PERFORATION OF MECKEL’S DIVERTICULUM
BY FOREIGN BODIES

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The persistence of a part of the vitello-intestinal duct as a solitary diverticulum of the ileum was described by Ruysh in 1701, but is eponymously linked with the name of Johann Frederick Meckel, who in 1812 first described it accurately. Many complications of surgical importance due to the presence of a Meckel’s diverticulum have been described and commented on; one which has received comparatively little attention, perhaps owing to its rarity, is that of perforation by a foreign body.

The purpose of this report is to record a further case of this occurrence, and to present a bibliography of the other 49 cases which can be found in the world literature.

Case Report
Mrs. E.T., a married woman, aged 28, was admitted complaining of pain in the right iliac fossa for the previous 13 hours, which was increasing in severity. The pain was constant and had not radiated. She had not vomited and had no bowel disturbance. Micturition was normal, as was her menstrual history.

On examination: T. 98.6°F, P. 88, B.P. 120/80 mm. Hg. Her tongue was furry and there was fetor oris. Abdominal examination revealed tenderness around McBurney’s point with guarding but no rigidity. Bowel sounds were normal. Rectal examination was negative. Her urine contained no albumin.

A diagnosis of acute appendicitis was made.
At operation, through a gridiron incision, a normal appendix was found. However, as a finger was passed up on the left of the ascending colon a sharp "pin-like" object was felt. This was seized with a haemostat and found to be a "bristle". Further examination revealed a broad-based Meckel’s diverticulum with a small perforation at its tip. In the lumen could be felt another "bristle", the tip of which was already beginning to perforate.

The diverticulum was excised, the appendix removed and the abdominal cavity closed with drainage of the peritoneum.

The patient made an uninterrupted recovery, receiving post-operative chemotherapy with penicillin and streptomycin.

Pathological examination (Dr. J. Scott-Wilson) revealed
1. a normal appendix.
2. a Meckel’s diverticulum showing normal mucosa with a small perforation.
3. the "bristles" were fishbones.

The patient denied any particular predilection for fish, and, indeed, could not remember when she had last eaten fish.

Comment
This case follows the common pattern of previous cases in that a pre-operative diagnosis of acute appendicitis was made, only to be disproved at operation. Only when a clear history of a recently swallowed foreign body is given, is it even possible to suspect this condition; and in only two cases in the literature was such a diagnosis made (Fontaine & Bauer (1933); Persson (1939)).

This case also follows the pattern described by Seibert (1950) and Persson (1939) in that symptoms of perforation and peritonitis were mild, although sudden and severe abdominal symptoms have been reported. Perhaps the mildness of the symptoms may be related to the fineness of the perforating object—in over half the cases a fishbone.

Meckel’s diverticulum has an incidence of 1-2% of the population, with a ratio of three males to one female. It is perhaps surprising, therefore, that more cases of perforation have not been recorded. The previous reviews by Alhadeff (1955) and Dowse (1961) recorded a total of 30 cases, however neither mentioned any reports earlier than 1899. It is interesting to note that the cases recorded by Denunce (to whom priority belongs, and who saw the case in 1847) and Beale (1852—the first report in the English literature) were both cases in which the foreign body was a cherrystone.

The variety of foreign bodies causing perforation is at first sight extensive, but considering the wide range of foreign bodies swallowed it is perhaps surprising that more of them have not caused perforation. Fishbones caused the perforation in 55% of the reported cases. What is more surprising is that objects such as rolled tomato skins and cabbage stalks can cause perforation. In all 29 objects of animal, 15 of vegetable and five of mineral origin caused perforation.

The sex incidence was 14 female and 35 male, with six cases younger than 10 years and three older than 70. There were only two deaths in the cases reported since 1900.

Addendum
Since the compilation of this report another case, making the fiftieth in the literature, has been reported from Australia. The patient was a twelve year old boy in whom the perforation was caused by the "bristle" of a nylon tooth-brush.
SUMMARY OF CASES

1. 1851 Denunce Male  ? Cherrystone Post-mortem, no operation
2. 1852 Beale Male 14 Cherrystone Post-mortem, no operation
3. 1899 Blanc Male 41 Fishbone Post-mortem, no operation
4. 1900 Piquard and Grenet Female 45 Fishbone Recovered after operation
5. 1909 Aschan Male 42 Fishbone Post-mortem, no operation
6. 1912 Schwenk and Pollnow Female 21 Gramophone needle Recovered after operation
7. 1920 Hagler and Stewart Male 39 Fishbone Died after operation
8. 1921 Henrichsen Male 25 Fishbone Recovered after operation
9. 1926 Lindquist Male 21 Wood splinter Recovered after operation
10. 1927 Berry Male 36 Fishbone
11. 1931 Walking Male 8 Fishbone
12. 1832 Wilcox Male 71 Fishbone
13. 1933 Hiller and Bernhard Male 41 Tomato skin
14. 1933 Bock Male 7 Needle
15. 1933 Webb Female 15 Fishbone
16. 1933 Fontaine and Bauer Female 19 Knitting needle
17. 1937 Donovan Male 11 Wood splinter
18. 1937 Peterson Female 15 Fishbone
19. 1939 Persson Male 75 Fishbone
20. 1939 Persson Male 21 Fishbone
21. 1939 Persson Male 18 Wood splinter
22. 1940 Williams Male 62 Fishbone
23. 1940 Tamraz Male 49 Fishbone
24. 1942 Aguirre Silva Male 32 Chicken bone
25. 1942 Weinstein Male 54 Fishbone
26. 1943 Rossman Male 17 Fishbone
27. 1948 Macfarlane Female 21 Cabbage stalk
28. 1950 Seibert Male 14 Fishbone
29. 1950 Ward-McQuaid Male 60 Tomato skin
30. 1951 Mastrostine Female 14 Ascaris
31. 1951 Whelan Male 70 Fishbone
32. 1951 Blomquist Female 37 Fishbone
33. 1954 Longo and Broggi Male 32 Artichoke spine
34. 1954 Alhadoff Male 24 Wood splinter
35. 1955 John Male 10 Pin
36. 1956 Chorzewski Female 27 Fishbone
37. 1956 Rawlinson Male 57 Fishbone
38. 1956 Bernatz Male 52 Fishbone
39. 1957 Gillette & Zoltowski Female 35 Fishbone
40. 1958 Reinalda Female 42 Fishbone
41. 1958 Rumore Male 41 Fishbone
42. 1959 Komarow Male 17 Grape seeds
43. 1960 Principle Male 9 Prune stone
44. 1961 Dowse Female 60 Fishbone
45. 1961 Dowse Male 9 Tomato skin
46. 1961 Ashe Female 34 Wood splinter
47. 1962 Ker Male Adult Fishbone
48. 1963 Roesell Male 1 Fishbone
49. 1964 Binks Male 12 Fishbone
50. 1965 Roswick Female 28 Fishbone

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REFERENCES


SPONTANEOUS NECROSIS OF THE GALL BLADDER

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Rupture of the gall bladder is not an uncommon phenomenon usually associated with gangrene following acute calculous cholecystitis. Cases have been reported following non-calculous cholecystitis (Maingot, 1957) and there are other isolated cases of rarer causes.

Case Report
A male, aged 58, presented with a history of bleeding per rectum for six months. Routine sigmoidoscopy showed a carcinoma 11 cm. from the anus, confirmed by histological examination.

On 7th January, 1964 laparotomy showed a mobile carcinoma of the rectum with no obvious metastases. The gall bladder and other abdominal viscera were normal. A routine abdomino-perineal excision of the rectum was performed and his immediate recovery was satisfactory. On the ninth post-operative day pus was drained from his wound which had become inflamed and three days later he developed general peritonitis. Laparotomy showed a biliary peritonitis, there being about a pint of free bile in the abdomen. A large swelling was found in the right upper abdomen consisting of omentum wrapped round the gall bladder. On freeing the omentum, the gall bladder was found to be deeply bile stained and black at the fundus and there was a little bile
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