Unusual foreign bodies on abdominal film in a dialysis patient

A 72-year-old male patient presented with agitation and aggression in the context of a recent admission for a coronary artery bypass graft and end-stage kidney disease.

Imaging Findings:
Abdominal X-rays show multiple micro-opacities or conglomerated opacities outlining the colon. A radio-opaque appearance projecting similarly to iodinated contrast.

Discussion:
A. Background: On review of the patient’s medications it was noted he took regular lanthanum 750mg TDS orally, a phosphate binder to control hyperphosphataemia. [1] Lanthanum ions are released in the acidic upper gastric environment, chelating dietary phosphate. Lanthanum is poorly absorbed. [2] Since lanthanum is an earth element like barium, lanthanum carbonate tablets can be projected clearly on plain film, with a density between that of bone and metal. [3]

B. Clinical Perspective: Patients may present with abdominal discomfort, diarrhoea or constipation [4], though their severity of symptoms may not correlate with the amount of opacification visualised. [1, 5] Abdominal X-ray, the investigation of choice, usually reveals faecal loading with multiple calcified opacities. These are often mistaken as ingested metallic foreign bodies, leading treating teams down unnecessary psychiatric referral pathways. The possibility of lanthanum salt retention, particularly in dialysis patients, should be raised with the treating team. Treating teams should also be cognisant of acknowledging lanthanum carbonate ingestion on abdominal X-ray referrals.

C. Imaging Perspective: Homogeneous hyperdensities in a colonic distribution.

D. Outcome: The patient was diagnosed with delirium as a result of a complicated post-operative recovery and constipation. Aperients were given and surprisingly, on repeat abdominal film, the large opacities almost completely vanished.

E. Take Home Message: To be made aware of the association between lanthanum salt retention and the alarming
appearance on abdominal X-ray, mimicking contrast agents. Patients receiving haemodialysis and peritoneal dialysis are likely to have either compound (lanthanum carbonate or lanthanum phosphate) in their gastrointestinal tract at the time of radiologic examination, indicating compliance. Chewing of the tablets is essential to minimise retention. [6] Colonic diverticulosis may prolong the intestinal transit time of the compound, and so retention in diverticular pouches may be seen. [7] Lanthanum salt retention will be cleared by the use of simple aperients, or failing this, bowel preparation. [3, 6] The known radiological appearance should be correlated with the patient’s medication history and communicated to the treating team. This would save unnecessary probing into the patient’s psychiatric history.

**Differential Diagnosis List:** Lanthanum salt retention, Retained contrast, Ingested foreign bodies

**Final Diagnosis:** Lanthanum salt retention

**References:**

Figure 1

Description: Multiple discrete opacities are visible on admission. Origin: Department of Radiology, South East Sydney and Illawarra Area Health
Description: Opacities pass rapidly into the rectum on administration of aperients. Origin: Department of Radiology, South East Sydney and Illawarra Area Health