MEDICAL PRACTICE

Contemporary Themes

“Right” stay in hospital after surgery: randomised controlled trial

J E P SIMPSON, A G COX, T W MEADE, P J BRENNAN, J A LEE

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Summary

A randomised controlled trial was carried out on 100 patients to compare the effects of discharge after certain pre-specified clinical criteria had been fulfilled—“right” stay—with those of discharge at an arbitrary 10 days after surgery—“fixed” stay. The operations concerned (cholecystectomy and vagotomy) were more hazardous than those previously included in studies of early discharge. Patients in the right-stay group were discharged, on average, 7.6 days after operation—that is, two days earlier than those in the fixed-stay group. In terms of clinical progress, social factors such as return to work, and the acceptability to patients and relatives of the implications of right stay, patients in this group fared as well as those in the fixed-stay group, and in some respects slightly better. Right stay entailed the transfer of some work from hospital to community medical and nursing staff, but this also was acceptable. The concept and use of the right-stay principle is of value in planning the postoperative discharge of suitable patients.

Division of Surgery, Northwick Park Hospital, Middlesex HA1 3UJ
J E P SIMPSON, MA, FRCS, research assistant
A G COX, MD, FRCS, consultant surgeon

MRC and DHSS Epidemiology and Medical Care Unit, Northwick Park Hospital, Middlesex HA1 3UJ

T W MEADE, BM, MRCP, director
P J BRENNAN, MSC, member of scientific staff
J A LEE, MD, MFCM, member of scientific staff (now specialist in community medicine, Kingston and Richmond AHA)

Introduction

Over the past 15 years increasing attention has been paid to the length of time surgical patients spend in hospital. Doran *et al*¹ and Ruckley *et al*² reported on the clinical, social, and financial implications of day care and 48-hour admissions for hernia, varicose vein, and haemorrhoid operations. Randomised trials of length of stay after operation have been carried out,³ and there is now general agreement on the safety and feasibility of early discharge.⁴

Our study differed from other trials in two important respects. Firstly, the operations concerned—cholecystectomy and vagotomy—were more hazardous and had a less certain postoperative course than those previously studied. Secondly, the basis for discharge in the test group acknowledged that there was likely to be a range of intervals over which patients were ready for discharge after operation. We aimed to identify this “right”-stay period in terms of pre-specified clinical criteria. We believe that the use of a clinical basis for discharge rather than a standard and somewhat arbitrary “early”-discharge interval may increase the acceptability and implementation of the results of trials of length of stay.

Methods

During July 1973 to April 1975 all 170 patients admitted for elective cholecystectomy or, from December 1973, vagotomy and drainage were considered for inclusion in the trial. Patients were excluded (a) if they had other significant illnesses (12 patients), (b) if social reasons might have made their participation difficult (10 patients), or (c) if surgery was other than straightforward (48 patients)—for example, if it was necessary to explore the common bile duct (31 patients) or a further procedure was needed (17 patients). Altogether 70 patients were excluded for these reasons. The remaining 100 (80 admitted for cholecystectomy, 20 for vagotomy) were allocated at random after surgery to a “fixed”-stay (47 patients) or “right”-stay

(53 patients) discharge group. Informed consent was obtained in all cases.

Fixed-stay discharge was defined as the modal interval for uncomplicated surgery in the unit concerned and was intended to take place on the tenth day after operation. Right-stay discharge could be implemented when the patient had satisfied the following criteria.

The patient must not need (1) intravenous infusion, (2) a nasogastric tube, or (3) intramuscular analgesics; must not have had (4) a temperature over 37.5°C in the previous 48 hours; must be (5) independent of nursing care for washing, dressing, and eating, (6) taking fluid freely by mouth, and (7) eating at least half a portion of the two main meals of the day; must have (8) a healthy wound, (9) a healthy drain site, and (10) had a bowel action; must be (11) micturating spontaneously, (12) free from chest complications, and (13) taking fewer than six analgesic tablets daily; and must have (14) a leucocyte count below $10 \times 10^9/l$ ($10\,000/mm^3$), (15) a haemoglobin of at least 10 g/dl, and (16) no evidence of biliary obstruction in liver function tests.

Results for these criteria were noted daily together with the haematological and biochemical results on the first, second, fifth, and tenth postoperative days. Basic information—for example, type of work—was collected from each patient while still in hospital. Immediately before discharge every patient received the same advice on diet and activity and on possible difficulties they might encounter—for example, residual abdominal pain. After discharge information on symptoms, treatment received, and return to work was obtained by means of (a) a daily record kept by the patient; then (b) a clinical interview and questionnaire in the outpatient department three weeks after surgery; (c) an interview with the general practitioner after the outpatient visit; (d) a questionnaire to the relative in closest contact with the patient; and (e) a postal questionnaire to the patient six months after surgery.

Every patient was successfully followed up three weeks and six months after surgery, and all the interviews were carried out by JEPS.

Results

The results are considered for all 100 patients together regardless of which operation they had undergone, and time intervals are given in terms of postoperative rather than total stay. Table I shows that the two groups were closely similar in age, sex distribution, social class, and numbers living alone. Further analyses of the scoring system for right-stay discharge will be reported on elsewhere, but there were no differences in mean score, by postoperative day, between the two groups or in the number or type of technical nursing and other procedures carried out while in hospital.

TABLE I—Details of right-stay and fixed-stay discharge groups

	Right-stay group	Fixed-stay group
No of patients	53	47
Mean age in years	48.2	48.1
Sex { M	16 (30.2%)	13 (27.7%)
F	37 (69.8%)	34 (72.3%)
Social class { I and II	23 (43.4%)	19 (40.4%)
III	29 (54.7%)	24 (51.1%)
IV and V	1 (1.9%)	4 (8.5%)
Live alone	4	3

Table II shows the lengths of postoperative stay in the two groups. In the right-stay group (mean stay 7.6 days) discharges began on the fifth postoperative day and ranged up to the fourteenth day (one patient). In the fixed-stay group (mean stay 9.7 days) most discharges occurred, as planned, on the tenth day. One patient was discharged on the seventh day, and one on the thirteenth day. Right stay was no average two days less than fixed stay.

TABLE II—Distribution of lengths of postoperative stay in the two groups

Postoperative stay (days):	5	6	7	8	9	10	11	12	13	14
No in right-stay group	11	8	12	5	8	2	2	2	2	1
No in fixed-stay group			1		16	26	3			

Mean postoperative stay was 7.6 days in right-stay group, and 9.7 days in fixed-stay group.

Table III summarises the main results. Within three weeks after surgery the proportions of patients who reported difficulties other than those they had been warned to expect were virtually the same, though only one of the nine who reported wound discharge was in the right-stay group. In several other respects the right-stay group did slightly better than the fixed-stay group: fewer needed analgesics, had their sleep disturbed, or had residual pain, and more had a normal appetite. The numbers on which these findings are based, however, were small.

TABLE III—Results within three weeks after surgery and six months after discharge, and use of health and other services

	Right-stay group (n = 53)		Fixed-stay group (n = 47)	
	No	%	No	%
Results within three weeks after surgery				
Unexpected difficulties	12	23	12	26
Wound discharge	1	2	8	17
Other	11	21	4	9
Requiring analgesics 10-15 days after surgery	22	42	28	60
Sleep disturbed by pain 10-15 days after surgery	11	21	13	28
Restless nights 10-15 days after surgery	35	66	31	66
Pain continuing three weeks after surgery	15	28	17	36
Normal appetite three weeks after surgery	31	58	30	64
Results six months after discharge				
Deaths and hospital readmissions	0		0	
Free of pain	42	79	35	74
Normal appetite	47	89	40	85
Use of health and other services				
Visited by general practitioner in 10 days after discharge	14	26	8	17
Visited general practitioner in surgery in first three weeks after surgery	29	55	16	34
Visited by district nurse in 10 days after discharge	25	47	8	17
Visited by other health or social service worker in three weeks after surgery	2	4	3	6
Consulted general practitioner for abdominal symptoms in six months after surgery	12	23	12	26

At six months the clinical and social progress of the groups was closely similar. There were no deaths or readmissions to hospital in either group. The proportions free of pain and with normal appetites were virtually the same, as were the mean weights (65.6 kg in the right-stay group, and 64.8 kg in the fixed-stay group). The mean times to return to work (6.9 weeks in the right-stay group, and 6.2 weeks in the fixed-stay group) differed slightly but not enough to be important.

On the use of services, more patients in the right-stay group were visited at home by their general practitioners soon after discharge than in the fixed-stay group. The same was true for visits by the patient to the general practitioner and for visits by the district nurse.

In addition to the results shown in table III the proportion of patients who made adverse remarks about length of stay was rather less in the right-stay group than in the fixed-stay group; the proportions of patients whose relatives made critical comments about length of stay were the same in both groups. No general practitioner mentioned major clinical or organisational problems.

Discussion

The right-stay approach used in this study confirmed, as clinical experience suggests, that there is a range of appropriate periods for postoperative stay in hospital, even after uncomplicated surgery. It is unrealistic to assume that there must be a standard period applicable to all patients. Though perhaps obvious, this point tends to be overlooked. Clinical recovery was not the only determinant of length of stay. Factors such as arranging transport and ensuring that a relative was at home on the day of discharge added slightly to postoperative stay in the right-stay group, but two-thirds of the patients in this group had left hospital by the day after they had satisfied the criteria listed above.

At both three weeks and six months after cholecystectomy or vagotomy patients discharged according to right-stay criteria had progressed at least as well as those discharged at a fixed

interval after operation. There were no differences in medical complications as indicated by "unexpected difficulties" (table III), and in some symptomatic respects, such as the continuing need for analgesics and disturbance of sleep, the right-stay group may have fared better than the fixed-stay group. The total numbers in the trial were too small to be sure that right stay is not associated with small increases in complications of different types, but no obvious medical disadvantages emerged. Right stay did cause general practitioners and district nurses some extra work owing to the transfer of routine procedures, such as suture removal, from hospital to the patient's home.

Right stay was on average two days shorter than fixed stay, and it is clear (table II) that there is a range of "right" postoperative intervals. Multivariable analyses are in progress to see which of the criteria for right stay make significant independent contributions to an acceptable clinical definition of readiness for discharge; probably the list can be appreciably shortened.

The usefulness of right stay can be seen from the points of view of both the patient and the surgeon. For the patient, discharge from hospital as soon as possible is usually desirable. Decisions about safe, early discharge have to be made largely on an individual basis. Uniform definitions of the appropriate time for discharge, whether early or not, are probably of limited value. For the surgeon, early discharge achieved by the right-stay approach may result in reduced pressure on beds and other hospital resources, which may be useful and desirable in its own

right. Alternatively early discharge may sometimes form the basis for increasing patient turnover and reducing waiting lists, provided that the implications for additional theatre time etc can be met; clearly there may be practical constraints that make early discharge a difficult policy to pursue.

Showing that early discharge is possible for some patients does not imply that it can simply replace conventional periods of postoperative stay for all patients. For every patient eligible for early discharge there is probably at least one who is not.

In considering the extension of this approach to other diseases, other hospitals, and other communities differences in the severity of surgery, rate of recovery, time needed to arrange homegoing, and support available at home could all be limiting factors.

Requests for reprints should be sent to Mr J E P Simpson.

References

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Clinical Topics

Cervical smears*

A I SPRIGGS, O A N HUSAIN

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This paper was prepared for the British Society for Clinical Cytology, which has been asked from time to time to provide a statement of the society's policy. Wide differences of opinion exist about this matter, and the present recommendations are not the result of a consensus or reconciliation of different views. The whole statement has, however, received the assent of the BSCC Council.

Age and frequency of cervical smear tests

The prophylaxis of cancer by cervical smear screening depends on the following assumptions, for which there is plenty of evidence: (1) a cervical cancer that would otherwise

be fatal can be eradicated by excision at an early or precancerous stage, and (2) the curable stage is cytologically detectable and usually has a long duration—for instance, 10-20 years or more.¹

We have taken these assumptions to be correct. A "positive smear" means one containing cells from a severe dysplasia, carcinoma in situ, or invasive cancer of the cervix.

Age for beginning screening

Positive smears may be found in teenagers, and the incidence of new disease (conversion from a negative to a positive smear) is greatest in those aged 25-29. The maximum prevalence is at ages 35-39.^{1,2} Therefore if it were important to treat these lesions at the earliest possible moment regular smears should be taken soon after the start of sexual activity.

It is generally agreed, however, that some of these lesions regress spontaneously, especially those classified as dysplasia, which are so common in the young.³ Also, there is nothing to be gained by removing lesions as early as possible, provided that they are removed *before it is too late*.

Invasive cervical cancer is predominantly a disease of the second half of life (see figure).⁴ If all deaths under the age of 35 were effectively prevented that would account for 20% of all deaths from cervical cancer. Emphasis is sometimes placed on the tragic occurrence of cervical cancer in quite young

*Policy document from the British Society for Clinical Cytology.

Laboratory of Clinical Cytology, The Churchill Hospital, Headington, Oxford OX3 7LJ

A I SPRIGGS, DM, FRCP, president, British Society for Clinical Cytology

Cytology Department, Charing Cross Hospital, W6 8RF

O A N HUSAIN, MD, FRCPATH, chairman, British Society for Clinical Cytology