# Volvulus of the Sigmoid Colon among Pathans*

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Volvulus of the sigmoid colon is rare, and a surgeon is likely to see only a few cases during his lifetime. This paper reports its prevalence among the Pathans, and describes our experience with primary resection and anastomosis.

*Geographical Distribution.*—In Great Britain sigmoid volvulus accounts for only 2.5% of cases of intestinal obstruction from all causes (Porritt, 1950) and in the U.S.A. between 1% (Hinton and Steiner, 1942) and 4% (Campbell and Smith, 1950). This is in sharp contrast with those countries where a high incidence of sigmoid volvulus has been reported—namely, Germany 31% (Braun and Wortmann, 1949), Russia 50% (Perlmann, 1949), Uganda approximately 20% (J. J. Shepherd, personal communication), and Brazil 25% (Oliveira *et al.*, 1963). In Peshawar the figure is 30% ; of 127 cases of intestinal obstruction admitted during the three years 1962–4 sigmoid volvulus was responsible for 38. This is a high figure, and is comparable to the incidence in other areas where the condition is prevalent.

## Present Series

The 38 patients in the series were Pathans. This teaching hospital services an area where the population is predominantly Pathan. One of us (H. R.) has worked at three other centres (Karachi, Multan, and Lahore) where Pathans form a very small part of the population, and saw only two cases in eight years. It would thus seem that this high incidence of sigmoid volvulus is peculiar to the Pathans, who are ethnically different from the other races in West Pakistan. This is the first report on the prevalence of this condition among Pathans.

## Clinical Features

The youngest patient was 25, the oldest 75, the average age being 51. There were only four women, the ratio of males to females being 8.5 to 1. There was no family history in any of the cases. The duration of the attack varied between 12 hours and six days, the average being three and a half days.

Twenty-three patients had had previous attacks, and nine of them had even undergone laparotomy and untwisting of the volvulus. In one patient the sigmoid colon had been anchored to the abdominal wall. However, he had another attack of volvulus a year later, showing that such anchoring is no guarantee against recurrence.

Three patients had gangrene of the sigmoid colon. Their general condition was poor, the systolic blood pressure in each case being below 90 mm. Hg, and in one the pulse was barely perceptible. The other 35 patients were in remarkably good condition, though some had had obstruction of the gut for as long as six days ; but they had not lost large quantities of fluids and electrolytes. The pulse rate varied between 65 and 90, being above 100 in only five cases. The blood pressure was low in only two cases, the systolic reading in both of them being 115 mm. Hg.

## Treatment

The three-year period may be divided into two phases.

1. *For the first eight months we tried the following methods of treatment.* In the first seven cases flatus tube or enema or both were tried: in five the obstruction was relieved, but in two laparotomy with untwisting of the volvulus had to be performed. In all these cases the intention was to perform elective resection a few weeks later to prevent recurrences. However, *all the patients refused the operation.* Relieved of their obstruction and being in excellent health, they could not understand why they had to undergo an operation. We realized that in our efforts to perform resection under ideal conditions we were letting slip the only opportunity of removing the unduly long sigmoid and preventing recurrences. In Cases 8 and 9, therefore, resection and exteriorization were performed.

There was no death in these nine cases. It must be remembered, however, that the first seven had been merely relieved of obstruction, and were liable to recurrences, any of which, untreated, could prove fatal.

2. *At this stage it was decided to try primary resection and anastomosis.* We used this method in all those with a viable sigmoid colon, and the results were gratifying. The postoperative course was smooth, flatus being passed on the first or second day. Only two patients developed moderate distension. Their average stay in hospital was 12.6 days. Twenty-six patients had a viable sigmoid colon, and were treated by primary resection and anastomosis. There was one death—a mortality rate of 3.8%. The only fatality occurred in a patient whose attack had lasted six days. In view of this we now reserve primary resection and anastomosis for cases of less than three days' duration.

During the same period three patients were admitted with a gangrenous sigmoid, and treated by resection and exteriorization. Two died—a mortality rate of 66%.

In this series of 38 cases with three deaths the overall fatality rate of volvulus was 7.9%.

## Discussion

*Mortality.*—Some authors ascribe a very high mortality to sigmoid volvulus. (1) "The mortality rate of immediate excision is prohibitive. Indeed, the overall fatality rate of volvulus is considerable, and has still not fallen far below 50%" (Aird, 1957). (2) "Even when treatment is available the mortality figures are still high. If resection is not necessary they average about 50% ; if resection is called for the figure mounts to 80% . . . volvulus if untreated runs a rapidly fatal course in some 2–5 days" (Porritt, 1950). In view of our own experience, we cannot but disagree with these statements. The published mortality rates tend to be similar to ours. Thus Dean and Murry (1952) had one fatality in 11 cases of primary resection and anastomosis—a mortality rate of 9%. Romanis and Mitchiner (1952) state that in cases of volvulus "plastic peritonitis soon fixes the coil by means of adhesions in its twisted position." This has not been our experience.

*Volvulus among the Insane.*—Apart from geographical areas with a high incidence of sigmoid volvulus this condition is common among the inmates of mental institutions. Thus

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sigmoid volvulus constituted 25% of all cases of intestinal obstruction seen at a certain mental hospital in the U.S.A. during five years (Dean and Murry, 1952). Again, more than half the patients in a series in the U.S.A. were psychotic (Gabriel *et al.*, 1953). One-quarter had no complaint and were brought because others had noted distension. In these mental patients chronic constipation due to faulty bowel habit had led to enlargement of the sigmoid.

*Management of Sigmoid Volvulus.*—There is no uniformity of opinion regarding management. In Uganda Shepherd (personal communication) uses a sigmoidoscope to guide a flatus tube into the dilated segment, which is carefully inspected for signs of vascular insufficiency. The flatus tube is left in place for 72 hours, and the patient is kept under careful observation. The bowel is prepared by oral antibiotics, and a few days later resection is carried out. The mortality rate has been 2%. However, Shepherd agrees that if the patients are allowed home they often do not return for surgery until the next attack. In Brazil, where this condition is very common, Professor A. C. Netto (personal communication) and his colleagues believe it to differ from sigmoid volvulus seen elsewhere. They regard it as one of the complications of megacolon, either acquired or due to Chagas's disease. They believe that in their country the definitive cure of volvulus can be accomplished only by abdominoperineal rectosigmoidectomy, and they have used this operation for sigmoid volvulus since 1940. Recently they have been using a modified Duhamel technique (Haddad *et al.*, 1965). It is difficult to be certain whether sigmoid volvulus in Brazil is in fact different from this condition seen elsewhere.

Though our experience with primary resection has been a fairly happy one, we have used this method out of necessity because our patients refused a second operation. In a European or other advanced community the ideal method in our opinion would be to untwist the volvulus at laparotomy and to perform elective resection and anastomosis a few weeks later.

## Summary

The prevalence of volvulus of the sigmoid among Pathans is reported. In cases with a viable sigmoid colon primary resection and anastomosis was followed by a mortality rate of 3.8%.

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# *Preliminary Communications*

## Increase in the Incidence of Non-secretors of ABH Blood Group Substances among Alcoholic Patients

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As an offshoot of a biochemical study of carbohydrate metabolism and alcoholism it was decided to carry out blood group studies on patients admitted to various alcoholic units. Scrutiny of the results of testing 100 patients for the antigens A, B, M, N, S, D, C, E, c, K, and $Fy^a$ revealed no obvious disturbance of the frequencies of the various phenotypes compared with the normal population. However, the results of the tests for secretion of group-specific substances A, B, and H, together with anti-$Le^a$ and anti-$Le^b$ typing, suggested that among these patients there was a higher incidence of the non-secretor individual than among the random population. A further 218 alcoholic patients were tested with this comparison in mind. This further series included not only alcoholic patients in hospital but some individuals from rehabilitation groups.[1]

So far as possible nationality was recorded. This was important information, since there seems to be some degree of variation in blood group secretor frequencies, even among inhabitants of different parts of the British Isles. For comparison, a random series of individuals were tested for ABO groups and secretion. These comprised 166 blood donors, 56 members of the staff of the North London Regional Transfusion Centre, 73 members of the staff of the South London Regional Transfusion Centre, and 28 members of the staff of the London Hospital.

[1] Since testing this series a further 60 alcoholic individuals have been investigated; 24 of these were non-secretors of ABH substances.

### Materials and Methods

*Blood Samples.*—Small clotted or heparinized samples were collected from each person either by venepuncture or by ear-prick.

*Saliva Samples.*—From each patient 1–2 ml. of saliva was collected into clean, dry Universal containers. As soon as possible after collection these were placed in a boiling-water bath for 15 minutes to destroy enzymes which might interfere with the activity of the blood group substances. They were then diluted one in two with normal saline and stored frozen at −20° C. until required.

*Antisera.*—Most of the antisera used throughout the investigation were kindly supplied by Dr. R. A. Zeitlin, of the South London Regional Transfusion Centre. Specially selected anti-A and anti-B sera were used for the inhibition tests on saliva samples. H was detected by means of anti-H from

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