PERFORATION OF INTESTINE BY SWALLOWED FOREIGN BODY

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Appendicitis is the commonest source of pain and tenderness in the right iliac fossa, but there are other conditions which may bear such a close resemblance to appendicitis that the correct diagnosis can only be made by exploratory laparotomy. One atypical condition is that of a foreign body lodged in the ileo-caecal region.

The ingestion of sharp, indigestible substances is not an uncommon happening, and in the majority of instances the foreign body proceeds uneventfully through the intestinal tract and is passed per rectum without the patient's knowledge. Carp (1927) stated that 17 per cent. of swallowed foreign bodies become lodged in the intestinal canal giving rise to symptoms.

The object of this paper is to report two cases of lodgment of foreign bodies in the ileo-caecal region, causing symptoms, and briefly to review the existing literature on the subject.

Case 1

A lady of 70 was admitted for pain in the abdomen and vomiting of two days' duration. On being questioned about the pain she said that it had originated in the right iliac fossa and remained stationary. Examination disclosed guarding and tenderness here. On rectal examination there was tenderness but no bulging in the Pouch of Douglas.

A diagnosis of acute appendicitis was made and a laparotomy performed.

Operation

A right sub-umbilical paramedian incision was made. On opening the peritoneum, a little turbid fluid escaped. The caecum and appendix were inspected, the appendix was small, fibrosed and non-pathological. On exploring the pelvis more fluid was found. On examination of the small bowel 6 in. from the ileo-caecal junction, a sharp spike was seen projecting $\frac{1}{4}$ in. out of the gut wall near the mesenteric attachment. Deposits of fibrin were seen around it. The object was extracted and the puncture hole, then almost

invisible, was closed. Examination of the mesentery in that area revealed a tear $\frac{1}{2}$ in. in length, 2 in. above the point from which the foreign body was removed.

The wound was closed without drainage and the patient treated with antibiotics. She made an uneventful recovery. On questioning her later, she explained that she had no recollection of having swallowed the foreign body.

The specimen recovered was 1 in. in length, smooth, with two pointed ends. The pathologist was of the opinion that it was a piece of 'beef bone.'

Case 2

A lady of 56 reported to the out-patients department complaining of dragging pain in the right iliac fossa of one year's duration. There had been no loss of appetite or of weight. She gave a history of constipation, but there was no recent change in the bowel habit.

On examination there was a vague, tender lump in the right iliac fossa. Rectal examination was normal. A probable diagnosis of carcinoma caecum was made and a barium enema ordered.

Barium enema report was as follows: 'During the filling of the large gut the caecum could not be filled and the appendix was not seen. On re-examination after evacuation the caecum and appendix were outlined. There was no filling defect, but the lumen of the caecum appeared narrow and tapering.'

Stool examination revealed no occult blood and the blood picture was normal.

In the light of this doubtful diagnosis, an exploratory laparotomy was advised and performed.

Operation

A right paramedian incision was made. On opening the peritoneum adhesions were found in the right iliac fossa. These adhesions were divided, and the caecum palpated. It felt thickened, the thickening being limited to the

base of the appendix and $\frac{1}{2}$ in. around the appendico-caecal junction. Appendix and the thickened portion of caecum were removed, and the opening in the caecum closed up in two layers.

On opening the removed piece of caecum and appendix a fish bone was seen buried in the mucous membrane and covered with granulation tissue.

The patient was given antibiotics in the post-operative period and made an uneventful recovery. On questioning her later she, likewise, had no recollection of having swallowed the fish bone.

Discussion

Various types of foreign bodies may give rise to perforation, but the commonest agents responsible are the sharp metallic bodies, tooth picks, broom bristles, wood splinters, and, rather more rarely, bones of various kinds such as fish, chicken, beef and rabbit bones. When a perforation occurs due to a metallic foreign body, a pre-operative diagnosis is possible, but in cases where other types of foreign bodies are responsible the diagnosis is only possible at operation.

Foreign bodies can lodge in the stomach, duodenum, colon, rectum and even in the Meckel's diverticulum, but by far the commonest site is the ileo-caecal region. Why the ileo-caecal region should be more frequently involved than other sites is not known with certainty, but the following factors may be responsible: firstly, as the terminal ileum is the narrowest part of the small gut the foreign body is frequently held up there. A second determining factor may be the peristalsis which in the terminal ileum are infrequent but may become violent, due to gastro-ileal reflex (Samson Wright, 1952). Thirdly, there is a normal hold-up of the ileal contents until the ileo-caecal valve opens. Any irritation in this area precipitates a spasm of the ileo-caecal valve, causing a further damning back of the ileal contents (Guyton, 1956). Lastly, the change in the consistency of the ileal contents which originates in the ileo-caecal region may be a contributory factor.

Macmanus (1941) in an interesting paper reviewed 93 cases and added two of his own, and came to the conclusion that these cases of foreign bodies may assume the form of localized peritonitis, an indurated tumour, an abscess, general peritonitis, or, as in one case, haemorrhage. Of the two cases described in this paper, one presented as peritonitis and the other as an indurated tumour.

Another fact that emerges from Macmanus's paper is the duration of symptoms. In 60 per cent. of the patients the symptoms ranged from

three hours to two weeks, and in 40 per cent. it was two weeks to 12 years. In the two cases reported above the duration was two days and one year.

In most of the cases reported in literature on the subject, the foreign body is noted as having been swallowed without the patient's knowledge. Snodgrass (1947) attributes this to the loss of touch sensation of the palate caused by the wearing of dentures. The two patients reported above had no recollection of having swallowed the foreign bodies, but both of them, it is instructive to note, wore dentures during meals.

Recently attempts have been made to encourage non-operative treatment for acute appendicitis. The first case reported above demonstrates the risks involved by such a procedure.

Up to 1900 the mortality rate of perforations due to foreign bodies was 50 per cent., and by 1940 the death-rate had fallen to 10 per cent. This last figure coincides with 11.5 per cent. mortality in general peritonitis of Carry, Brewer and Neal (1939). With the introduction of antibiotics and fluid therapy the death-rate in cases of general peritonitis has fallen still further to 7.69 per cent. (Wright *et al.*). The overall mortality due to ingestion of foreign bodies today should be around 5 to 7 per cent.

Summary

Two cases of ingested foreign bodies causing intra-abdominal mischief are reported.

It is invariably rewarding to search for a foreign body during a laparotomy on a case of acute abdomen where no other abnormality can be found to explain the origin of peritonitis.

Furthermore it is suggested that the possibility of a 'foreign body granuloma' be remembered in the differential diagnosis of any lump in the right iliac fossa where investigations have hitherto proved indefinite.

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