is an outcome of twin pregnancy delivered at the gestational age of 29+6 days, 2nd twin of primipra mother. The baby had RDS and later developed chronic lung disease.

As he has unsatisfactory weight gaining while feeding on NGT, a Nasojejunal tube was inserted for feeding at the age of 37 weeks corrected gestational age (50 days of age). It remained in-situ for about 5 weeks with good weight gaining.

He was also treated with erythromycin as prokinetic at the age of 8 weeks and continued for further 6 weeks. He was also on diuretics (for bronchopulmonary dysplasia), proton pump inhibitor and food thickener to treat gastro-oesophageal reflux.

Shortly after removal of the NJ tube, he had projectile vomiting. Blood gas showed hypokalaemic hypochloraemic metabolic alkalosis. An abdominal ultrasound was performed, and it revealed significant pyloric stenosis. He required Surgery and had a positive recovery.

The aetiology of IHPS is unclear but probably is multifactorial, involving genetic predisposition and environmental factors. Neonatal hypergastrinemia and gastric hyperacidity may play a role. Prematurity may be a risk factor[1]. Other risk factors are macrolide antibiotics[3].

Infants who cannot maintain adequate oral intake due to pulmonary, cardiac, and/or neurologic disorders often require enteral tube feedings. Initially, such infants need nasogastric tube feeding. Few cases don't get benefit with nasogastric tube feeding as it can cause significant complications such as reflux and aspiration, Trans- pyloric tube feeding usually needed to overcome such complications.

Hypertrophic pyloric stenosis was first mentioned as a complication of trans-pyloric (TP) tube feeding in premature infants by Evans et al. in 1982[2]. Since then, more than 19 cases have been reported. The duration of the TP tube insertion from 2 weeks to several months[4].

The most common symptom of infantile HPS is projectile non-bilious vomiting, whereas the major symptoms of HPS associated with TP tube feeding are said to be an increasing volume of gastric residuals, an increase in the frequency and amount of vomiting and difficulty in establishing oral or nasogastric tube feeding[4]. The risk of developing pyloric stenosis in infants with respiratory distress syndrome who had been fed via the transpyloric tube as 20 times greater than the normal population[4].

In Conclusion, the mechanism of pyloric stenosis following transpyloric feeding is unclear. In Japan, the incidence was 15-fold (2.8%) higher compared to the overall prevalence of infantile HPS. Although it is a very rare complication, it must be taken into account when the symptoms of delayed gastric emptying are seen in an infant being fed via TP tube.

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