Should vascular surgeons be trained in endovascular techniques? – an observational study

J KRYSA¹, M DOWNES², P TAYLOR¹

¹Department of Surgery, Guy's and St Thomas' NHS Foundation Trust, London, UK

²Department of Clinical Radiology, Kent and Canterbury Hospital, Kent UK

ABSTRACT

INTRODUCTION The aim of this study was to determine if there is a satisfactory cover for interventional radiology and whether vascular surgeons have received sufficient training in endovascular techniques.

MATERIALS AND METHODS This was an observational study based on questionnaires sent to radiology and vascular trainers and vascular trainees in England. A total of 50 NHS trusts were chosen randomly to take part in the study and 320 questionnaires were sent out with an overall consultant response rate of 57%.

RESULTS Of vascular consultants in the study group, 53% have had experience in endovascular procedures. Overall, 87% felt that there were not enough radiologists to fulfil the demand and 64% would like further training in endovascular procedures. In addition, 69% would like to be involved in a vascular rota without the general component. Similarly, 81% of radiologists felt that the demand was not being met, as emergency interventional radiology cover was not available on most nights in 65% of the trusts. Of responders, 72% would not object to training of vascular trainees in interventional work and 43% would be happy to be involved in training. Some 33% would accept a vascular trainee for 1 year.

CONCLUSIONS Integrated fellowship in vascular surgery and interventional radiology has been implemented and tested in a number of centres in the US. This approach could be implemented in some of the larger vascular units in the UK.

KEYWORDS

Training – Endovascular – Radiology – Vascular

CORRESPONDENCE TO

J Krysa, 77 The Lakes, Larkfield, Aylesford, Kent ME20 6SJ, UK
E: jokrysa@aol.com

At the time when interventional radiology was in its infancy, in the 1990s, the skills of radiologists and vascular surgeons were combined to develop a multidisciplinary approach to patient care.¹ It was a sound approach but, in practice, radiologists have been doing the majority of the interventional work in the UK and vascular surgeons have mainly concentrated on open procedures. The reason for this has been 2-fold – lack of training in endovascular techniques available to vascular surgeons and time constraints.²

In the last few years, we have seen a trend towards subspecialty training in vascular surgery. Since an increasing number of vascular patients are undergoing vascular imaging and interventional radiology based procedures, there is an increasing emphasis on the acquisition of endovascular skills amongst vascular surgeons.

The aim of this study was to assess interventional radiology provision across hospitals in England and the views of vascular surgeons and radiologists on the future of vascular services.

Materials and Methods

This questionnaire-based study was conducted between July and December 2005. The study group included all vascular surgeons and interventional radiologists in England. An alphabetical list of all acute general hospitals was obtained from the Internet 'NHS in England' site (<www.nhs.uk/England/AuthoritiesTrusts/Acute/list.aspx>). In order to avoid selection bias, the first 50 (50/175) trusts were chosen to take part in the study (Aintree Hospitals NHS Trust – Hammersmith Hospitals NHS Trust). Each NHS trust has a website from which the hospital telephone numbers and, in certain cases, the names and contact details of the vascular and interventional radiology consultants were obtained. If the latter information was not available, the vascular and radiology secretaries were contacted directly to obtain the names of consultants from the respective departments.

Two questionnaires were designed, one for vascular surgeons and one for radiologists. These were piloted to assess

the clarity of questions. Each consultant was sent two questionnaires – one for themselves and one for their trainee – as well as two stamped and self-addressed envelopes.

Twenty letters were sent as part of a pilot study and the questionnaires were altered accordingly. No radiology trainees responded as none of the radiology consultants in the pilot group had an attached trainee. In an attempt to identify the radiology trainees separately, the Royal College of Radiologists and the radiology societies were contacted but a comprehensive list could not be obtained. Radiology trainees were, therefore, excluded from the study.

As the vascular trainees rotate every 6 months, all letters were sent within a 6-month period to avoid contacting the same trainee more than once.

To simplify data analysis, all the responses were entered into a database specifically designed for the purpose.

Confidentiality was maintained as only the name of the hospital was requested and not the name of the responder. We decided to include the name of the hospital to help identify hospitals suitable for training.

Results

In total, 320 letters were sent to radiology consultants and vascular trainers and trainees. The response rate from the radiology consultants was 58/95 (62%), the response from the vascular consultants was 59/113 (52%) and 32/113 (28%) of the vascular trainees replied to the questionnaire. The poor response from the trainees can be partly explained by the fact that a proportion of vascular consultants did not have a vascular trainee attached at the time of the study.

The responses from the vascular consultants showed that 28/59 (47%) have had no experience in endovascular techniques. The remainder have had a minimal amount of exposure; in 27/31 (87%) cases, the proportion of vascular workload taken up by the interventional radiology procedures was less than 25% (Fig. 1).

Figure 2 shows that out of 46 hospitals, day-time cover for vascular surgery and interventional radiology was available in over 75% of hospitals. Out-of-hours, however, vascular surgery was still well covered in 74% of hospitals but only 35% of hospitals had interventional radiology cover on most nights and the weekends. Of the responders, 80% stated that the demand for interventional radiology services was not being met.

Of vascular consultants, 64% would like further training in endovascular techniques; 71% of them felt that 3–6 months was the minimum training time required (the remainder chose 6–12 months).

A significant proportion (21/59) of vascular consultants did not want further training in interventional techniques. The reasons given include: seven had already had the training, seven felt that they already had enough to do and there was no time to learn new techniques, two said they were too old to learn, three

felt that the current system worked well and radiology was not their territory.

The majority of vascular trainees would like training in endovascular procedures (24/32; 75%). Those who did not included year 1–3 trainees who were undecided about their chosen subspecialty.

A 1-year placement in a radiology department was supported by 95% of vascular consultants who wanted further endovascular training. Of these, 84% would be willing to go abroad for that period. Of vascular trainees, who would like further training, 20/24 supported a 1-year placement. The four registrars, who did not, stated that 1 year was too long. Overall, 21/24 would be happy to go abroad for training.

The final part of the vascular questionnaire referred to the on-call rota. Of the vascular consultants, 53% do a combined general and vascular emergency rota; 42% (13/31) of

these would like to change to a vascular rota. The majority of the consultants who currently do a vascular emergency rota would like to maintain the *status quo* and not become involved in general emergencies (93%). Of the registrars, 31/32 are currently part of a general rota and 9/32 (28%) would like to do a vascular rota only.

The radiology questionnaire assessed the attitudes of radiologists towards training of vascular trainees. Of the radiology consultants, 42/58 (72%) would not object to vascular surgeons training in radiology techniques. Consultants, who did object, felt there was currently a sufficient radiology cover to fulfil the demand (4/16); 10 objected to training of vascular surgeons, as the time should be spent training radiology registrars, three felt that it would destroy interventional radiology as a specialty and one commented that 'clinicians tend to cherry pick cases and leave crap for the radiologists'.

The proportion of the consultant radiologists who would be happy to be involved in training of vascular surgeons was 25/58 (43%; Fig. 3). The minimum of 12 months training time was recommended by 10/25 of the consultants, the remainder felt 6–12 months would be sufficient. Of radiologists who would be happy to train, 19/25 stated that a 1-year placement in their own units would be appropriate. The hospitals in which they work are listed in Table 1. Those who did not want to have vascular trainees in their units commented that there was not enough workload locally to provide sufficient training.

Discussion

Each year, the number of interventional radiology procedures continues to increase as new techniques are being introduced. The number of radiologists, who are able and willing to do vascular interventional procedures,

Table 1 A list of hospitals which could potentially accommodate a 1-year training placement for vascular surgeons (this list is not comprehensive as only those hospitals which took part in the study are included)

Basildon Hospital
Bassetlaw Hospital
Blackpool Victoria Hospital
Bradford Royal Infirmary
Colchester General Hospital
Countess of Chester Hospital
Ealing Hospital
Gloucestershire Royal Hospital
Kent and Canterbury Hospital
Queen Elizabeth Hospital
Royal Sussex County Hospital
Russells Hall Hospital
St Peter's Hospital
St Thomas' Hospital
The Royal London Hospital
University Hospital Aintree
Wycombe General Hospital

especially as part of an 'on-call rota', has not increased sufficiently to keep up with the demand. Of hospitals, 35% have been shown to have inadequate interventional radiology cover at night and at weekends.

Vascular surgeons are keen to learn endovascular techniques, both to meet the service demand and as part of their professional development. They are prepared to spend 1-year training programmes and go abroad if necessary. A significant proportion would like to commit to vascular surgery only and drop general surgery commitments. This would increase time available to train in new techniques.

Based on previous reports,^{3,4} we expected radiology consultants to be against vascular surgeons training in endovascular techniques. This was not the case in this study, as 72% of the consultants had no objections and 43% were keen to be involved in training of vascular trainees. These findings have been re-assuring and 17 hospitals, out of 50 NHS trusts which took part in the study, have been identified as potential training centres.

It is estimated that, in the near future, 40–70% of vascular interventions will be endovascular. Integration of vascular surgery and interventional radiology is feasible and is

mutually beneficial to both disciplines.⁵ As stated by Marin:⁶ ‘The need for vascular surgeons to obtain the knowledge and professional skills to perform wire and catheter techniques is essential to convert the professional threat of endovascular surgery to a future of opportunity’.

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