COMMENTARY

Planning for coronary angioplasty: guidelines for training and continuing competence

Consumer protection is the name of the game, and the lay public is increasingly (and rightly) expecting to be protected from the disastrous results of employing “cow-boy” operators in fields as differing as roofing (*Gone with the Wind* followed by *Fiddler on the Roof* as one victim expressed it) or angioplasty.

The platform of consumer protection is supported by three legs: good training, maintenance of continuing competence, and adequate audit. The easiest way of constructing each leg of this tripod is to rely on simple numbers of procedures, but (as the authors of the guidelines recognise) this has many limitations.

Good training—The 100 procedures (50 as first operator) required to become “fully trained” takes no account of complexity of lesion, patient risk factors, aptitude of the trainee, skills (both interventional and educative) of the trainer, not to mention interventional technique (balloon, double wire, kissing balloon, stent, laser, Rotablator, directional atherectomy—to name a few).

Maintenance of continuing competence—Not less than 60 procedures as first operator is recommended, but again this takes no account of lesion complexity and patient risk. Furthermore, fewer procedures will be required to maintain competence in “plain old balloon” angioplasty alone than if the whole interventional repertoire is used.

Adequate audit—This is the final and most important safeguard, and the guidelines are too vague about what is required and too pessimistic about its implementation. As long ago as 1990, the Multivessel Angioplasty Prognosis Study Group published the results of angioplasty in 350 consecutive patients in whom angioplasty was attempted on 1.9 (1.0) (SD) stenoses per patient.¹ Most of these patients had two-vessel disease and well-preserved left ventricular function. In-hospital mortality was 1.1%. Procedural success (< 50% residual stenosis in all lesions attempted with no major ischaemic complications—death, Q-wave myocardial infarct, emergency bypass graft surgery) was obtained in 82.8% of cases, and major ischaemic complications occurred in 8.6%. When a modification of the ACC/AHA Task Force classification of the primary target stenosis was used (with type B prospectively divided into type B1 (having one type B characteristic) and type B2 (featuring two or more type B characteristics),² their analysis of success and complication rates by lesion type yielded the following:

Type	Success (%)	Major ischaemic complications (%)	% of total lesions
A	92	2	28.7
B1	84	4	34.1
B2	76	10	26.6
C	61	21	10.6

Since most UK operators are tackling fewer lesions per patient, with more advanced balloon technology, and have stents available, their major complication rates should be lower and their success rates higher than these

benchmark figures for each category of lesion. To categorise each lesion attempted or treated according to the ACC/AHA classification is not arduous or time-consuming, and can quickly become part of the angiogram reporting routine.

What is much more time-consuming (but highly desirable) is the application of quantitative coronary angiography (QCA) to all lesions before and after angioplasty. Despite all the drawbacks (under-estimation of tight lesions by most of the algorithms currently in use,³ inaccuracies after angioplasty,⁴ difficulties in obtaining orthogonal views without vessel overlap) such a practice will ensure firstly that the lesions being treated are critical, and secondly that the interventionist leaves the lesion less stenotic than he/she found it. The very human trait of over-estimating stenosis severity before angioplasty, and of under-estimating residual stenosis after treatment is well recognised.^{5,6}

Finally there remains the vexed question of patient risk. The last refuge of the destitute is always to claim that the patients treated are all high risk with complex lesions, whereas the true risk lies in the operator. “The fault, dear Brutus, is not in our stars, but in ourselves, that we are underlings”.⁷ Arguably of greater importance, however, is to ensure that patients judged to be at high risk are not denied treatment because an adverse outcome might reflect badly on the operator’s ratings. It would indeed be ironic if audit (intended to improve patients’ treatment) actually prevented appropriate care. What is urgently required is a system that is as simple and as easy to calculate as the Parsonnet score for cardiac surgery.^{8,9}

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