normal healthy children. The association between
the fall in atrial natriuretic peptide concentration and
decrease in body weight after volume reduction
by haemodialysis suggests that in children volume
expansion releases atrial natriuretic peptide. In
preterm infants plasma atrial natriuretic peptide
concentrations are considerably raised on the
second day of life and decrease to normal within 2 or
3 weeks of age. Concentrations are raised in
premature infants with increased sodium intake and
are related to sodium excretion.

The localisation of the sensor of atrial natriuretic
peptide release has not yet been clearly defined in
clinical studies. Interruption of left to right shunting
and decreased left atrial distension by surgical
closure of the patent ductus arteriosus seems to be a
good clinical model in which to study mechanisms of
atrial natriuretic peptide release in preterm infants.
The immediate drop in plasma atrial natriuretic peptide
concentration by 72% when the ductus is
closed in preterm infants may indicate that atrial
distension due to left to right shunting is responsible
for increased atrial natriuretic peptide release in
preterm infants with patent ductus arteriosus.

Raised plasma atrial natriuretic peptide concen-
trations in preterm infants with patent ductus
arteriosus may help to preserve renal function and
to antagonise the renal vasoconstrictor hormones
that are raised in preterm infants with symptomatic
patent ductus arteriosus. Although we did not
measure renal function in the present study, indirect
evidence (unchanged body weight and stable plasma
concentrations of sodium, protein, and creatinine)
suggest that an appreciable reduction in urine flow
did not occur in our preterm infants after closure of
the ductus. This may be due to the fact that renal
vasoconstrictor hormone concentrations fall at the
same time and renal perfusion improves after
abolishing the ductal steal phenomenon.

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Intestinal obstruction due to ingested Vaseline

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Summary A case of intestinal obstruction due to
ingested Vaseline (white soft paraffin) is described.
While intestinal obstruction due to bezoars and
impacted foodstuffs is uncommon, though well
recognised, we know of no previous reports of
obstruction caused by semisolid mineral matter.

Case report

A 13 month old girl was admitted having swallowed
about 50 g of Vaseline. After confirmation from the
Regional Poisons Unit that this substance was
non-toxic she was observed overnight and dis-
charged home the next day, well and asymptomatic.

The following day she became irritable and unwell,
began vomiting, and developed abdominal distension.
She was readmitted to hospital four days later, having
had no bowel action for two days. Her condition
deteriorated and she was then transferred to this unit.

She was obviously unwell, with a temperature of
39°C; she was dehydrated and tachypnoeic with
grunting, shallow respiration, and pronounced sub-
costal and intercostal recession. The abdomen was
grossly distended and tympanic with general
tenderness. Obstructive bowel sounds were present. The rectum was empty and dilated. An abdominal radiograph (figure) showed grossly dilated loops of small bowel. After vigorous resuscitation laparotomy was performed.

The entire small bowel was grossly dilated. The large bowel was slightly dilated and there were large clumps of tenacious, solid material in the caecum and transverse colon, but none in the small bowel. The mesenteric glands were enlarged and inflamed, but there was no perforation or peritonitis. The bowel was normally rotated and there was no evidence of intussusception, bands, or other causes of obstruction.

The small bowel was decompressed by retrograde stripping. A large amount of gas and bile stained fluid was aspirated through a nasogastric tube. The lumps of Vaseline in the caecum and colon were then milked distally to the rectum. The abdomen was closed and the Vaseline in the rectum washed out with saline through a rectal tube.

Her recovery was uneventful and she was discharged home on the ninth day, by which time she was feeding well and opening her bowels normally.

Discussion

Swallowing non-digestible foreign material is a common occurrence, especially in childhood. Most foreign bodies which reach the stomach will pass through the gastrointestinal tract without complications, and surgical intervention is required only in a few cases, even in small infants.  

Complications that can arise from failure to pass a foreign body are ulceration, perforation, and obstruction. Ulceration and perforation occur with long, sharp objects. Intestinal obstruction due to ingested foreign material is less common, and usually occurs with bezoars when the amount of material is large and has accumulated over a period of time.  

Vaseline is a British trade name for white soft paraffin that has been bleached. It is a non-toxic, purified, semisolid mixture of hydrocarbons obtained from petroleum, with a melting point of 38°-56°C, and was initially considered unlikely to cause any complications. The enlarged, inflamed, mesenteric glands found at operation suggest that there was an inflammatory response, perhaps as a result of impurities present in the Vaseline. This would account for the clinical signs of fever and abdominal tenderness.

We do not understand why the material (which was able to pass through the small bowel) should lodge in the caecum and colon where the lumen is greater and cause obstruction there. It is possible that absorption of water in the right colon (which is a physiological function) resulted in a tenacious combination of faecal material and Vaseline which proved too much for the bowel peristalsis.

Although not applicable in this particular case because the overt signs of obstruction with peritonism warranted urgent laparotomy, hyperosmolar contrast enema may be used to relieve intraluminal obstruction and should be considered so that laparotomy might be avoided.

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Figure Abdominal radiograph showing dilated loops of small bowel with opaque masses in caecum and right colon.
Intestinal obstruction due to ingested Vaseline.

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