# Haemorrhage — the main presenting feature of diverticular disease of the colon in blacks

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**Abstract** **Haemorrhage is one of the less common presentations of diverticular disease. This retrospective 5-year study of 23 patients has identified it as the main presentation (74%) among South African blacks in whom the disease is uncommon, but emerging as a clinical problem. Women constituted a statistically significant majority of patients with bleeding (76%); this was in excess of their overall proportion among patients with diverticular disease (61%) ($P = 0,018$).**

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Colonic diverticular disease is relatively rare among blacks. There is therefore scant information in the literature on its pattern of presentation and the outcome of its management in this group of patients. Published reports affirm its rarity among blacks in sub-Saharan Africa but point out that its incidence in African-Americans is as common as in their European-American compatriots.[1] This has been attributed to a change in dietary patterns towards a refined diet with low fibre. A study from Johannesburg noted that the disease was emerging among urbanised blacks who have moved toward a more refined Western-type diet.[2] However, the authors of the latter study failed to highlight apparent major differences between the clinical presentation of their patients and that classically described in Western populations. We undertook a review of colonic diverticula patients managed in our hospital in order to study their pattern of presentation. We identified haemorrhage as the main presenting feature, and this forms the basis of this report.

## Patients and methods

Case files of patients managed at King Edward VIII Hospital for symptomatic diverticula of the colon from January 1987 through December 1991 were reviewed. The files were identified through a computerised discharge diagnosis of diverticular disease and its complications.

The hospital serves a predominantly black patient population that comprises more than 90% of its admissions; the remainder are Indian.

Fisher's exact test was used to assess differences in sex distribution and the unpaired Student's *t*-test for age and haemoglobin differences between patients with or without bleeding.

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## Results

Twenty-three patients were found to have symptomatic diverticula of the colon during the 5-year period under review. This gives a prevalence of 5/100 000 admissions. All had diverticulosis and no patient with a solitary diverticulum of the colon was identified.

Ages ranged between 28 and 86 years with the peak age incidence at between 51 and 60 years. Seventy-four per cent of patients were older than 50 years. Data on clinical presentation are shown in Table I. Seventeen patients (74%) presented with rectal bleeding. Fifteen of these had frank haematochezia (88%); in the other 2, the bleeding was occult, their symptoms being primarily those of chronic anaemia. In addition to rectal bleeding, 3 patients also experienced pain (18%) while 1 had diarrhoea.

TABLE I.
**Clinical presentation in 23 black patients with diverticular disease of the colon**

| | No. | % |
|---|---|---|
| Sex distribution | | |
| Female | 14 | 61 |
| Male | 9 | 39 |
| Haematochezia* | | |
| Frank (15)† | 17 | 74 |
| Occult (2) | | |
| Abdominal pain | 7 | 30 |
| Change of bowel habit | 3 | 12 |
| Abdominal mass | 2 | 8 |

* Some patients presented with more than one major category.
† Figures in parenthesis denote the number of patients with the indicated condition.

The diagnosis of diverticula was established on radiocontrast enema in 10 patients with bleeding (58%) (Table II) and in 4 by means of colonoscopy (24%). Of the 2 patients in whom the diagnosis was made by means of laparotomy, 1 was undergoing cholecystectomy and the diverticula were left *in situ*. The other patient presented with life-threatening rectal bleeding and was submitted to emergency mesenteric angiography to no avail. She underwent an emergency laparotomy which revealed blood in the whole of the colon. The colon was washed with intra-operative per-ileotomy prograde colon lavage[3] and examined through a rectally passed flexible colonoscope which identified a bleeding diverticulum in the sigmoid colon. The patient had diverticula of the entire colon but only a sigmoid colectomy was performed. The patient whose diagnosis of bleeding diverticular disease was made post-mortem had mistakenly been managed for dysentery!

As expected the mean haemoglobin level of those patients who presented with bleeding was significantly lower than those without (Table III). More than one-half needed blood transfusions, 4 receiving four or more units of blood (24%). All our patients had normal results from coagulation and bleeding disorder screening tests (not shown). None was on chronic analgesic drugs.

TABLE II.
**Distribution and diagnosis of diverticular disease of the colon in 23 patients with or without bleeding**

| | Bleeding | No bleeding | Total |
|---|---|---|---|
| Sex distribution: | | | |
| Female* | 13 | 1 | 14 |
| Male | 4 | 5 | 9 |
| Mean age ± SD† | 60,2 ± 12,0 | 55,5 ± 18,0 | 58,8 ± 13,8 |
| Diagnostic tool | | | |
| Radiocontrast enema | 10 | 3 | 13 |
| Colonoscopy | 4 | 0 | 4 |
| Laparotomy | 2 | 2 | 4 |
| Necropsy | 1 | 1 | 2 |
| Anatomical distribution | | | |
| Caecum + ascending colon | 3 | 3 | 6 |
| Sigmoid + descending colon | 5 | 1 | 6 |
| Pancolonic | 9 | 2 | 11 |

*Fisher's exact test $P = 0,018$ for difference in sex distribution.
† Unpaired *t*-test showed no significant difference.

TABLE III.
**Management and outcome in 23 patients with diverticular disease of the colon**

| | Bleeding | No bleeding | Total |
|---|---|---|---|
| Lowest haemoglobin (mean ± SD)* | 8,1 ± 2,5 | 12,8 ± 2,6 | 9,1 ± 3,3 |
| Blood transfusion | | | |
| Number of patients | 10 | 0 | 10 |
| Mean pack cell units† | 5,8 ± 7,5 | | |
| Patients given ⩾ 4 units | 4 | | |
| Operative management | | | 5 |
| Emergency lap. + resection | 1 | 2 | |
| Elective resection | 0 | 2 | |
| Conservative management | 15 | 1 | 16 |
| Operative mortality | 0 | 1 | 1 |
| Pre-operative deaths | 1 | 1 | 2 |

* Unpaired *t*-test $P = 0,001$.
† Includes 2 patients who received 26 and 10 units respectively; if these were excluded mean units of blood used becomes 2,8 ± 1,7.

Operative management for bleeding was undertaken in only 1 patient already alluded to above. Fifteen were managed non-operatively and only 1 of these had recurrent rectal bleeding. She was the only patient to have documented right colon angiodysplasia in addition to descending colon diverticula and it could not be determined colonoscopically which lesion had accounted for the bleeding. She was admitted with haemorrhage twice more within the ensuing 2 years and was treated conservatively with blood transfusion each time. Operative treatment which would have entailed subtotal colectomy was deemed too risky for this frail elderly woman.

There were no deaths related to management of bleeding with diverticular disease, apart from the 1 patient who had been misdiagnosed as having dysentery. Another patient died 4 years after presentation from an unrelated cause.

## Discussion

Diverticular disease is rare in sub-Saharan blacks who maintain their traditional lifestyles. The disease is primarily diet-related, so that African-Americans experience a similar incidence of the disease as their European-American compatriots.[1] The global adoption of refined low-fibre Western dietary habits by the newly urbanised Third World has resulted in the emergence of diverticular disease as a distinct problem in these communities.[2] This was confirmed in the present study.

In elderly patients classic diverticular disease presents in the left colon, particularly the sigmoid, as subacute obstruction with chronic pain or as an inflammatory process, often with a perforative pericolic mass. Bleeding is a less common presentation.[4]

This study has identified haemorrhage as the predominant presentation (74%) in a patient population comprising blacks. An earlier study from Ghana also noted an unexpectedly high incidence of bleeding in black patients with diverticular disease.[5] Bleeding was also present in 50% of patients in the Johannesburg patient population, which was similar to ours.[2]

The right colon was affected by diverticula in the majority of our patients with haemorrhage (71%). This was also apparent in the Johannesburg study. However it should be stressed that bleeding also occurred in patients whose disease was limited to the left colon (29%). Indeed in the only patient who had operative intervention the actual point of bleeding proved to be in the sigmoid colon even though diverticula were present in her entire colon. The location of diverticula alone cannot explain the propensity for bleeding observed in our patients; the right colon has been noted to be the seat of the disease among Orientals but haemorrhage has not been a presenting feature in these patients.[6,7]

Female African-Americans have been reported to have a high incidence of bleeding from diverticular disease of the right colon compared with their male counterparts as well as white Americans.[8] It is interesting to note therefore that in our study, 76% of patients with haemorrhage were women although they accounted for only 61% of the total number of patients with diverticular disease. If this finding is confirmed by other studies, it might be an indication that black women with this disease are at high risk for bleeding.

The peak age of our patients was similar to that observed in the classic disease but, interestingly, nearly all the patients younger than 50 years of age presented with bleeding.

Detailed pathological analysis of diverticula was not carried out, but, where material was available either in the form of resection or necropsy specimens, our surgeons and pathologists did not find anything different from the classic pattern. Indeed in those patients treated by one of us (T.M.), a more detailed examination of the pathology found no striking differences from the usual pattern except that there was an absence of hypertrophy.

Our management of bleeding diverticular disease did not differ from that followed by others.[9] It entailed conservative treatment with fluid and blood replacement. Operative intervention was reserved for life-threatening haemorrhage. As mentioned earlier, there was only one such patient, in whom we failed to identify the bleeding point. An intra-operative prograde colon lavage facilitated an intra-operative per-rectal colonoscopic examination. This was directed manually to the area of fresh bleeding in order to pinpoint the bleeding lesion. Although our experience is rather limited, we agree with recommendations put foward recently that intra-operative colonoscopy is to be preferred over mesenteric angiography in the management of life-threatening colonic haemorrhage.[10]

The outcome of conservative management was good. There were no deaths attributable to it and only 1 patient suffered recurrent bleeding, two further episodes of which were again managed non-operatively. This

elderly woman had left colon diverticula and right colon angiodysplasia but which was the culprit could not be established. A blind subtotal colectomy which could take care of both lesions was deemed unwise in her frail physical state. Angiodysplasia is still very rare among blacks.

In summary, our study confirms the previous report from Johannesburg that diverticular disease is emerging among urban blacks in South Africa and further draws attention to haemorrhage as a predominant presenting feature. These findings might equally apply to other newly urbanised communities who have historically been free of this disease. The increasing global mobility of patients and clinicians requires the latter to be familiar with different patterns of disease and their presentation in different races and communities; this will help prevent mortality caused by missed diagnoses.

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