

## A CASE REPORT OF SOLITARY CAECAL DIVERTICULUM PRESENTING WITH MELAEANA \*

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**A case of solitary caecal diverticulum presenting with melaena is described and the relevant literature reviewed. The role of diverticular disease in the differential diagnosis of melaena is discussed.**

An extensive review of the literature has shown that cases of solitary caecal diverticulum presenting with melaena are rare. We could trace only 4 reported cases in the literature while another 7 patients had bleeding from caecal diverticula associated with other diverticula.

Gilmour and Hadley (1958) reported 3 cases of uninflamed solitary diverticula of the caecum diagnosed on barium enema, one of which had persistent rectal bleeding and presented initially with a haemoglobin of 32 per cent. Wagner and Zollinger (1961) described a case of solitary caecal diverticulitis which was not operated on but was believed to be the site of bleeding. Nicholas *et al.* (1962) found that 4 out of 25 cases of acute caecal diverticulitis reviewed had painless melaena, only one case having a solitary caecal diverticulum: they did not trace any case report of massive haemorrhage from a solitary caecal diverticulum. Milburn (1963) reported a case of caecal diverticulum associated with diverticulum in the ascending colon. This patient, a 64 year old woman presented with fresh rectal bleeding and dull pain in the right lower quadrant. Taylor (1966) described a

case of solitary caecal diverticulitis presenting with massive rectal bleeding. Wollaeger *et al.* (1966) reported a case of a 46 year old woman with persistent gross melaena who at operation was found to have multiple caecal diverticula, the bleeding coming from a single inflamed diverticulum in which a spurting vessel could be identified. Bahabozorgui *et al.* (1968) reported a case with acute multiple diverticulitis of the caecum associated with diverticula in the ascending colon, terminal ileum and appendix who passed bright red blood per rectum and had persistent occult blood in the faeces. Maier *et al.* (1968) reported 2 cases of multiple caecal diverticula associated with massive haemorrhage; one of these patients was 37 years old, the youngest in the literature to present with this complication.

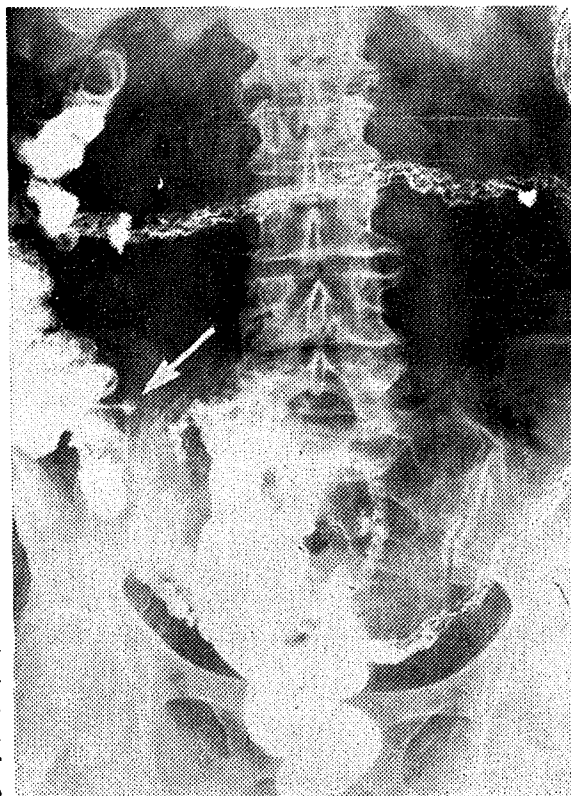
### Case report

The patient, Mrs. G.A., was born in a village where she spent most of her life, living on a small farm. She was an obese woman who had had 5 children.

She was first admitted to hospital in 1959 at the age of 73, with fairly severe painless melaena. She was investigated radiologically by barium meal and barium enema which were negative. An exploratory laparotomy was therefore carried out but this again gave no indication as to the cause of bleeding. The patient had been suffering from hypertension for the previous 14 years and had been treated rather unsuccessfully with various antihypertensive drugs; the cause of the melaena was attributed to the hypertension.

She was subsequently readmitted for melaena on 6 occasions, the blood sometimes being bright red in colour, at other times altered in appearance. The episodes of melaena recurred at variable intervals of 3 months to 4 years. In between these episodes of fairly profuse melaena, the stools were usually normal in colour and were noted to be dark only on one occasion. Abdominal symptoms, however, usually persisted, the patient often complaining of occasional discomfort in the lower abdomen, vague abdominal pain, fullness after meals, nausea and anorexia.

Her blood pressure remained persistently high, the systolic usually above 200 mm. Hg. (the lowest recorded being 190 mm. Hg., with the diastolic around 120-140 mm. Hg. After a heavy haemorrhage it often fell to 80-100 mm. Hg., though there was never any sign of clinical shock). Her haemoglobin level often fell alarmingly, the lowest value recorded being 7.1 g. (26.9.60). She developed thrombocytopenic purpura in 1962, her platelet count on one occasion falling to 30,200/c. mm. Blood transfusion was given on 2 occasions to counteract anaemia, and various haematinics were administered during the course of her disease. During episodes of melaena, thrombocythin, Vit. K, Ca. gluconate and Vit. C were also administered. Her hypertension and anaemia often caused clinical symptoms, namely tiredness, dizziness, headaches and malaise.



Throughout the course of her illness, several radiological investigations were carried out. A solitary caecal diverticulum was first detected by barium enema on 7.12.61 and confirmed on 2 other occasions. (Fig. 1) Sigmoidoscopy was carried out on 2 occasions with negative results.

**Table I**  
**Incidence of Solitary Caecal Diverticula**

<i>Author</i>		<i>% Incidence</i>	<i>No. of cases</i>	<i>Remarks</i>
Fifield	(1927)	0%	10,167	Postmortems.
Van Meter and Floyd	(1951)	0%	314,469	Hospital admissions.
Case and Shea	(1953)	2%		Diverticular disease patients.
Lloyd Williams	(1960)	0%	3,560	Barium enemas.
Williams	(1960)	0.1%		Barium enemas.
Miangolarra	(1961)	1.5%	738	Solitary caecal diverticulitis in colonic diverticulosis patients.
Hughes	(1969)	2.5%	200	Postmortems.
Podestà and Pace	(1973)	0.07%	1,346	Barium enemas.

The last episode of melaena occurred in 1968; this was the only occasion when there were any clinical indications of the true site of the lesion as some resistance in the right lower quadrant was detected.

The patient died of cerebral thrombosis in 1970 at the age of 84.

### Discussion

Solitary diverticulum of the caecum is a rare occurrence (Table I). The average age incidence of the condition is lower than that of diverticular disease of the sigmoid, though the age of most patients who have bleeding from the condition is above 60 years. Wagner and Zollinger (1961) found that the average age of 318 patients with diverticulitis of the caecum and ascending colon was 41.4 years. The condition occurs with equal frequency in males and females, in contrast to the predominance of males when the condition affects the sigmoid. The location of diverticula in the caecum has interested several investigators. Lauridsen and Ross (1952) stated that 78.8 per cent of caecal diverticula are located within an area taken from 2 cm. above the ileocaecal valve to 1 cm. below it. Wagner and Zollinger (1961) were able to locate the site of the right-sided colonic diverticulum in their review of 188 cases. They found that 52.1 per cent were anterior, 14.8 per cent were posterior, 14.3 per cent were lateral, 6.6 per cent were medial and 12.0 per cent were in the ascending colon.

Solitary diverticula of the caecum should not be confused with multiple diverticulitis which may involve the caecum and ascending colon. Some (Unger, 1953) state that it is usual to find a single diverticulum in the caecum with diverticula in other parts of the colon being almost never found coincidentally, while other (Case and Shea, 1953) believe that diverticula rarely occur in the caecum alone but that other parts of the colon are usually involved as well.

Haemorrhage is a proved though relatively rare complication of diverticular disease of the colon. The only investigation on the incidence of bleeding

from caecal diverticula that could be traced in the literature is that of Nicholas (1961) who found that in 24 cases of diverticula of the caecum with no diverticula elsewhere, 15 per cent came in with bleeding. Miangolarra (1961) found that of 109 patients with right and left-sided colonic involvement, 34 (31 per cent) had gross bleeding per rectum. Among the 94 patients with diverticula limited to the right side of the colon, the incidence of haemorrhage was 47 per cent.

Diverticula of the caecum are one of the causes of melaena and must be considered in the differential diagnosis of rectal bleeding. Though caecal diverticular haemorrhage is rare, it should be kept in mind in any person presenting with colonic haemorrhage (Maier *et al.*, 1968). On the other hand, because the condition is rare, a diagnosis of diverticulitis as opposed to carcinoma should be made with extreme care and only by exclusion. Even if diverticular disease is proved to be present, other possible causes of haemorrhage may be concomitantly present with it. One should think of diverticula of the caecum as the cause of bleeding only where one can find no other apparent cause (Nicholas, 1961).

Hypertension is said to predispose to bleeding (Clements, 1960; Olsen, 1968) and an aetiological link of bleeding in diverticular disease with hypertension has been confirmed (Hoar and Bernhard, 1954; Weingarten *et al.*, 1959; Heald and Ray, 1972). Hypertensive cardiovascular disease was found to be present in 57 per cent of cases of diverticular disease associated with haemorrhage (Earley, 1959). Patients who bleed from caecal diverticula are in fact usually middle aged or elderly people with arteriosclerosis and hypertension.

Bleeding from diverticular disease of the colon is usually moderate in amount, massive haemorrhage being relatively rare; when massive haemorrhage does occur it is characteristically sudden, unexpected and alarmingly profuse from the onset, terminating abruptly and often followed by long periods of freedom from blood loss. Massive

haemorrhage is often the only symptom present whereas lesser degrees of bleeding are often associated with other manifestations (as abdominal pain, tenderness, fever, etc.). Patients with massive bleeding usually have only diverticulosis with no evidence of diverticulitis on X-Ray, and it is important to recognise that diverticulosis alone may cause bleeding (Rosser, 1955). Bleeding from carcinoma is invariably slight and usually continuous, so that sudden profuse haemorrhage occurring in a middle aged or elderly person is almost pathognomonic of diverticular disease (Dunning, 1963).

That haemorrhage may occur from diverticula in the absence of gross inflammation is accepted by most surgeons (Wollaeger *et al.*, 1966). The relationship of perforating arteries to the points of extrusion of diverticula has been established (Drummond, 1916; Noer, 1955) and bleeding is usually due to mechanical, pressure or traumatic erosion of the vessels as from ulceration of the mucosa caused by a faecolith (Gilmour and Hadley, 1958) or to necrosis of the mucosa by an inflammatory process. Wollaeger *et al.* (1966) feel that bleeding is usually associated with some degree of inflammation even if mild, and the massive bleeding of diverticulosis is difficult to explain without postulating some inflammatory change, however slight and narrowly defined (Fraenkel, 1954).

In most cases the source of bleeding from diverticula is never found at operation (a fact which should make us view the attribution of bleeding to diverticular disease a little cautiously [Hoare, 1970]). Most surgeons can recall cases of massive large bowel haemorrhage with negative sigmoidoscopy and barium enema and no cause of bleeding found at operation (Kunath, 1956). There are, however, a few instances in the literature where the offending diverticulum was seen to be bleeding at operation (Maynard and Vorhees, 1956; Weingarten *et al.*, 1959; Salgado *et al.*, 1961), or at sigmoidoscopy (Smith, 1951), or where the specimen showed histological signs of bleeding (Rigg and Ewing, 1966).

The case reported here conforms to the group with which haemorrhage as a complication of diverticular disease is usually associated, viz. elderly people over 60 with hypertension. As often happens in diverticulosis as distinct from diverticulitis, the bleeding was sudden and unexpected, massive and persistent, and terminated abruptly. The melaena was initially painless and it was only later, when the bleeding became less severe, that there was slight abdominal discomfort and tenderness in the right iliac fossa. Barium enema showed that there was a solitary uninflamed diverticulum — a fingertip-like projection terminating in a bulbous expansion on the medial wall of the caecum. No other pathological condition could be detected clinically, radiologically, by sigmoidoscopy or at laparotomy so that the solitary diverticulum of the caecum could be held responsible for the manifestations with a large degree of certainty.

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