"You Said It Was Quite Green This Morning...."

Dr. Kim McFarlane[1]; Dr. Mark Conrad Fivaz[2]

1. Senior Medical Officer Health Contact Centre HSQ Department of Health Queensland Government and member of the IAED ECNS Council of Standards
2. Medical Director Priority Solutions Inc., and Chair of the IAED ECNS Council of Standards

Corresponding author:
Mark Conrad Fivaz, MD
Priority Solutions, Inc.
110 S. Regent Street, Suite 500
Salt Lake City, Utah 84111, USA
801-363-9127 ext. 326
Conrad.fivaz@prioritysolutionsinc.com

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INTRODUCTION

The Health Contact Centre (HCC) in Brisbane Australia is one of the Health Support Queensland's services that provides clinical support, either directly to the community (4.7 million Queenslanders) or in support of Hospital and Health Services (HHS) and the Department of Health. Registered nurses (RNs) use the Emergency Communication Nurse System™ (ECNS™) as Clinical Decision Software System (CDSS) to triage callers who access this service via telephone. The RN uses a set of symptom-based protocols in the ECNS to telephonically triage the caller/patient and recommends the most appropriate healthcare resource and timeframe in which to access the resource.

The call reviewed here was received by the center at around 2:30 am on a Sunday morning. The mother of a 4-day-old female newborn reported that the baby's stomach "just makes the craziest noises." She also reported increasing episodes of regurgitation and vomiting over the past few days, including more than two episodes on that day alone. She stated that some of the vomit was green, saying that "this morning there were two really big ones with green breastmilk."

MANAGEMENT AND OUTCOME

The RN utilized the Unwell irritable newborn (0-3 months) Protocol and asked the relevant questions, ruling out the presence of respiratory distress, cortical neurological symptoms, meningeal irritation, underlying injury, dehydration, concerned caregiver, underlying septic arthritis, vascular constriction, groin swelling, fever, and crying with bowel movement.

A positive response was eventually triggered in response to a question about the presence of more than two episodes of vomiting, prompting a disposition.

The disposition or Recommended Care Level (RCL) reached suggested the baby should be seen by a doctor within 12 hours. In spite of the fact that the child looked well, the mother was given a range of options to seek care sooner if she was concerned. These options included accessing the out-of-hours general practitioners, going to the hospital, or accessing primary care facilities where she could take her baby to be seen early that morning.

DISCUSSION

The infant's mother presented to the Emergency Department (ED) that same morning, and the baby was diagnosed with intestinal malrotation. A pediatric surgeon and fellow of the Royal Australasian College of Surgeons (who was involved in the infant's treatment) contacted the call center to create awareness and to discuss the importance of the presence of bilious vomiting (green vomit) and the likelihood of an underlying intestinal malrotation or obstruction being present in patients with this presentation. He also emphasized the need to be seen at an ED as soon as possible so that the diagnosis can be made and preparation for surgery initiated.

More importantly, he stressed the fact that patients who present with bilious (green) vomiting, and who are not currently unwell or in any distress, should

not be dealt with any differently than those patients who presents with bilious vomiting and are unwell, and thus are considered to be having an emergency. This is because it is impossible to distinguish between babies who have a life-threatening cause for bilious vomiting and babies who have a more "benign" cause. Bilious (green) vomit in childhood is a condition that must be taken seriously, as it can indicate the presence of potentially serious gut pathology.[1] A diagnosis of malrotation (estimated as 1 in 500 live births) of the gut cannot be excluded when bilious vomit is present.

These young patients can present as being well at presentation, with the only symptom being the green vomit (bilious vomiting). This can lead to false reassurance, as their condition can quickly (in a matter of hours) deteriorate as the bowel becomes ischemic.[2] Malrotation is an eminently treatable disease, but if cardinal symptoms are missed or ignored, or if treatment is not instituted urgently, it can lead to extensive bowel loss and short bowel syndrome, or even an avoidable death.[3]

Newborns who present with even one bilious vomiting episode (with or without abdominal distention) should be considered to be having intestinal obstruction (a surgical emergency) and referred urgently for diagnosis and perioperative management. Intestinal obstruction with bilious vomiting can be caused by duodenal atresia, jejunoileal atresia, malrotation and volvulus, meconium ileus, and necrotizing enterocolitis.[4]

A proposal for change request has been submitted to the proprietors of ECNS to add a question to the relevant protocols to address the presence of bilious (green) vomit to ensure RNs are identifying this potentially fatal presentation of intestinal malrotation or obstruction and referring these patients urgently to an ED.

REFERENCES

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