Radical Bladder Surgery

Not all tumours of the bladder can be treated by endoscopic procedures.[1] Very few are suitably placed for partial cystectomy,[2] and for those that have infiltrated deeply, or are too large or too numerous for treatment with interstitial radon, gold seeds, or tantalum,[3-5] then the choice of treatment must lie between total cystectomy or supervoltage radiotherapy or a combination of both.

Total cystectomy without radiotherapy has a sorry record even when tumours are superficial.[6-9] It gives results that are no better than those of radiotherapy alone, despite a formidable operative mortality and all the miseries that patients suffer from urinary diversion.[10]

The results of radiotherapy alone are also disappointing[11-15]; too often effects of radical treatment such as persistent bleeding or a contracted bladder make total cystectomy necessary a few months later. At operation the bladder is often found to be cleared of the tumour, but the hazards of the procedure are increased after such a course of radiotherapy. The anastomosis between the ureters and the sigmoid colon is particularly prone to leak as a result of the effects on the tissues of the radiation, which retards healing.[12 16 17]

A third course is to treat the bladder with a smaller dose of radiation and to carry out a planned cystectomy a few weeks later. Early results suggest that the mortality of this combined attack is no higher than that of cystectomy alone, and results may be somewhat better.[8 18 19] Combination of the treatment the other way round, following the cystectomy by irradiation, seems to have little value; there is a considerable risk that the radiation may injure the small and large bowel if they lie tethered by adhesions in the pelvis.[9 12]

The recent international agreement on the classification of bladder tumours[20] has made it possible to compare results from different centres. It is now clear that radiotherapy improves the prognosis after surgical excision. For this reason the surgeon should choose a method of diverting the flow of urine that will not be adversely affected by a preoperative course of irradiation.

This consideration rules out some of the more attractive methods of diversion. Ureterocolic anastomosis is in any case no longer a method of choice: the high incidence of hyperchloraemic acidosis and ascending infection[10] makes it unacceptable even if the anastomoses would heal after radiotherapy.

M. Mauclaire's operation[21] is better: the ureters are anastomosed to the sigmoid colon, which is divided, its distal end closed off, and its proximal end brought out as an end-colostomy. The isolated rectosigmoid serves as a "bladder." The surface area of absorbent colonic mucosa in contact with urine is reduced, and acidosis is less common than after straightforward ureterocolic anastomosis (though it is not entirely avoided[10]). There is no faecal contamination of urine and less postoperative pyelitis. The method has distinguished advocates,[22-24] particularly when preoperative radiotherapy is not used.[6]

The logical development of Mauclaire's operation is that of R. Gersuny.[25] After the isolated rectosigmoid reservoir has been constructed the proximal colon is brought down through the anal sphincter to the perineum. Success with this difficult operation has been reported in children,[26] young women,[27] and selected patients treated for cancer by cystectomy without prior irradiation.[6 28] However, failure results in sloughing and retraction of the perineal colostomy, and a considerable risk of incontinence of urine or faeces or both. The risk of failure is sufficient to daunt most surgeons even if there has been no previous radiotherapy.

Moreover, the rectosigmoid is still the urinary reservoir, and absorption of urine still continues and must result in acidosis.[29] Absorbent intestinal mucosa can be replaced by non-absorbent transitional epithelium in the laboratory,[10] but the opportunity to repeat the experiment in man is not likely to present itself so long as there is good reason to believe that radiotherapy should remain an essential part of the treatment, if not the most important part. For the time being the ileal conduit remains the diversion, if not of choice at least of necessity.

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Commonwealth Links

In our correspondence columns this week (p. 234) R. M. Marquis draws attention to the value of medical visits to developing countries. Taking as his example the subcontinent of India, where were held recently the Third World Conference on Medical Education[1] (in New Delhi) and the Joint Meeting of the British and Pakistan Medical Associations[2] (in Karachi), he reminds us that not only has the traditional clinical approach of British medicine much still to offer to doctors working there, but that what is learnt by the visitor can be equally instructive and useful.

1 *Brit. med. J.*, 1966, **2**, 1442.
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There is a wealth of florid clinical material of a kind seldom seen nowadays in Britain, there are remarkable geographical variations in disease which may, as F. Avery Jones[3] has emphasized in the field of alimentary cancer,[4] throw new light on common diseases at home, and there is the stimulating challenge of adapting the provision of medical care to circumstances and resources that differ greatly from our own. The old mistake that all that is required is to transplant British training and practice virtually unaltered is happily giving way to more realistic appreciation of what is required. The Delhi Conference underlined the importance of relating both medical education and medical practice to the needs and state of development of the community.

In this context the efforts of the Commonwealth Medical Association[5] and of the B.M.A's Overseas Affairs Committee[6] to strengthen the links between Commonwealth doctors are timely. There is no substitute to discussing a difficult problem face to face and with first-hand knowledge, and the fostering of cross-postings in medical schools and hospitals, teaching attachments, and individual visits by doctors can only be beneficial. Coming at a time when the British Government is seeking to treble the tuition fees of overseas students[7] and when through lack of funds the British Council[8] finds itself compelled to cut back its valuable contribution, these statements of professional determination to keep alive the free flow of doctors across national frontiers are doubly to be welcomed. In Marquis's words: "If we confine ourselves to the problems of medicine in the United Kingdom it will be to the detriment of both ourselves and our friends in the East." This applies with equal force throughout the Commonwealth, and indeed the whole world.

Glycosuria in Pregnancy

Women found to have glycosuria during pregnancy may receive a variety of advice. At one extreme is the opinion that pregnancy is a diabetogenic stimulus, at the other the more popular view at present that such glycosuria is nearly always innocent.

One difficulty is that the reported incidence of glycosuria during pregnancy ranges from 3% to as high as 90% after a meal.[1] This suggests that attention should be paid to the finding of glycosuria itself before opinions are expressed on its significance. For example, it is already known that the likelihood of finding glycosuria increases after the woman has had a carbohydrate meal, with the duration of pregnancy,[2] and with the testing of repeated urine samples. In addition, methods of detecting glycosuria have improved, and there are now precise quantitative techniques for estimating glucose itself.

The careful investigations reported by Dr. J. Fine at page 205 of the *B.M.J.* this week will help to clear up some of the current confusion as well as providing a rational means of interpreting glycosuria of pregnancy. In addition to investigating over 2,000 pregnant women he also compared them with a control population on which he has previously reported.[3] He used Clinistix as a screening test for glycosuria and chose a glucose-oxidase technique as suitable for the study of large numbers of urines. In the normal population he found 91% of people excreted between 1 and 15 mg. glucose per 100 ml. urine and 9% over 15 mg. per 100 ml. In 1,000 pregnant women the overall distribution was similar, but there was an increase both in the number of urines with low levels of glucose (0–1 mg. per 100 ml.) and in those with glucose levels over 15 mg. per 100 ml. Glucose tolerance tests were carried out in 374 pregnant women with glycosuria, and the results showed that 94% had renal glycosuria, 5% a lag type of curve, and only 1% a diabetic glucose tolerance. In the total series of 2,547 pregnant women only three cases of diabetes were detected, which, together with four already known, gave a figure of 0.28%, approximately one-sixth the incidence of diabetes in the control population.

When more than one specimen of urine was tested the detection of glycosuria rose, and observations throughout the 24 hours showed that there were much wider fluctuations in output of glucose in pregnancy than in the controls. Peak values could often be related to intake of food, and when a series of 50 women were investigated after administration of 50 g. glucose no less than 90% were found to have positive Clinistix tests as compared with only 20% of the controls. Quantitative tests gave similar results. Since such a large proportion of pregnant women can be shown to have glycosuria under carefully standardized conditions, it is obviously illogical to subject them to time-consuming glucose tolerance tests because of the chance finding of glucose in a random specimen of urine. Glycosuria might therefore be regarded as a normal accompaniment of pregnancy.

What then is to be done to detect the rare patient who is a true diabetic? Fine suggests that a single blood-sugar determination should be made one hour after a carbohydrate meal or glucose drink, and that this might well be combined with other routine investigations carried out in antenatal clinics. The added burden of blood-sugar estimations could be readily borne in automated laboratories, and would be more than offset by the reduction in the present practice of carrying out glucose tolerance tests in pregnant women who are found to have glycosuria.

Strokes and Fits

It is a curious paradox that the more we know about strokes the more we realize how inaccurate clinical diagnosis can be. Small haemorrhages mimic massive infarcts—and vice versa. Peripheral cerebral embolism often reflects proximal arterial disease. Add to this the concept of relative ischaemia and infarction without complete occlusion and it is not surprising that the diagnosis "cerebral thrombosis" is now made with great caution in the absence of arteriographic or necropsy evidence.

Recurrent strokes present a similar diagnostic problem. Has the patient had a further haemorrhage or embolism in exactly the same site, or has an area of brain which was rendered partially ischaemic by the original attack been deprived of further function by some temporary lowering of blood flow? Elsewhere in this issue of the *B.M.J.* Dr. W. Fine (p. 199), reporting on elderly patients, draws attention to another possible explanation in some cases. It is often taught that occlusive vascular disease rarely causes fits, except perhaps at the onset of the ischaemia. In practice this is found not to be strictly true. Though focal convulsions

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