Surgical treatment of varicose veins: effect of rationing

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ABSTRACT

INTRODUCTION A substantial part of vascular surgical workload is devoted to the treatment of varicose veins. To control demand for cosmetic venous surgery, primary care trusts in Somerset introduced clinical criteria in 2000 for the referral and treatment of varicose veins based on the presence of skin change or ulceration, a history of bleeding, or two or more episodes of thrombophlebitis.

PATIENTS AND METHODS A comparison of workload and case mix for the referral and treatment of new patients presenting with varicose veins to the Taunton and Somerset Hospital was carried out over two 6-month periods, before and after the introduction of clinically based assessment criteria.

RESULTS A total of 134 operations for varicose veins were carried out in 2000 and 85 such operations in 2002/03 after the introduction of new referral criteria ($P = 0.001$). Of these, 69% (92/134) were day-case procedures in 2000 compared to only 48% (41/85) in 2002/03 ($P = 0.004$). There was no significant difference in the type of cases (e.g. single, bilateral or recurrent surgery) performed as a day-case ($P = 0.34$) or as an in-patient ($P = 0.43$) over the two periods. There was, however, a significant difference ($P = 0.007$) in the mean ages of patients in the two periods (48.5 years in period 1; 57.8 years in period 2) and in the average ASA grade (1.15 in period 1; 1.42 in period 2; $P = 0.0002$).

CONCLUSION The introduction of clinical criteria for the referral and treatment of varicose veins reduced workload by 37%.

KEYWORDS

Varicose veins – Management – Clinical criteria – Rationing

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The assessment and treatment of patients presenting with varicose veins constitutes a large workload for most vascular surgeons. Many patients present with cosmetic symptoms and undergo surgery with a significant recurrence risk.^{1–5} An audit by the Vascular Surgical Society found that 55% of vascular surgeons would operate for cosmetic reasons alone;⁶ the implication is that 45% operate a policy of rationing.

In 2000, the Primary Care Trusts in Somerset asked the two vascular surgeons at the Taunton and Somerset Hospital to recommend essential clinical criteria for the assessment and treatment of patients presenting with varicose veins. The criteria selected were:

1. Skin change (varicose eczema or lipodermatosclerosis) or actual ulceration consequent on varicose veins.
2. Two or more episodes of thrombophlebitis.
3. Bleeding from varicose veins in a pressurised superficial venous system.

The impact of the implementation of these criteria on operative workload was assessed in this district general hospital vascular unit serving a population of 330,000.

Patients and Methods

Data were collected prospectively from clinic letters, the hospital Medical Data Index (MDI) system, the waiting-list database and the operative-procedures database. These were cross-referenced against each other to ensure data validity. Two time periods were analysed: period 1 (pre-criteria) ran from 1 January 2000 until 30 June 2000; and period 2 (post-criteria) from 1 October 2002 until 31 March 2003. Collected data included the diagnostic code, operation performed, surgeon/assistant, ASA grade and whether the admission was as a day-case or in-patient. Only new referrals were evaluated; patients awaiting scans or already

Table 1 A comparison of the type of operation performed in the two periods

Type	Period 1	Period 2
Left leg	49 (37%)	37 (44%)
Right leg	44 (33%)	18 (21%)
Bilateral	29 (22%)	16 (19%)
Recurrent	12 (9%)	14 (16%)
Total	134	85

listed were excluded. The amount of operating time, out-patient capacity and the grade and number of surgeons remained constant over the two periods. All patients listed for an operation had undergone surgery by the time the data were analysed.

The total number of operations was statistically analysed with a normal test assuming Poisson variables. The difference between the mixtures of operative procedures (single limb/bilateral/recurrent) as day-case versus in-patient episodes was analysed using a chi-squared test, as was the average ASA grade. The mean ages were analysed using an unpaired *t*-test. Statistical significance was assumed when $P < 0.05$.

Results

A total of 219 operations were performed in the two time periods, 134 in period 1 and 85 in period 2 ($P = 0.001$; Table 1). Ninety-two of 134 (69%) operations were carried out as day-case procedures in period 1 compared to 41 of 85 (48%) in period 2 ($P = 0.004$; Table 2). However, there was no significant difference in the case mix carried out as a day-case procedure over the two periods as a single limb (74 versus 34; 80% versus 83%), on both legs (11 versus 2; 12% versus 5%) or for recurrent veins (7 versus 5; 8% versus 12%; $P = 0.34$, combined analysis). Similarly, there were no significant differences between in-patient groups assessed by the same criteria over the two periods; single limb 19

versus 21 (45% versus 48%), bilateral 18 versus 14 (43% versus 32%), recurrent 5 versus 9 (12% versus 20%), $P = 0.43$, combined analysis (Table 2). The difference of the mean age of the groups presenting over the two periods was significant (period 1 = 48.5 years, period 2 = 57.8 years, $P = 0.007$). The mean ASA grade was also significantly altered from 1.15 in 2000 to 1.42 in 2002/03 ($P = 0.0002$).

Discussion

Many patients present with cosmetically unacceptable varicose veins, which are otherwise uncomplicated. There are no data to suggest that patients subsequently develop complications such as skin change or ulceration consequent on these cosmetically unacceptable veins;⁷ in the context of a healthcare system struggling to cope with target times and cost issues, it seems reasonable to introduce clear-cut criteria to treat only patients demonstrably at risk.

In 2003, the National Institute for Clinical Excellence published guidelines for referral for varicose veins almost identical to our own, but included the indication of 'troublesome symptoms'. They conceded, however, that 'a link between these symptoms and the underlying varicosities can be difficult to establish'. Asymptomatic varicose veins were not included as an indication.⁸

Our study demonstrates a significant fall in the number of operations carried out to treat varicose veins before and after the introduction of clinically based criteria. A 37% reduction in necessary surgery corresponds well with the 42% reduction in the need for surgical intervention demonstrated in our 'intention to treat' study of 1996.⁹

The implementation of clinical criteria for the referral and treatment of patients with varicose veins has been welcomed by general practitioners in Somerset who find it easier to explain to patients that the Primary Care Trusts will no longer purchase such treatment from the Taunton and Somerset NHS Trust than to make the referral on cosmetic grounds alone. The result is that clinic waiting times for the vascular surgical unit have decreased, allowing earlier appointments for more urgent arterial cases and decreasing the operating theatre time previously dedicated to varicose

Table 2 A comparison of the type of operation in the two periods as day-cases (DC) or in-patients (IP)

	DC Period 1	DC Period 2	IP Period 1	IP Period 2
Single limb	74 (80%)	34 (83%)	19 (45%)	21 (48%)
Bilateral	11 (12%)	2 (5%)	18 (43%)	14 (32%)
Recurrent	7 (8%)	5 (12%)	5 (12%)	9 (20%)
Total	92	41	42	44

vein surgery (from 5 to 3.3 new cases per week). This has allowed patients at greater risk to be treated sooner.

As would be expected, the increasing age and associated co-morbidity of patients presenting with more complicated varicose veins has significantly altered the day-case to in-patient ratio. While the in-patient numbers were almost identical between the two periods (42 in 2000 versus 44 in 2002/03) the day-case numbers fell from 92 to 41. With a significant increase in age and ASA grade, it becomes clear that the main effect of rationing is to reduce the number of younger, fitter patients having predominantly day-case, single limb procedures. A reliable grading system of varicose vein severity would have been useful for the accurate assessment of patients' presenting symptoms but none of the surgeons in the study used such a scheme.

A preponderance of varicose vein referrals during the summer months is well documented¹⁰ and should have led to a greater number of cases in the second (October to March) period of the study, allowing for referral processing time. Such an increase was not seen, leading us to speculate that the effect of rationing was actually greater than that observed.

Acknowledgement

The authors thank Dr Paul Ewings (Taunton Research and Development Support Unit) for statistical assistance.

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