Environment and Disease

PREVALENCE OF DIVERTICULAR DISEASE, HIATUS HERNIA, AND PELVIC PHLEBOLITHS IN BLACK AND WHITE AMERICANS

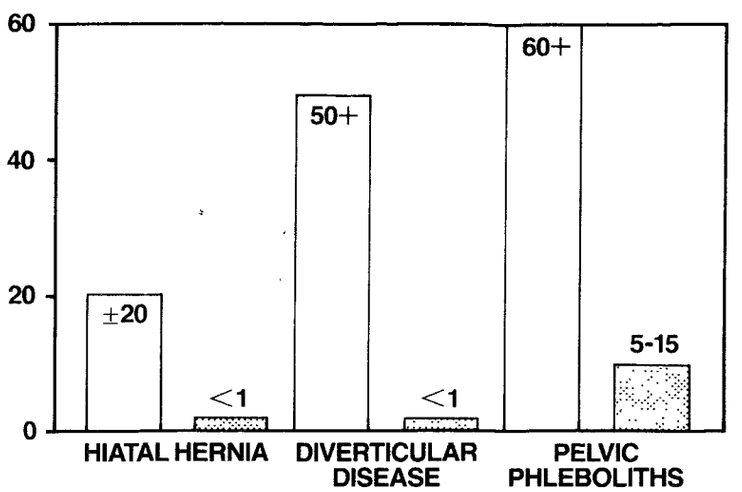
DENIS P. BURKITT JAMES L. CLEMENTS, JR
S. BOYD EATON

The Old House, Bussage, Stroud, Gloucestershire GL6 8AX; and Department of Radiology, Emory University School of Medicine, Atlanta, Georgia, USA

Summary Phleboliths, and especially diverticular disease and hiatus hernia, are rarer in developing countries than in economically more developed communities, but all three conditions were as common in Black as in White Americans. This finding suggests that they are due to environmental rather than to genetic causes. A deficient intake of dietary fibre may be the common factor predisposing to these three conditions.

INTRODUCTION

DIVERTICULAR disease of the colon, hiatus hernia, and pelvic phleboliths are rare in Africa and other third world countries but common in economically more developed communities (see accompanying figure).[1-3] As far as we know



Prevalence of hiatus hernia, diverticular disease, and pelvic phleboliths in Americans (open column) and Africans (stippled column).

TABLE I—PREVALENCE OF HIATUS HERNIA, DIVERTICULAR DISEASE, AND PELVIC PHLEBOLITHS IN BLACK AND WHITE AMERICANS

—	Number examined	Average age (yr)	% positive
Hiatus hernia			
White: M	94	49·3	21
F	121	52·7	21
Black: M	186	53·9	23
F	256	56·8	25
Diverticular disease			
White: M	78	50·2	55
F	82	48·9	55
Black: M	116	58·4	60
F	161	51·1	52
Pelvic phleboliths			
White: M	60	53·3	60
F	95	51·0	54
Black: M	87	56·6	60
F	92	52·2	61

the frequencies of these disorders are assumed, but not proven, to be the same in Black as in White Americans. If the frequencies were the same it would mean that these conditions are due to environmental rather than genetic factors and thus would be preventable by appropriate environmental changes.

SUBJECTS AND METHODS

In a prospective study using standard radiological techniques and diagnostic criteria 215 White and 442 Black Americans were investigated for the presence of hiatus hernia; 160 White and 277 Black patients were examined for the presence of diverticular disease: and radiographs of 155 White and 179 Black Americans were scrutinised for the presence of pelvic phleboliths.

RESULTS

No significant differences in prevalence of the three conditions were found either between the two ethnic groups or between sexes (table I).

DISCUSSION

Our findings were essentially the same as those of the only known study of this nature (Reinhardt JE, Ward WD, unpublished, table II), and they contrast with the extreme rarity of the disorder in Black Africans. Whittaker[4] detected only 1 case in 1310 radiological investigations of the upper gastrointestinal tract in Africans in Kenya. Grech[5] found 4 in 733 patients in Tanzania and Bassey et al[6] 4 in a carefully performed prospective study of over 1000 Nigerians. James,[2] in 8 years as sole thoracic surgeon in a 600-bed teaching

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TABLE II—PREVALENCE OF HIATUS HERNIA, DIVERTICULAR DISEASE, AND PELVIC PHLEBOLITHS IN BLACK AND WHITE AMERICANS

—	Number examined	Average age (yr)	% positive
Hiatus hernia			
White	119	54·5	28·6
Black	119	52·3	19·3
Diverticular disease			
White	99	54·6	28·3
Black	81	54·9	34·6
Pelvic phleboliths			
White	206	.	65·0
Black	204	. .	67·1

Data from Hardt JE and Ward WD, unpublished.

hospital in Uganda, saw no African patient with a demonstrable hiatus hernia.

In Africa diverticular disease has been, at least until recently, even more rare than hiatus hernia. Keely[7] did not detect it in 2367 necropsies on African patients at Barangwanath Hospital in Johannesburg, and Bremner and Ackerman,[8] after examining necropsy and other pathology records for 13 years, commented that "The Bantu practically never develop diverticulosis". Trowell[9] reported that only 2 cases had been observed in over 4000 necropsies in Uganda, and similar experience has been reported from Zaire and Ghana.[1]

Phleboliths in the pelvis are also very much less common in Africans than in North Americans. Kloppers and Fehrsen[10] examined pelvic radiographs of 359 Black and 340 White South Africans and found phleboliths in 13·5% of the former and 44·7% of the latter, a figure similar to that observed in North Americans. Burkitt et al[3] compared 155 pelvic X-ray films of Tanzanian Africans with those of 155 English subjects matched for age by decade and sex. Phleboliths were detected in 66% of the English, but in only 19% of the Tanzanians. The phleboliths were also more numerous in the English.

Diverticular disease, hiatus hernia, and phleboliths would thus seem to be the result of environmental factors associated with a western lifestyle. Also, their similar geographical distribution throughout the world suggests that they may share common or related aetiological factors. There is strong evidence that a deficiency of dietary fibre contributes to diverticular disease,[7] and the same may be true for hiatus hernia.[11] Pelvic phleboliths are calcified blood clots which may result from increases in intraabdominal pressure,[12] as can be generated by straining at stool,[3] together with an increase in clotting tendency. Clotting mechanisms have, in turn, been related to the fibre content of the diet.[13,14] Fibre-depleted diets may therefore contribute to the occurrence of these three conditions, as has been suggested in the case of the three components associated in Saint's triad—hiatus hernia, diverticular disease, and gallstones.[15] No alternative hypothesis has been postulated to explain the associations between these diseases.

Correspondence should be addressed to D. P. B., The Old House, Bussage, Stroud, Gloucestershire GL6 8AX.

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References continued at foot of next column

Round the World

From our Correspondents

United States

ASBESTOS SETTLEMENT?

THE Manville Corporation, in August, 1982, faced 16 500 lawsuits and claims of $12 billion for alleged asbestos-related damage. It was expected that by the end of the century, 50 000 such claims for personal injury would have arisen. Some 25 000 claims for property damage have also emerged from school districts and owners of buildings in which asbestos products were used. So the Corporation filed under the Bankruptcy Code to protect itself from future economic disaster. This action brought to a halt legal proceedings against the Corporation, which has now made an offer which, if approved (various lawyers are immediately protesting), will enable it to emerge from bankruptcy and compensate genuine victims, including those in whom asbestos-related disease has not yet become manifest. This move would not compensate plaintiffs in property damage, because the Corporation does not believe it is liable in such cases.

To those not expert in finance, these complex proposals are hard to understand. Some legal experts believe the bankruptcy filing was a mistake for, to emerge from bankruptcy, the Corporation is required to provide for all future claims, which it might have otherwise done on a year-to-year basis. It now has to provide for all possible claims at one swoop, before it can get clear. It may be the stockholders who will have to pay. They will have to surrender half the value of their stock and to accept the surrender of much of projected earnings over the next 25 years. The estimate of the eventual obligation is thought by the Corporation to be $2 billion, but other estimates put it at $3 billion.

The proposal is to set up a trust fund to assume all liability for present and future asbestos-related claims for personal injury. The intricate financial plans follow something of the pattern of other huge trust funds, such as that of the Robins Company, facing over 12 000 claims for injury from insertion of the 'Dalkon' shield ($615 million). The stockholders and, it seems, some of the Corporation's creditors are not too happy. Plaintiff lawyers are intending to fight to ensure the right to a jury trial.

The taxpayer may have to contribute a big share of the cost if all the millions that may be paid by the Corporation are found to be tax-deductable. With the Administration's new tax reforms still under debate, who can say?

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