DIAGNOSTIC DIFFICULTIES IN FOUR CASES OF MASSIVE BLEEDING PER RECTUM

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Gastro-intestinal haemorrhage is a common medical problem. A severe haemorrhage is usually followed by melaena. Severe bleeding from the upper gastro-intestinal tract usually provokes vomiting so that haematemesis is followed by melaena. The causes and management of severe upper gastro-intestinal bleeding are well presented in standard gastroenterological textbooks (Truelove and Reynell, 1963; Jones and Gummer, 1960). Massive bleeding per rectum is usually due to a lesion in the lower intestinal tract. There are few accounts of the problem of massive bleeding per rectum (Palmer, 1957; Ross, 1967). The diagnosis and management of massive haemorrhage per rectum may be difficult and delayed as the following cases illustrate.

REPORT OF CASES

Case 1

A 30 year old Greek seaman who was previously well, began to pass haemorrhagic stools in early December 1966. He was thought to have ulcerative colitis. His stools were always well formed and not loose. Haemorrhage ceased after a few days but in late December 1966 he had another severe bleed of obvious arterial blood. He was examined by a surgeon and sigmoidoscopy showed no abnormality. He had a laparotomy: no evident source of bleeding was found. In mid January 1967 he had a severe recurrence of bloody stools and he was given a total of 36 pints of blood transfusion.

He was seen by the senior author (G.A.R.) at this time. The stools were well formed and the blood on the stools was fresh arterial blood. On pouring the bloody stools into water and stirring, blood casts from an arteriole (or perhaps something bigger) could be seen. The blood urea and erythrocyte sedimentation rate were normal. Because the stools were well formed, it was concluded that the bleeding must be coming from low down the large gut. On palpation of the abdomen, he was tender over the sigmoid colon. It was thought that there might be an ulcerative diverticulum involving an artery on the mesenteric side of the lower bowel.

He was subjected to a second laparatomy (performed by Professor G.S. Yeoh). The whole of the large gut muscoa was examined by inserting the sigmoidoscope through incisions of the large gut; no abnormality was found. Through some intuition, the surgeon manually dilated the rectum at the end of the operation. He then found a "squirtter" at the base of an internal haemorrhoid. A haemorroidectomy was done and the patient made an uneventful recovery.

Case 2

A middle aged Frenchman of phlethoric habitus was sent to see the senior author (G.A.R.) from Saigon, South Vietnam because he was thought to have ulcerative colitis. He gave a history of passing fresh blood with his stools and occasionally without stools. The blood was again arterial. A Lockhart-Mummery protoscope was passed but no cause of bleeding could be found. He was then sigmoidoscoped and the mucosa up the valve of Houston was found to be normal. In hospital he bled several times and after 10 days a surgeon (Mr. H.M. McGladdery) saw him. The surgeon passed a fenestrated protoscope and identified a bleeding internal haemorrhoid. This was operated on and the patient recovered.

Case 3

R.B.M., a 12 year old Malay schoolgirl, presented with a 5 day history of slight epigastric pain and passing of well formed stools coated with fresh blood 3-4 times daily. There was no mucus on the stools. There was no

haematemesis. Low grade fever set in on the day of admission.

On examination, there was marked anaemia and a fever of 100°F. The pulse was 100/min. and the blood pressure was 100/70. The heart and lungs were normal. The abdomen was soft and the liver and spleen were not palpable. Per rectal examination revealed well formed black stools coated with red blood.

Investigations revealed a haemoglobin of 4.8 Gm.% and the total white cell count was 19,000/cu. mm. Two day after admission the blood urea was 20 mg.%; 5 days later it was 30 mg.%. The X-ray of the chest and abdomen were normal. The Widal and Weil-Felix tests were negative. Stool examination and culture were negative for amoeba, salmonella and shigella organisms. A bout of stools was placed in a pail of water and stirred. Casts of arterioles were seen floating—this indicated that the bleeding was from arterioles. Spectroscopy of the blood showed that it was oxygenated haemoglobin; this indicated that the bleeding was from arterioles rather than venules.

Over the next 7 days her temperature swang between 99°-103°F; and she had massive bleeding of fresh blood per rectum (estimated volume: 7 litres). She was treated with antibiotics and hydrocortisone with no response. Altogether she was transfused with 14 pints of blood.

On the 7th day of admission a laparotomy was done (by Mr. J.J. Murugasu). At laparotomy the bleeding was found to be from a Meckel's Diverticulum situated 2 feet from the ileo-caecal valve. (Fig. 1). A diverticulectomy was performed and the patient made an uneventful recovery. Microscopic examination of the Meckel's Diverticulum showed that it was lined with gastric mucosa; heterotopic pancreatic tissue was found in the underlying muscular layer (Dr. K. Sugai).

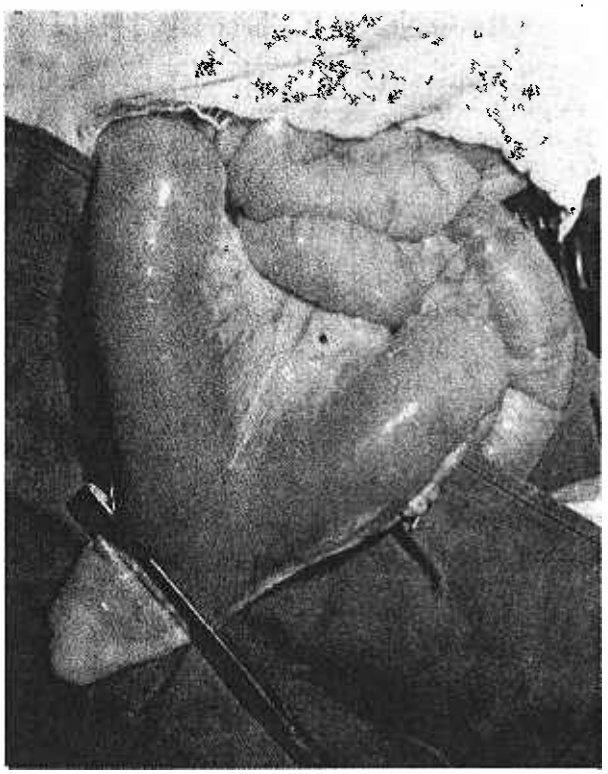

Fig. 1. Case 3. Meckel's Diverticulum at laparotomy.

Case 4

O.B.H., a 17 year old Chinese schoolboy, presented with a history of diarrhoea with loose and bloody stools, loss of weight and fever of 2 months duration and jaundice for 1 month.

On clinical examination he was ill, febrile (99°F) and wasted with slight jaundice. The abdomen was distended and the liver was enlarged to 4 finger breadths below the right costal margin and the spleen to 3 finger breadths below the left costal margin. Other systems were normal.

Investigations showed a haemoglobin of 80%; total white count 5800/cu. mm.; platelets 195,000/cu. mm.; altered liver functions (serum bilirubin 2 mg.%, alkaline phosphatase 78 King-Armstrong units, serum glutamic pyruvate transaminase 400 King's units) which later returned to normal; persistently raised erythrocyte sedimentation rate (20 to 87 mm./hour); reversal of serum albumin and globulin ratio and raised gamma globulin (albumin: 2.9 Gm.%, alpha$_1$ globulin: 0.4 Gm.%, alpha-2 globulin: 0.4 Gm.%, beta globulin: 0.9 Gm.% and gamma globulin: 2.3 Gm.%). All other investigations were negative: these included lupus erythematosus cells in blood; urine microscopy and culture; stools microscopy and culture for amoeba, shigella and salmonella organisms; Mantoux test (1:100); X-ray of the chest and abdomen; Brucella agglutination and Paul-Bunnel tests; liver biopsy; sigmoidoscopy and barium enema.

He continued to have swinging temperature (up to 105°F) and massive bleeding of fresh blood per rectum. The blood urea was 26 mg.% during this period. He was treated with prednisolone, antibiotics and anti-tuberculous drugs and massive blood transfusions. The bleeding episodes persisted; during which the platelet count fell to as low as 35,000/cu. mm.

A laparotomy (by Mr. J.J. Murugasu) performed one month after admission showed that the mesenteric lymph nodes were enlarged to thumb-size, the caecum was hyperaemic, the liver and spleen were enlarged and the small gut,

colon and gall bladder were normal. Lymph node and liver biopsy at laparotomy showed non-specific inflammation.

His fever and bleeding per rectum continued in spite of antibiotics, prednisolone and anti-tuberculous drug therapy. A second laparotomy was done 8 months after the first laparotomy. The findings at this laparotomy resembled those in the first one except that the caecum and ascending colon looked more "diseased". A right hemicolectomy was done. Biopsy of a mesenteric lymph node and liver again revealed non-specific inflammation. The resected caecum showed six ulcers (1.5 cm. by 1 cm.); the histology of the caecum showed haemangiomata (Fig. 2).

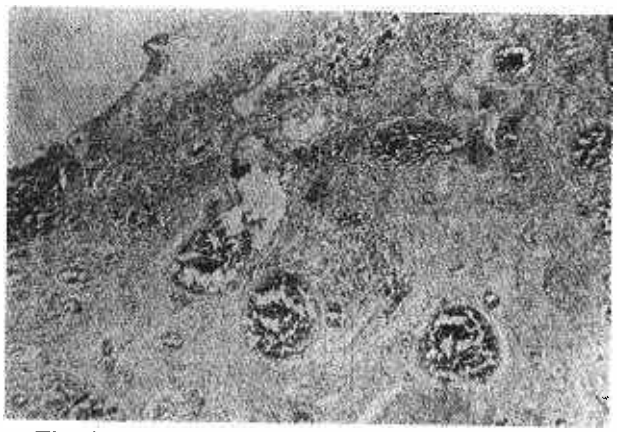

Fig. 2. Case 4. Haemangioma of the caecum. H. & E. × 100.

After the operation, the bleeding per rectum stopped but 3 weeks later it recurred profusely and he died 1 week later (i.e.13 months after the onset of his illness). He received a total of 35 litres of blood transfusion. Throughout his illness, his blood urea was normal (12 to 26 mg. %).

At necropsy, the brain, heart, lungs and kidneys were normal. There was ulceration and haemorrhage at the ileo-colonic anastomotic junction. The liver was enlarged and weighed 1960 Gms. and the histology showed acute-on-chronic cholangitis approaching cirrhosis. The spleen weighed 310 Gms. and microscopy revealed increased monomuclear cells in the sinuses with thickened pulp reticulum (Dr. K. Sugai).

In this boy the bleeding per rectum was due to caecal ulceration and haemangiomata initially and following hemicolectomy the bleeding was due to anastomotic ulceration. The cause of his fever, hepatosplenomegaly and mesenteric lymphadenopathy remains undetermined.

DISCUSSION

In severe upper gastro-intestinal haemorrhage, haematemesis is usually followed by melaena, but melaena may be present without haematemesis or vice-versa depending on the rate of bleeding and the motility of the gut. Fatal gastro-intestinal haemorrhage has been reported without haematemesis or melaena (Lowe and Palmer, 1968). Melaena may also be due to bleeding from the lower intestinal tract. A blood urea determination is useful in determining whether melaena is due to upper or lower intestinal bleeding; azotaemia occurs irrespective of the cause of bleeding into the upper digestive tract but does not occur in haemorrhage from the colon. Sanquinetti (1933) first observed that the blood urea was elevated in bleeding peptic ulcer. Schiff, Stevens and Moss (1942) reported a rise of the blood urea to 30 mg.% or more in about two-thirds, and to 50 mg.% or more in one-fifth of 135 cases of bleeding from the upper gastrointestinal tract. Following a single non-fatal haemorrhage, the blood urea may increase within a few hours, usually reaches a maximum within 24 hours and drops sharply to normal by the third day. The degree of azotaemia is determined by the amount of blood entering the small intestine in a given period of time. (Schiff and Stevens, 1939). Thus the blood urea was normal in Cases 1, 3 and 4 confirming the above observation. The blood urea has been confirmed to be of great value in distinguishing upper gut bleeding from lower gut bleeding (Ransome, 1969).

Though haemorrhoids is a very common cause of bleeding per rectum, the diagnosis can be difficult and delayed as Cases 1 and 2 illustrate. The value of a fenestrated proctoscope is shown in Case 2. In haemorrhoids, the stool is well formed as it is solid and whorled after it has passed the splenic flexure of the descending colon (Pollock, 1967). The bleeding in haemorrhoids consists of bright red blood with absence of clots. The presence of clots of blood would suggest a more sinister cause of bleeding such as carcinoma of the large bowel rather than haemorrhoids (Aylett, 1968).

In bleeding per rectum, examining the blood with a spectroscope would indicate whether the blood is arterial or venous. Arterial bleeding often requires surgical treatment (Ransome, 1969).

A helpful method in the examination of bloody stools is to stir it in a bucket of water;

if the bleeding is arterial, casts of the arteries will then float on the surface of the water; also in infective conditions such as typhoid and dysentry, sloughs of the intestinal mucosa will also float. This technique was first described by Major Peate of the Indian Medical Service and its value has been confirmed by the senior author (G.A.R.).

Though Meckel's Diverticulum is said to occur in about 2% of the population, it was found to cause haemorrhage in 8.7% of 722 cases described by Weinstein, Cain and ReMine (1962). It is a rare cause of haemorrhage per rectum locally; Case 3 was the only case that the senior author has encountered in many years of medical practice.

In Case 4, the massive haemorrhage per rectum was done to ulceration and haemangioma of the caecum. The cause of his hepatosplenomegaly and mesenteric lymphadenopathy remains undetermined; though a reticulosis or collagen disease appears likely, there was no histological evidence at necropsy. Haemangioma of the gut is rare; it forms 0.3% of all gastro-intestinal tumours (Hansen, 1947). It is usually found in the small intestine. Lockhart-Mummery (1938) described a case of haemangioma of the rectum and sigmoid flexure presenting with severe haemorrhage, resembling our case.

SUMMARY

Two cases of haemorrhoids, one of Meckel's Diverticulum and one of ulceration and haemangioma of the caecum with hepatosplenomegaly and mesenteric lymphadenopathy of undetermined origin presenting with massive haemorrhage per rectum are described. The value of azotaemia in distinguishing upper from lower intestinal bleeding is emphasized. When arterial blood (as determined by spectroscopy and the presence of arteriolar blood casts) is passed per rectum, surgical treatment is often required.

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