

Hospital Topics

Operations for hernia and varicose veins in a day-bed unit

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Summary and conclusions

Over eight years (1970-8) 1055 patients underwent operations for hernia or "major" varicose veins in a day-bed unit. Here, 608 were discharged home on the day of operation, 262 were transferred to a convalescent hospital for 48 hours, and 161 were retained in the acute ward as part of a controlled trial. Special emphasis was placed on selection and preadmission screening. Failure of planning was uncommon in that only 2.5% were detained in hospital and 1% had to be readmitted. About one-quarter of the patients had complications but these were generally trivial and were satisfactorily treated by the community nursing sisters or general practitioners, or both. Analysis of the total operations for hernia or varicose veins in the unit over the past 19 years shows that, whereas formerly all patients with these conditions were admitted to the main surgical ward, nowadays almost all are managed either by day care or in a five-day ward.

Introduction

Several accounts of "major" day surgery have been published in recent years.¹⁻⁶ Clinical trials have proved its safety, acceptability, and cost-effectiveness.⁷⁻⁹ The essential feature is careful patient selection combined with communication and liaison between hospital and community services. Systems begun with enthusiasm as experiments are not always well sustained in everyday clinical practice. We have therefore analysed our experience of outpatient operations for hernia and varicose veins over the past eight years.

This study aimed at determining whether the system had been satisfactorily continued as a method of surgical care and to illustrate the part it has played in the overall treatment of these conditions in a general surgical unit.

Methods

Data on operations and early postoperative complications were recorded in a register. District nurses provided routine reports giving day-by-day accounts of postoperative care in the home. At the first

follow-up clinic visit, about two weeks after operation, the examining surgeon completed a questionnaire. These data were transferred to punched feature cards maintained throughout the period of study.

PATIENTS

Patients suffering from varicose veins or inguinal or femoral hernia were considered for operation in the day-bed unit. All four consultant surgeons on the unit included their patients. The selection of patients and details of the unit have already been described.⁴ During this period about three-quarters of all vein operations (fig 1) and one-third of all hernia operations (fig 2) in the general surgery unit were performed on an outpatient basis, whereas before 1970, as the graphs show, such patients would all have been admitted to the main surgical wards.

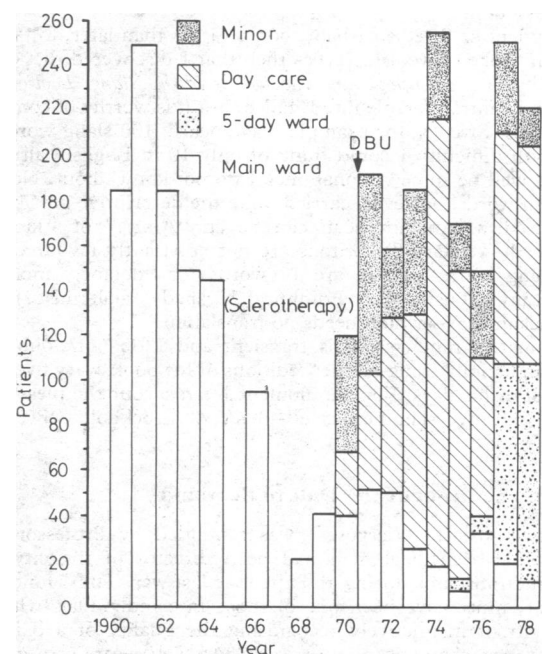


FIG 1—Surgical treatment of varicose veins in unit 1960-78. No data were available for 1965 and 1967. Fall in surgical operations in 1960s was due in part to vogue for sclerotherapy and in part to excessive waiting lists. DBU=Day-bed unit.

The age and sex distribution of the patients was not typical of the referred patient population (fig 3). Because of our selection policy the patients were predominantly young and generally healthy, with a home background suitable for early discharge.

Patients who were fit for day care on medical grounds but whose home background was unsuitable for direct return were transferred in the afternoon after operation to a convalescent hospital. Between January 1970 and May 1978 1055 patients (550 female and 505 male) were treated in the day-bed unit. They were divided into three sys-

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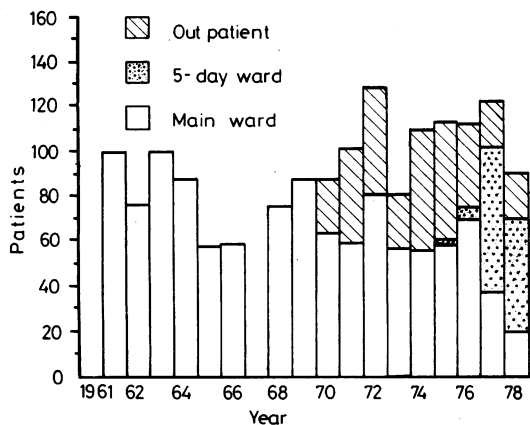


FIG 2—Operations for inguinal hernia 1961-77. No data were available for 1967.

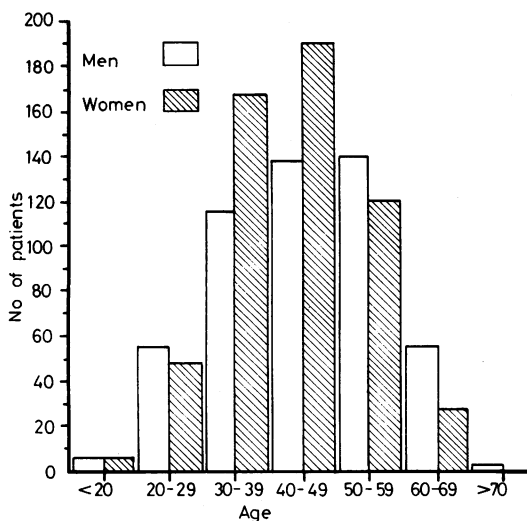


FIG 3—Age and sex distribution of patients.

tems of care. Most (608) were discharged home the same day after operation while 262 were transferred to the convalescent hospital for a 48-hour period of care. A smaller number (183) were admitted to the main ward. Most of these (161) received 48 hours of inpatient care as part of a controlled trial.⁸ Two patients were discharged to other destinations.

OPERATIONS

Operations were performed either by the consultant (521) or the senior house officer (516) acting under his supervision. Occasional operations (18) were performed by the unit registrar. Eight of the herniorrhaphies were bilateral, as were 38 of the vein operations, although standard unit policy was to operate on one leg only (table I).

TABLE I—Details of operations

	Men	Women	Total
Varicose veins (total)	269	535	804
Trendelenburg, ligations, and stripping	136	298	434 (1 combined with hernia repair)
Trendelenburg and ligations	84	153	237
Multiple ligations	20	56	76
Short saphenous system varices	29	28	57 (18 combined) (38 procedures were bilateral)
Hernia (total)	259	22	281
Direct inguinal hernia	67	1	68
Indirect inguinal hernia	191	12	203 (1 combined with vein surgery)
Femoral hernia	1	9	10 (8 procedures were bilateral)
Total operations	528	557	1085

Operations on varicose veins were divided into Trendelenburg procedures with and without stripping, multiple ligations, and operations on the small saphenous system. Patients having multiple ligations together with proximal ligations of both the great saphenous and small saphenous veins are noted under both columns in table I. Multiple ligations alone were not necessarily lesser operations than those that included Trendelenburg and stripping, particularly as many of the former were performed for recurrent varices. Ligation of incompetent communicating veins has been regarded as the most important part of an operation for varicose veins. Latterly, stripping has been done less often and we have stopped stripping the long saphenous vein in the calf altogether.

COMPLICATIONS

The outcome was assessed both from postoperative clinic visits and from the reports of the visiting community nursing sister.⁴⁻⁷ Out of a total of 892 due to be discharged the same day, the planned care was altered in only 22 patients (2.5%) (table II). Instead of being discharged, nine of these patients were admitted to the ward because of operative or anaesthetic problems, and were discharged to their original destination the next day. Thirteen patients were detained in hospital for more than 24 hours, again because of medical problems (one of these after repair of the femoral artery as a result of damage during herniorrhaphy). Readmission was needed for nine patients (1%) (table III): two for small pulmonary emboli, one for venous thrombosis, and the others for various medical reasons. Table IV shows the complication rate for each type of care. Minor complications were common. Of these, nausea and vomiting, although usually transient, were especially common, and one patient needed readmission on this account.

TABLE II—Reasons for delayed discharge

<24 hours	3 anaesthetic problems 3 difficult operations 1 drowsy	1 nauseated 1 hypotensive 1 administrative reason
>24 hours	4 wound problems 1 nausea	1 chest infection 7 administrative/social problems

TABLE III—Reasons for readmission

Same day	1 wound pain
1-2 days later	1 chest infection 1 wound haematoma
3-5 days later	1 jaundiced 1 chest pain (negative investigations)
>5 days	1 constipation 1 deep-vein thrombosis 2 pulmonary embolism—1 at one week, 1 at three weeks

TABLE IV—Complication rate for each type of care

	Home (608)	Convalescence (262)	Ward (183)
Wound problems	104 (17%)	60 (22%)	42 (23%)
Pulmonary embolism	4	1	1
Venous thrombosis	3	0	0
Chest infection	13	3	2
Urinary retention	1	0	0
Jaundice	1	1	0
Other	34	11	11

Six cases of non-fatal thromboembolism occurred. Five of these happened despite our prophylactic regimen of dextran 70.⁸ One embolism occurred three weeks after operation, which illustrates the importance of careful follow-up if late sequelae are not to be overlooked.

The complication rate overall was similar for each method of post-operative care, and this was confirmed by clinical trial.⁸ Wound problems in particular were common. This category includes any cause of impaired or delayed healing such as haematoma, inflammation, purulent discharge, wound pain, external haemorrhage, and necrosis of the skin edge. As expected, the problem was mainly found in those who had had operations on their varicose veins, one-fifth of whom reported a problem in one or more wounds. Poor healing in

the "gaiter" area of the leg, where in chronic venous insufficiency the skin and subcutaneous tissues are so vulnerable, accounted for most of these problems. Among patients treated for hernia only eight required dressings because of bleeding or discharge, although in a further four the wounds were described as inflamed, two had minor skin-edge necrosis, and nine had haematoma.

Discussion

This is not a retrospective study in the conventional sense in which that term is used, since the record-keeping systems were set up from the beginning to make continuous evaluation easier.

The study has shown that over eight years outpatient surgery for hernia and varicose veins has continued to be satisfactory in selected patients. Although complications were common (averaging 25%), they were mostly medically trivial and, in the main, easily managed by the community nursing sister or general practitioner. Clearly, the main requirements for hospital supervision occur from the time of induction of anaesthesia to the time the patient is fully awake. The risk from later post-operative events is small. The low rates of readmission (1%) and of delayed discharge (2.5%) confirm this and suggest that patients were appropriately selected. The process of selection for all grades of surgical care is the subject of current research.

We have found that few patients undergoing operation for hernia or varicose veins need the facilities of a conventional "full-time" surgical ward. Two trials^{7,10} have proved the economic advantages of day care. It would not be right, however, to claim efficiency in health care without taking account of the views of patients and of colleagues whose practices may be

affected. These aspects are the subject of separate reports, but it can be said that patients appreciate a policy of selection of surgical care for their individual needs¹¹; general practitioners are usually very willing to co-operate with the system,¹² while district nursing sisters are pleased with the new scope for their skills in the community.¹³ Indeed, without the help and support of these colleagues day care on this scale would not succeed.

Mr C W A Falconer, Mr W P Small, and Mr A N Smith kindly allowed us to include their patients and gave encouragement throughout. We thank them any nursing, secretarial, anaesthetic, and general-practitioner colleagues who shared the care of these patients and helped in their evaluation.

References

- Farquarson, E L, *Lancet*, 1955, **2**, 517.
- Stephens, F O, and Dudley, H A F, *Lancet*, 1961, **1**, 1042.
- Williams, J A, *British Medical Journal*, 1969, **1**, 174.
- Ruckley, C V, *et al*, *Lancet*, 1971, **1**, 177.
- Ruckley, C V, MacLean, M, and Ludgate, C M, *Lancet*, 1973, **2**, 1193.
- Nabatoff, R A, and Stark, D C, *American Journal of Surgery*, 1972, **124**, 634.
- Russell, I T, *et al*, *Lancet*, 1977, **1**, 844.
- Ruckley, C V, *et al*, *British Journal of Surgery*, 1978, **65**, 456.
- Ruckley, C V, *British Journal of Surgery*, 1978, **65**, 1.
- Prescott, R J, *et al*, *Journal of Epidemiology and Community Health*, 1978, **32**, 222.
- Garraway, W M, *et al*, *Journal of Epidemiology and Community Health*, 1978, **32**, 219.
- Garraway, W M, Ruckley, C V, and Prescott, R J, *Practitioner*, 1978, **221**, 22.
- Ruckley, C V, *et al*, *Nursing Mirror*. In press.

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Work of a day-bed unit 1972-8

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Summary and conclusions

From 1972 to 1978 inclusive 32 311 patients were managed in a 24-bedded day-bed unit in a district general hospital. The principal specialties using this were urology, gastroenterology, general surgery, gynaecology, haematology, orthopaedics, and radiology. Patient selection, a high standard of secretarial work, and good liaison with general practitioners, the community nursing service, and the ambulance service are most important.

Day care forms a large, important, and increasing part of the work of the hospital, and without it many of the specialties would be unable to cope with the demand, and their waiting lists would lengthen continuously.

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Introduction

So far as we can tell from published reports, the concept of day care originated in 1908 in Glasgow. Nicol reported that he had operated successfully on 2392 children as outpatients for conditions such as hernia, mastoiditis, and talipes, achieving results comparable with those treated as inpatients.¹

His success and ideas were not repeated or followed up until 1955, when Farquharson reported an Edinburgh series of 482 herniorrhaphies carried out on outpatients under local anaesthesia.² He showed that these patients who would conventionally have been kept in hospital for 10 to 14 days were at no greater risk, postoperatively, if they were cared for in suitable home conditions, under supervision from the general practitioner. He emphasised the value to cardiorespiratory function of early ambulation.

In the late 1960s, with a view to reducing waiting lists and to using precious facilities more efficiently, these ideas began to be put into wider practice, and several specifically designed day-bed units were built. It soon became apparent that systems of short-stay and day-care surgery for hernia and varicose veins were safe and convenient in carefully selected patients in experienced hands.³⁻⁶ This was confirmed by controlled trials, which also showed economic benefits.^{7,8} With the development of these units, other specialties such as urology, gynaecology, gastroenterology, haematology, and radiology began to use the offered day-care facilities to widen the scope of their outpatient