Calcium polystyrene sulfonate

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Acute intestinal obstruction: case report

A 52-year-old man developed acute intestinal obstruction after receiving calcium polystyrene sulfonate [Kalimate] for hyperkalaemia.

The man underwent above-the-knee amputation for a soft tissue infection causing necrosis. In the ICU postoperatively, he experienced electrolyte imbalances, particularly hyperkalaemia with a serum potassium level of 5.4–6.0 mmol/L. He was given calcium polystyrene sulfonate 30mg in 50mL of water via his nasogastric tube 2–3 times per day, with 12 doses in total over 5 days. His condition then appeared to improve, and his nasogastric feeding was escalated from liquid to food prepared in a blender. However, his abdomen was progressively distended after a few feedings, and he had not passed a bowel movement since his operation. An abdominal x-ray showed a markedly dilated small bowel loop with valvulae conniventes throughout the abdomen. A CT scan of the abdomen demonstrated a small bowel obstruction, with a large amount of opaque content seen in the distal small bowel, colon and stomach.

The man underwent an exploratory laparotomy. The chain of hard content was found to be densely packed along the ileum to the ileocecal valve, causing the obstruction. An enterotomy was performed to open the ileum and a large amount of pale yellow stone-like content was removed. One huge stomach-shaped mass of the content - thought to be congealed calcium polystyrene sulfonate - was removed. An appendectomy was conducted, and the remainder of the calcium polystyrene sulfonate was pumped from the stomach, and irrigated from the nasogastric tube. On the third postoperative day, his nasogastric content did not include calcium polystyrene sulfonate, and nasogastric feeding was cautiously reinstated. He subsequently died due to severe sepsis related to a catheter infection and ventilator-associated pneumonia.

Author comment: "*The administration of a large amount of [calcium polystyrene sulfonate] in order to reduce serum potassium level in [this] patient with decreased intestinal function could [have led] to significant bowel obstruction.*"

Tongyoo A, et al. Acute intestinal obstruction due to Kalimate, a potassium-lowering agent: a case report and literature review. Journal of the Medical Association of Thailand 96: 1617-20, No. 12, 2013 - Thailand 803102237