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 Ruysch 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 furred 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 hemostat 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  Recovered after operation
4. 1900 Piquard and Grenet  Female  45  Gramophone needle  Post-mortem, no operation
5. 1909 Aschan  Male  42  Fishbone  Recovered after operation
6. 1912 Schwenk and Pollnow  Female  21  Gramophone needle  Died after operation
7. 1920 Hagler and Stewart  Male  39  Fishbone  Recovered after operation
8. 1921 Henrichsen  Male  25  Wood splinter  Post-mortem, no operation
9. 1926 Lindquist  Male  21  Wood splinter  Recovered after operation
10. 1927 Berry  Male  36  Fishbone  Post-mortem, no operation
11. 1931 Walkling  Male  8  Fishbone  Recovered after operation
12. 1832 Wilcox  Male  71  Tomato skin  Post-mortem, no operation
13. 1933 Hiller and Bernhard  Male  41  Needle  Recovered after operation
14. 1933 Bock  Male  7  Fishbone  Recovered after operation
15. 1933 Webb  Female  15  Fishbone  Recovered after operation
16. 1933 Fontaine and Bauer  Female  19  Knitting needle  Post-mortem, no operation
17. 1937 Donovan  Male  11  Wood splinter  Recovered after operation
18. 1937 Peterson  Female  15  Fishbone  Recovered after operation
19. 1939 Persson  Male  75  Fishbone  Recovered after operation
20. 1939 Persson  Male  21  Fishbone  Recovered after operation
21. 1939 Persson  Male  18  Fishbone  Recovered after operation
22. 1940 Williams  Male  62  Fishbone  Recovered after operation
23. 1940 Tamraz  Male  49  Fishbone  Recovered after operation
24. 1942 Aguirre Silva  Male  32  Chicken bone  Recovered after operation
25. 1942 Weinstein  Male  54  Fishbone  Recovered after operation
26. 1943 Rossman  Male  17  Fishbone  Recovered after operation
27. 1948 Macfarlane  Female  21  Cabbage stalk  Recovered after operation
28. 1950 Seibert  Male  14  Fishbone  Recovered after operation
29. 1950 Ward-McQuaid  Male  60  Tomato skin  Recovered after operation
30. 1951 Mastrosimone  Female  14  Asearis  Recovered after operation
31. 1951 Whelan  Male  70  Fishbone  Recovered after operation
32. 1951 Blomquist  Female  37  Fishbone  Recovered after operation
33. 1954 Longo and Broggi  Male  32  Artichoke spine  Recovered after operation
34. 1955 Alhadeff  Male  24  Wood splinter  Recovered after operation
35. 1955 John  Male  10  Pin  Recovered after operation
36. 1956 Chorzewski  Female  27  Fishbone  Recovered after operation
37. 1956 Rawlinson  Male  57  Fishbone  Recovered after operation
38. 1956 Bernatz  Male  52  Fishbone  Recovered after operation
39. 1957 Gillette & Zoltowski  Female  35  Fishbone  Recovered after operation
40. 1958 Reinalda  Female  42  Fishbone  Recovered after operation
41. 1958 Rumore  Male  41  Fishbone  Recovered after operation
42. 1959 Komarov  Male  17  Grape seeds  Recovered after operation
43. 1960 Principle  Male  9  Prune stone  Recovered after operation
44. 1961 Dowse  Female  60  Fishbone  Recovered after operation
45. 1961 Dowse  Male  9  Tomato skin  Recovered after operation
46. 1961 Ashe  Female  34  Wood splinter  Recovered after operation
47. 1962 Ker  Male  Adult  Fishbone  Recovered after operation
48. 1963 Roesell  Male  1½ Liberty bell  Recovered after operation
49. 1964 Binks  Male  12  Fishbone  Recovered after operation
50. 1965 Roswick  Female  28  Fishbone  Recovered after operation

I am indebted to Mr. A. J. Walton for kind permission to publish this case and to Professor V. W. Dix for advice and encouragement.

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 calculus cholecystitis. Cases have been reported following non-calculus 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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Postgrad Med J 1965 41: 105-107
doi: 10.1136/pgmj.41.472.105

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