

Bacteriology. His own *Manual for the Identification of Medical Bacteria*, published in 1961 in collaboration with Kenneth Steel, is one of the best known reference books in microbiology and was immediately in demand throughout the world. He could laugh at himself and did so when he put forward his "paper with ten heresies" in which he actually advocated abolishing rules of nomenclature and retaining only principles. His *Dictionary of Microbial Taxonomic Usage* is a classic work.

Sam took an eminently sensible and pragmatic attitude to taxonomy and nomenclature as they affected microbiological science on the one hand and medical practice on the other. Names must change as the science developed. When new facts were discovered they compelled new classifications and new names. But it was ridiculous to inflict changing specific names on medical practitioners. In medicine, Sam wisely argued, we should use in our reports the unchanging non-specific epithets—thus "the typhoid bacillus" rather than *Salmonella typhi*. This would avoid a clinician's concluding that his patient had "only a food poisoning salmonella" when in fact he had typhoid fever. Similarly, to report "a food poisoning salmonella" was wiser than to name *Salmonella typhimurium* and have a ward closed because "we hadn't realised it was typhoid."

Good account

I pressed him to come and lecture in Glasgow to the undergraduates. He was reluctant to do so but was finally persuaded to

meet and discuss his subject with the senior honours science students. This was such a success that he was then persuaded, against his will, to address the junior honours class; and finally, against all that he had laid down as a condition of coming to Glasgow, he met "even the medicals." This also produced a very successful discussion. I think it surprised and pleased him to find that his original vocation as an academic teacher would not have been a mistake. He was troubled by deafness, however, and that could have been a disadvantage. But Sam turned even that to good account by switching off his hearing aid and smiling beatifically at those whose communications or discussions he thought had gone on for too long or seemed to be taking a course he could not possibly accept. As an administrator his directness, as well as some of his decisions, surprised some of his colleagues in the Public Health Laboratory Service, of which he became deputy director in 1964. When remonstrated with, Sam would sometimes defend his actions by saying that he must have switched off his hearing aid when he thought the discussion had reached a good and right conclusion. His capacity as an effective administrator, however, rested on complete integrity of purpose and good judgment of what was both desirable and possible.

In 1967, for reasons of health, he retired to a quiet country cottage at Queen Camel near Yeovil in Somerset. He was a happy and complete family man and a steam railway enthusiast with a fine collection of photographs. He died suddenly on his 71st birthday having made, unobtrusively, as was natural to him, a precious contribution to microbiology and to the gentle art of making friends wherever he went.

Research from the South

Operations for portal hypertension due to extrahepatic obstruction: results and 10 year follow up

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Abstract

Between 1976 and 1984, 136 patients with portal hypertension due to extrahepatic obstruction were operated on. Twenty two patients had emergency and 114 elective operations. The operative mortality was 9% and 1%, respectively. Altogether 117 patients (86%) were followed up for from two to 10 years: 17 rebled, none developed encephalopathy or sepsis after splenectomy, and 90% and 75% were alive at five and 10 years

respectively. Unlike endoscopic sclerotherapy and treatment with propranolol, operative treatment of variceal bleeding can usually be completed during one admission and carries a low mortality and a fairly low morbidity.

Operation seems to be the best form of treatment for poor patients living far from medical facilities in developing countries and may be the treatment of choice in developed countries as well.

Introduction

Portal hypertension due to extrahepatic obstruction is rare in Western countries^{1,2} but common in India.³ Its cause is unknown and the place of operative treatment controversial. Those against doing operations cite the mortality,⁴ the recurrence of bleeding, and the incidence of postoperative encephalopathy.⁵ They advocate managing patients with blood transfusions during each episode of bleeding until a substantial number "outgrow their disease."^{6,7} The group that favours operation, to which we belong, cite the generally low operative mortality, the low rates of rebleeding reported from specialist centres, and the complete absence of postoperative encephalopathy.

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The mortality from a single episode of bleeding in the West has been reported to be as high as 31% in these patients, and in developing countries it may be even higher.⁸ There are, in addition, increasing dangers from repeated blood transfusions, and in many areas of the world facilities for transfusion are not available.

Between November 1975 and May 1984 we operated on 136 patients with extrahepatic obstruction (of 284 operations for portal hypertension). We have followed up 117 (86%) of these patients for between two and 10 years and present here our findings. This group is one of the largest groups of patients with extrahepatic obstruction reported on with a long and complete follow up.

Patients and methods

We operated on 91 male and 45 female patients (male:female ratio 2:1) with a mean (SD) age of 20 (9) years (range 4-60) (table). In each case the

Age distribution of patients operated on for extrahepatic obstruction

| Age (years) | 0-10 | 11-20 | 21-30 | 31-40 | 41-50 | 51-60 |
|----------------|------|-------|-------|-------|-------|-------|
| No of patients | 10 | 71 | 35 | 11 | 1 | 2 |

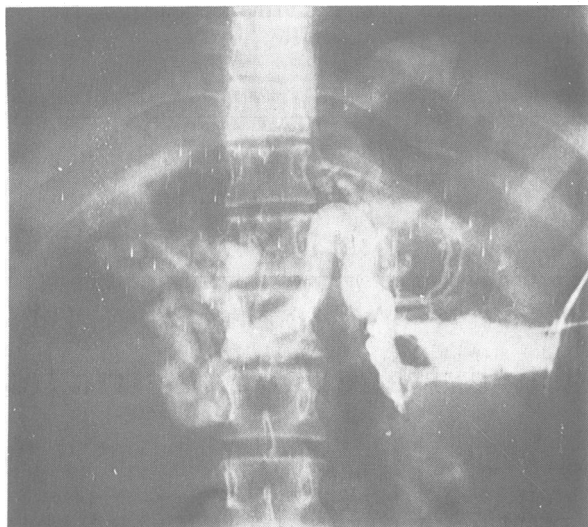


FIG 1—Splenoporthlebogram showing extrahepatic obstruction with block at junction of splenic and superior mesenteric veins.

following data were recorded: history; results of clinical examination; haematological investigations (haemoglobin concentration, white cell count, platelet count, erythrocyte sedimentation rate); liver function tests; barium swallow (or endoscopic) examination; splenoporthlebography; and liver biopsy.

Twenty two emergency operations were performed because the variceal bleeding could not be controlled by gastric lavage with chilled noradrenaline solution, insertion of a Sengstaken-Blakemore tube for 48 hours, or, more recently, injection sclerotherapy (in 14 patients).

Altogether 114 elective operations were done: 104 for patients who gave a history of variceal bleeding and 10 for patients with massive splenomegaly with hypersplenism.

Results

The mean (SD) number of bleeding episodes was 3.6 (2.5) per patient, for which they received 11.0 (10.0) units of blood. Fourteen patients gave a history of jaundice. Nine patients had had ascites before they were 4 years old. No patient gave a history of encephalopathy. In most patients the liver was normal in shape, size, and consistency. The spleen was palpable in all patients (except for eight who had had a splenectomy) and extended to a mean of 7.0 (3.2) cm below the costal margin. Seven patients gave a

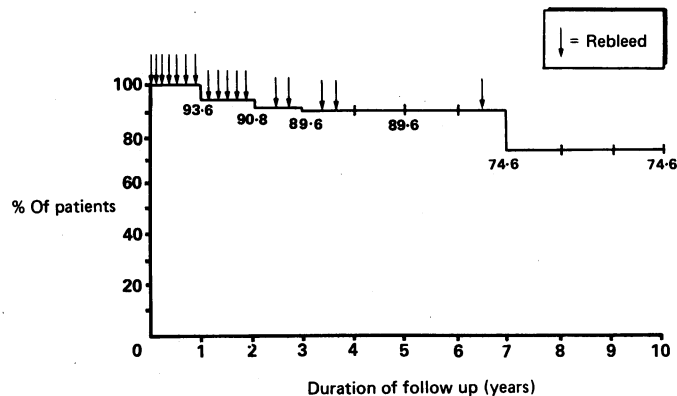


FIG 2—Life table showing proportion of patients alive at end of each year and time of rebleeding.

history of umbilical sepsis. Hypersplenism (defined as a white cell count of $<4 \times 10^9/l$ and a platelet count of $<100 \times 10^9/l$) was present in 66 patients. Two patients had raised serum bilirubin concentrations and transaminase activities, but in the remainder the results of liver function tests were essentially normal.

Of the 136 patients, 118 (87%) had either grade III or grade IV varices; in the remainder they were grade I or II.⁹ Splenoporthlebography showed that the block was in the portal venous system at the junction of the superior mesenteric and splenic veins in 126 patients (fig 1). In the others the block was nearer the splenic hilum. We did not see a single case of intrahepatic obstruction.

Of the 22 emergency operations, 14 were splenectomies with splenorenal shunts, four transthoracic transoesophageal variceal ligations, three splenectomies with gastro-oesophageal devascularisation, and one a mesocaval shunt with a knitted Dacron graft. The 114 elective operations comprised 94 splenectomies with splenorenal shunts.^{9,10} Eight mesocaval shunts,¹¹ and 12 splenectomies with gastro-oesophageal devascularisation.¹¹ Two patients (9%) died after emergency splenorenal shunts, and one patient (0.9%) died after an elective mesocaval shunt.

Rebleeding occurred in 17 patients after elective operations (15%); nine of these had had a splenorenal shunt and eight had had other procedures. Of these 12 rebled within two years of the operation (fig 2). Encephalopathy and sepsis did not occur after operation even in patients tested for "subclinical" encephalopathy.¹³

Long term survival was calculated by life table analysis (fig 2). At five years it was 90% and at 10 years 75%. Nine patients died later (after discharge from hospital) of whom four had splenorenal shunts and five other operations.

Discussion

The results of our operations on patients with portal hypertension due to extrahepatic obstruction indicate that both elective and emergency operations can be performed with a fairly low mortality. This has also been the experience of other centres in this country¹⁴ and elsewhere.^{9,15} There have been some reports of high operative mortality but these have been few¹⁶ or from a large number of surgeons, each of whom probably did the operation infrequently.¹⁷

The importance of doing the operation correctly and often was emphasised by both Linton *et al*,¹⁰ who first described the splenorenal shunt, and, more recently, Bismuth *et al*.¹⁸ Both groups stated that careful fashioning of the portasystemic anastomosis was vital to its proper functioning and would reduce the operative mortality and the incidence of rebleeding. Indeed, Bismuth *et al*'s rebleeding rate of 5% (in veins as small as 4 mm in diameter) is the lowest reported. It was achieved by careful dissection, the use of 6/0 interrupted Prolene sutures, intravenous administration of heparin before the anastomosis, and careful radiological evaluation on the operating table and revision of the shunt if necessary. Our rate of rebleeding of 15% is considerably higher, but our period of follow up was 10 years and the rate compares well with that in other series, in which it ranged from 20%¹⁹ to 68% (mean 30%).²⁰ Even these high figures have to be compared with the mortality in patients not operated on, which may reach 31% for an individual bleeding

episode.⁸ In a paper presented at the fifteenth international congress of paediatrics in 1977 Basu reported that he had followed up for five years 25 patients with extrahepatic obstruction who had not been operated on; at the end of this time they had all died.

The question of the development of postoperative encephalopathy in patients with extrahepatic obstruction remains controversial. We did not encounter a single case and neither did Grauer and Schwartz.² Webb and Sherlock, however, reported an incidence of 35%⁶ but 48% of their patients also had ascites which neither we nor Grauer and Schwartz encountered. Their results, in patients who were much older than ours (mean age 40 compared with 20 in our series) and whose obstruction was secondary to other diseases, suggest that they studied a different patient population. Voorhees *et al* reported a high incidence of encephalopathy (22%) in children who underwent splenorenal shunts,⁵ but their criterion for the presence of this complication was the incidence of psychiatric consultations in the group which is a criterion not universally accepted as valid. Grauer and Schwartz also reported encephalopathy after 19% of operations (such as oesophagectomy) in which the liver blood flow was not diverted.²

We did not encounter any sepsis after splenectomy, in common with other surgeons in India,¹⁴ and this may have been due to resistance gained from repeated intra-abdominal infections. This needs to be investigated further.

The 90% five year survival seems satisfactory especially when compared with the reported 100% mortality if operation is not carried out. The drop to 75% at 10 years may have been due to our life table analysis, in which we assumed that half the patients lost to follow up had died.

Recently alternative forms of treatment such as endoscopic sclerotherapy and the use of β blockers (for example, propranolol) have become popular for treating varices. In India most patients with extrahepatic obstruction are young and poor, live far from medical centres, and have large spleens. Endoscopic sclerotherapy necessitates from four to 12 visits to a hospital at three weekly intervals before the varices are obliterated; it leaves the huge spleen in situ, and the rate of recurrence of the varices is up to 70% in two years.²¹ The effectiveness of propranolol is questionable as it is difficult to monitor and lifelong treatment is required for a child or young adult. These treatments became popular in the West because of general dissatisfaction with the results of shunting for alcoholic cirrhosis, particularly the high operative mortality and incidence of postoperative encephalopathy. For patients with extrahepatic obstruction the circumstances are different; operation can usually be carried out during one hospital admission with, in experienced

hands, a low operative mortality and an acceptable incidence of rebleeding. Even if rebleeding does occur there are the alternatives of endoscopic sclerotherapy, propranolol, or even reoperation. In an era when blood for transfusion is becoming scarce and the procedure dangerous, operation—especially splenectomy and splenorenal shunt—for patients with extrahepatic obstruction seems the procedure of choice in India, and may be so in other countries as well.

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Are medicinal charcoal biscuits, which contain bicarbonate of soda, likely to cause renal calculi?

Charcoal biscuits contain wheatflour, vegetable fat, charcoal, cane sugar, malt, ginger, and the raising agent is bicarbonate of soda. I doubt whether the amount of bicarbonate of soda ingested by taking charcoal biscuits is sufficient to alter substantially the pH of the urine into the alkaline range. This can be checked by giving the patient sticks to monitor the urine. If the patient is not a stone former there should be no concern, but if he or she has previously produced urate urinary calculi the pH of the urine should be raised into the alkaline range. But this is contraindicated if the stones are of the triple phosphate type usually associated with an infection with a urea splitting organism. Such calculi, often associated with stasis in the urinary tract, form and grow rapidly in an alkaline medium.

The commonest urinary calculi are of the pure calcium oxalate variety. Sometimes, and particularly in women, they have appreciable amounts of phosphate. Pure calcium phosphate stones are most likely to develop in an acid medium, suggesting that they begin to form when the urinary pH is particularly low. Under these circumstances ingestion of charcoal biscuits is more likely to benefit the patient than be a disadvantage. Braggs produce an alternative preparation of medicinal charcoal tablets, which contain 300 mg

of pure vegetable charcoal and no bicarbonate of soda. English Grains Ltd produce an activated charcoal called Norit as 200 mg capsules, which can be used for indigestion and flatulence.—J C GINGELL, consultant urologist, Bristol.

A man with inoperable carcinoma of the pancreas has steatorrhoea which improves when he takes oxytetracycline for exacerbations of chronic bronchitis. What effect does tetracycline have on fat absorption?

Improvement of steatorrhoea during treatment with oxytetracycline suggests that bacterial overgrowth in the small intestine may be at least partly the cause of the fat malabsorption. Bacterial overgrowth may have many causes including stasis, which may be due to structural abnormalities such as a blind loop. A palliative procedure such as a gastroduodenostomy for carcinoma of the pancreas could produce such an abnormality. If this were the case metronidazole would be an alternative treatment. Tetracyclines have also been reported as causing fat malabsorption and steatorrhoea.¹—LINDA BEELEY, consultant clinical pharmacologist, Birmingham.

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