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Is esophageal atresia a natural way of fasting?

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One day in spring, April 2010 a middle aged woman with her infant rushed into the emergency room at a local hospital. The patient was an infant, only 8 days old with a weight of 2300 grams. He had a weight loss of 400 grams since his birth. He had frequent vomits with no toleration to breast feeding. Because of severe dehydration and his poor physical condition, he was hospitalized in the newborn intensive care unit. The infant was firstly diagnosed with hypertrophic pyloric stenosis, but then his ultrasound did not confirm it. Four days later, the patient was referred to the surgery department with the diagnosis of esophageal atresia (EA)."
This was a true story from my colleague working in the pediatric department. The patient was diagnosed with EA, type C, the most common form of EA, which the upper esophagus ends in a blind pouch and there is a tracheoesophageal fistula (TEF) that is connected to the distal esophagus. This type of TEF prevents the patient from swallowing anything, and management of dehydration and hypoglycemia is necessary for survival.

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This infant did not accept feeding each time he was breast fed. That is, he was food-deprived for the first 9 days of his life and after 9 days he only received total parental nutrition until his operation. Interestingly, during this period he never became hypoglycemic.

In another report by Gopal M. and Woodward M., a child with EA and distal TEF was also diagnosed 9 days from birth. The patients' parents were concerned with vomits and coughs after bottle feeds during the first days of their child's life. On day nine, the child had a particularly bad choking episode after a feed. Thus, she had a feeding tube on the ward after referring to a local hospital. On day eleven, the decision was made to restart feeds; but she immediately began to cough after her first bottle. Similarly, contrast x-ray revealed EA, type C. Interestingly, this patient was also diagnosed after nine days of birth without symptoms of hypoglycemia (2). It has been shown that after birth, there is a fall in plasma glucose concentration in all neonates, reaching its lowest value between 30 and 90 minutes after birth.

Then, in a normal neonate, the plasma glucose concentration raises to a maintained level of 40 to 80 mg/dl. In a full-term newborn infant, the plasma glucose level remains steady up to nine hours after a meal (2). But, these two reported cases seem to be exceptions. They were naturally fasted for nine days without displaying a

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hypoglycemic picture. By now, there is no explanation for this phenomenon. Probably, there are some compensated mechanisms which cause to tolerate the fasting and maintaining the blood glucose level in a quite normal range. These two rare cases could be considered as natural fasting in human.

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