Annals of the Royal College of Surgeons of England (1990) *vol.* 72, 193–195

The aetiology and management of sigmoid volvulus in the UK: how much colon need be excised?

S G Mellor FRCS RAMC*
Senior Surgical Registrar
Professorial Surgical Unit, St Bartholomew's Hospital, London

R K S Phillips MS FRCS
Consultant Surgeon and Senior Lecturer
St Mark's and St Bartholomew's Hospitals, London

Key words: Sigmoid volvulus; Constipation; Sigmoid colectomy; Left hemicolectomy; Total colectomy

The case notes of 15 patients undergoing colonic resection for sigmoid volvulus at St Mark's Hospital over 25 years have been reviewed. Eight patients underwent sigmoid colectomy, four left hemicolectomy and three total colectomy. Although 12 of the 15 patients complained of a constipated bowel habit for 'all their lives' prior to operation, all but two had a much improved bowel habit thereafter, regardless of the extent of the resection. If there is evidence of acute or recent sigmoid volvulus at operation, sigmoid colectomy alone is recommended in the first instance.

Sigmoid volvulus is a rare cause of intestinal obstruction in the United Kingdom. Anderson and Lee in 1981 *(1)* reported that 5.6% of their cases of intestinal obstruction were caused by sigmoid volvulus. The majority of these cases occurred in the elderly, infirm and demented, especially if they had been institutionalised in the long period.

In this study we have examined the notes of all those patients who underwent colonic resection for sigmoid volvulus at St Mark's Hospital over the past 25 years to see if there is a common aetiology and, if so, to recommend a management strategy.

Patient presentation

The details of patients undergoing bowel resection for sigmoid volvulus at St Mark's Hospital, London, were extracted from records from 1965 to 1988. There were 15 patients with a mean age of 55 years (range 17–80 years); eight were male and seven female. None was infirm or demented, nor took regular medication apart from aperients (six patients).

The circumstances leading to their operations fell into two distinct groups, essentially acute/severe and recurrent/less severe presentations.

1. Acute/severe presentation

There were four patients in this group, presenting with up to 10 days' absolute constipation and increasing abdominal pain and distension. In three cases emergency laparotomy was performed, while in one case the volvulus was managed conservatively at another hospital in the first instance followed by elective resection at St Mark's. Three patients underwent sigmoid colectomy and one left hemicolectomy.

Three patients in this group complained of chronic constipation 'all their lives' and regularly used aperients, and only one admitted to no previous bowel trouble.

2. Recurrent/less severe presentation

This group consisted of 10 patients who were troubled by increasingly frequent episodes of pain, distension and absolute constipation over many years which were relieved after 48 h or so by a copious bowel action, and one patient who complained of painful abdominal distension at night but thought his bowel habit was normal. Nine complained of chronic constipation 'all their lives',

Present appointment and correspondence to: Lt Colonel S G Mellor FRCS RAMC, Consultant Surgeon, The Princess Mary RAF Hospital, Akrotiri, Cyprus, BFPO 57

of whom three admitted to using regular aperients. One had been diagnosed as having irritable bowel syndrome and had been on a long-term high fibre diet.

Operative findings and management

At operation, all patients were found to have grossly distended sigmoid colons with either a volvulus of the mesenteric base or fibrosis and dense adhesions in the area, suggestive of previous volvulus.

Six patients had megacolon (abnormal distension of the entire colon) in addition to gross distension of the sigmoid colon, and three had melanosis coli. Subsequent histological examination confirmed normal myenteric plexi in all cases.

Eight patients underwent sigmoid colectomy, four left hemicolectomy (one with temporary transverse colostomy) and three total colectomy with ileorectal anastomosis.

Outcome of operations

None of those undergoing sigmoid colectomy had recurrence of volvulus (average follow-up 4 months). In addition, they were no longer troubled by long periods of constipation. Three patients in this group had been noted to have 'megacolon' at operation. One 76-year-old lady in this group continued to require aperients and was noted to have a redundant colon on barium studies 1 year later, but felt herself to be much improved by the operation.

Postoperatively, two patients had episodes of subacute bowel obstruction (SBO). Both settled with conservative management and have not recurred.

Of the four patients undergoing left hemicolectomy, three developed a normal bowel habit while one had continuing trouble with severe constipation and bloating. Two of the group whose bowel habit improved following surgery had 'megacolon' noted at operation.

Of the three patients undergoing total colectomy and ileorectal anastomosis, one continues to be troubled by persistent distension and constipation which cannot be attributed to SBO. The other two made a good recovery. In this group, the patient who had continued problems had melanosis coli noted at operation.

Ten patients had improved bowel habit following operation and only one of these continued to use aperients. More extensive resection did not appear to be more successful than sigmoid colectomy. Statistical analysis would not be meaningful with this small number of patients.

Discussion

Two questions arise from this small study. First, what is the aetiology of sigmoid volvulus in these patients? Second, with this in mind, how best should the condition be managed?

Sigmoid volvulus is well recognised in Africa and Iran and is attributed to the ingestion of a diet with a very high fibre content (*2, 3*). It is also common in South America where it is associated with the megacolon resulting from infestation by *Trypanosoma cruzi*, which causes degeneration of myenteric ganglia (*4*). Living at high altitude has also been implicated as a cause of this condition.

Sigmoid volvulus is not common in the West, but in two reasonably large series, one from Scotland (*1*) and the other from the United States (*5*), the majority of patients were reported as coming from long-term medical or psychiatric institutions.

None of the cases in this group falls into any of these categories apart, possibly, from the 48-year-old male on a high-fibre diet for 'irritable bowel syndrome'. It is interesting to note that 12 of the 15 patients in this series described themselves as being chronically constipated and many used long-term aperients. At operation, six were noted to have 'megacolon' and three were noted to have melanosis coli. The presence or absence of these features did not appear to affect the outcome of the operation. Whether constipation or, indeed, administration of aperients is cause or effect in the aetiology of this condition remains obscure.

Regarding the operative management, there seems little doubt that resection at least of the sigmoid colon is mandatory as lesser procedures have a high incidence of recurrence (*6*).

It has been suggested that all patients with sigmoid volvulus should undergo resection of all dilated large bowel (*7*), on the grounds that the bowel will never recover its tone. Two patients were cited as having died from large bowel 'obstruction' due to bowel atony. The authors do not state whether the patients in this series were bedridden or demented. All those undergoing sigmoid colectomy in our series made a good recovery with improved bowel habit. One was shown still to have megacolon 1 year later, but professed to be much improved. More extensive resection did not have improved results, and two patients, one of whom had had a total colectomy, continued to be troubled by constipation and bloating.

The chronicity of symptoms did not appear to be a predictor of outcome of surgery and, therefore, whether the presentation of sigmoid volvulus be of an acute or more chronic nature, it is suggested that sigmoid colectomy alone be performed at the first operation, particularly in patients who are not chronically bedridden or demented.

The authors would like to thank Miss Jane Brice for her invaluable help in extracting the notes.

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Received 19 October 1989

Notes on books

Management of Oesophageal Carcinoma edited by Raymond L Hurt. 298 pages, illustrated. Springer-Verlag, Berlin. 1989. £85.00. ISBN 3 540 19533 X

Carcinoma of the oesophagus accounts for nearly four thousand deaths a year in the United Kingdom. This concise and up-to-date review cannot fail to interest surgeons who manage this fell disease. The results of surgery overall are poor and the results of surgery in the hands of the average practitioner poorer still. The editor makes a strong plea that oesophagectomy should be confined to a few well publicised centres so as to ensure an acceptable mortality rate for this highly dangerous procedure. Early chapters cover historical survey, surgical anatomy, epidemiology and diagnosis. There is a good account of pathology before the main section of the book on treatment. Various types of surgical resection are discussed in detail as well as palliative treatment and radiotherapy. There is a short section on laser treatment and photodynamic therapy. Lucidly written and nicely illustrated, this book is recommended.

The Illustrated History of Surgery by Knut Haeger. 288 pages, illustrated. Harold Starke, London. £25.

Knut Haeger was a vascular surgeon in Malmo in Sweden. This English edition is a translation of the original book and is printed in Spain. There are approximately 200 illustrations, many of them in colour, and well reproduced. The text is readable, with many interesting quotations. The layout is not strictly chronological but this does not detract from the reader's enjoyment.

Most surgeons interested in the history of our fascinating profession will look in vain for accounts of developments of personal interest. Nevertheless, this book would be an ideal present for a young relative about to take up surgery.

R M KIRK

Scott: An Aid to Clinical Surgery edited by H A F Dudley and B P Waxman. 4th edition. 315 pages, illustrated, paperback. Churchill Livingstone, Edinburgh. 1989. £9.95. ISBN 0 443 03839 2

The fourth edition of a standard undergraduate textbook of surgery. An Anglo-Australian collaboration, it contains more than enough for the undergraduate to pass the MB examination with marks to spare. The editors, in their preface, make a pertinent comment that the most important part of clinical learning is the gradual acquisition of attitudes and relevant knowledge obtained at the bedside; books being merely resources to help in this process and not substitutes for it. How true but how little realised by so many.

Baillière's Clinical Rheumatology, Volume 3, Number 1: Occupational Rheumatic Diseases edited by G P Balint and W W Buchanan. 221 pages, illustrated. Baillière Tindall, London. 1989. £18.50. ISBN 0 7020 1353 6

Many rheumatic conditions may be related to occupation. This volume covers three main areas of concern: first, those diseases caused by occupational, mechanical and chemical effects such as dysbaric disorders in divers and tunnel workers and locomotor problems of aviation and astronautics. Secondly, the regional pain syndromes associated with certain occupations including back pain. Thirdly, occupational causes of rheumatic diseases such as saturnine gout and occupation-related infectious arthritis.

The Surgical Management of Rheumatoid Arthritis edited by F Howard Beddow. 194 pages, illustrated. Wright, London. 1988. £55.00. ISBN 0 7236 1007 X

This book aims to provide the postgraduate surgeon studying for higher examinations with a practical guide to the surgical management of rheumatoid disease. It is not primarily a textbook of operative surgery as a knowledge of basic surgical technique is assumed throughout. There are separate sections on the medical aspects of rheumatoid disease and its pathology as well as a contribution on anaesthetic problems. Nicely illustrated, clear layout and easy reading.

Techniques in Aesthetic Craniofacial Surgery by Kenneth E Salyer. 292 pages, illustrated. J P Lippincott, Philadelphia. 1989. £60.00. ISBN 0 397 44652 7

A superbly illustrated and attractively laid out book on craniofacial surgery written by one of the leading American surgeons in the field; the author has performed over three thousand such operations since he first observed Paul Tessier in 1970. In addition to numerous clinical photographs there are also very clear coloured line diagrams showing details of technique and each chapter is referenced for further reading.