Reorganization of vascular care in Canada

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The management of vascular disease requires knowledge of clinical assessment, pharmacotherapeutics, endovascular procedures and vascular surgery. In Canada, interventional cardiology, vascular surgery, interventional radiology and neurosurgery specialists may be involved in the care of patients with vascular disease, and they all claim to have expertise and an advantage in treating specific patients. The present article identifies the sources of the potential 'turf war' in vascular medicine, and proposes some possible solutions through reorganization of vascular care, with particular reference to the modern era of Canadian medicine.

Key Words: Atherosclerosis; Carotid arteries; Endovascular therapy; Peripheral arterial disease; Revascularization

THE PROBLEM

Vascular disease (peripheral arterial disease [PAD] and cerebrovascular disease) care has been facing a challenging time within the traditional Canadian health care system. For many years, vascular surgery was the dominant specialty in the management of patients with noncardiac vascular disease. The model used in cardiology and cardiac surgery (eg, having cardiologists and cardiac surgeons discuss cases in weekly rounds) did not seem to apply to other vascular disease. The advent of endovascular therapeutics, our improved understanding of vascular biology and atherothrombosis, and the advancement in medical therapy, have all resulted in the evolution of vascular disease management so that it is not just simply dealt with by surgeons alone. Furthermore, the diagnosis and management of the affected organs (eg, brain, kidneys, gastrointestinal tract, etc) usually require other specialists' assessments in addition to that of a vascular surgeon. When the responsibility of vascular care is not well defined, physicians from multiple disciplines would develop their own guidelines and acquire the necessary skills to become vascular care providers, particularly in performing endovascular procedures in different parts of the body (1-4). 'Turf war' has become a commonly used term among physicians dealing with cerebrovascular disease and PAD in the modern era of medicine (5-7).

THE CAUSES OF THE PROBLEM

The challenging dilemma of vascular disease care in Canada comes from various sources:

1. The availability of endovascular technology has allowed the majority of symptomatic cerebrovascular and PAD patients to be managed by a less invasive approach, often making traditional vascular surgical approaches unnecessary (some examples include carotid endarterectomies replaced by carotid stenting, abdominal and thoracic aortic aneurysm repair replaced by endovascular aortic stent grafting, and lower extremity bypass surgeries replaced by peripheral angioplasty). Traditionally, government funding for high-cost radiological imaging and endovascular equipment is directed toward and limited to medical imaging departments. Vascular surgeons might experience a loss of control of patient management and a reduction in income if their patients are referred to angioplasty rather than traditional surgery. One can imagine that this might lead to biased decisions on the part of the vascular

Réorganisation des soins vasculaires au Canada

La prise en charge de la maladie vasculaire requiert une connaissance de l'évaluation clinique, de la pharmacothérapie, des interventions endovasculaires et de la chirurgie vasculaire. Au Canada, les spécialistes de la cardiologie interventionnelle, de la chirurgie vasculaire, de la radiologie interventionnelle et de la neurochirurgie peuvent participer aux soins des patients atteints de maladie vasculaire et tous déclarent détenir une expertise et un avantage dans le traitement de patients spécifiques. Le présent article identifie les sources potentielles de guerres de territoire en médecine vasculaire et propose des pistes de solutions possibles par une réorganisation des soins vasculaires qui ferait particulièrement appel à la modernité de la médecine canadienne.

surgeons, resulting in a greater use of open surgical approaches for disease, which might otherwise be managed by state-of-the-art, less invasive endovascular techniques. Furthermore, medical therapy for patients with vascular disease, including both primary and secondary prevention, may be left in the hands of busy primary care physicians – which may not be ideal. Compounding this problem is that recent data (8) suggest more than four million Canadians do not even have a family physician!

2. Many patients with cerebrovascular disease and PAD also have coronary artery disease. Indeed, most PAD patients will die from myocardial infarction or stroke, rather than limb ischemia or renal failure (9). As such, many cerebrovascular and PAD patients also receive care from cardiologists or, at least, require some form of cardiological assessment at some point in time. Moreover, vascular disease may negatively impact outcomes of patients with cardiac disease. For example, renovascular disease may cause hypertension, which contributes to congestive heart failure; iliofemoral arterial disease may limit the arterial access for a catheter procedure and the use of rehabilitation programs; symptomatic or asymptomatic severe carotid artery disease creates a risk for ischemic stroke during open heart surgery; and subclavian artery disease may develop in patients with previous internal mammary artery grafting (10,11). Cardiologists claim an 'ownership' of these patients. To further support this point of view, cardiologists likely understand applied atherothrombosis and vascular biology the best, and are familiar with the pharmacotherapeutics for primary and secondary prevention of coronary artery disease, cerebrovascular disease and PAD. Technical skills and previous experience with coronary angioplasty are transferrable to cerebrovascular or peripheral vascular interventions, as reflected by the lower number of supervised procedures required before independent performance is recommended in the practice guidelines for the cardiology specialty compared with other specialties (2,4,12). Hence, many interventional cardiologists believe they are in the best position to provide endovascular treatment for cerebrovascular disease and PAD (10,11,13,14).
3. One main argument in favour of radiologists performing all noncardiac invasive procedures is the centralization of government funding for these procedures. However, the lack of patient contact, plus the fact that radiologists do not provide preprocedural clinical

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assessment and management, or postprocedural care, makes it difficult for interventional radiologists to be a stand-alone specialty in providing vascular care. Furthermore, clinicians, including cardiologists, vascular surgeons and neurosurgeons, claim that it is always better for clinicians who know the patient to perform the revascularization procedures and make clinical decisions, rather than leaving these tasks to a radiologist who sees the patient only at the time of the procedure (10).

4. Although neurologists and nephrologists provide valuable input in the management of these cases, many lack the necessary knowledge and training in vascular medicine, and also may not be the best group to manage patients with vasculopathy affecting other target organs.
5. In Canada, most funding for radiological equipment goes to radiology departments. The inability of interventional cardiologists and vascular surgeons in many Canadian hospitals to gain access to advanced fluoroscopic equipment makes it impossible for fellowship programs in these disciplines to train their fellows in endovascular procedures. Few fellows receive sufficient funding to travel abroad for endovascular training.

The competition among various departments illustrated above generally results in the provision of overlapping and competitive services within hospitals in other countries. In Canada, however, the turf war may also result in underuse of less invasive therapies that could have been offered to patients. Carotid stenting is a good example of this. Interventional cardiologists, vascular surgeons, interventional radiologists and neurosurgeons all claim to have advantages to the provision of therapy for carotid artery disease.

A PROPOSED SOLUTION

What should we do to resolve this problem? A reorganization of departments in the hospitals may be needed. This would require cooperation among personnel from multiple levels, including funding bodies, hospital administrators, department heads and staff physicians. Such a change

may involve setting up a new department of vascular medicine that consists of physicians specialized in atherothrombosis care, diagnostic tests, endovascular procedures and surgical revascularization – a model similar to a cardiac services department in managing ischemic and valvular heart disease. Such an entity could be a stand-alone department in a hospital or a division of a cardiovascular institute. Physicians with an interest in vascular disease, including those from cardiology, vascular surgery, diagnostic and interventional radiology, neurosurgery, neurology, and nephrology, may be members of this department. A similar concept has developed between rheumatology and orthopedic surgery, neurology and neurosurgery, and respirology and thoracic surgery. In Canada, there are already examples of cardiac sciences departments that include cardiologists, cardiac and vascular surgeons, and others.

To break down the barriers, the first step is to improve communication among physicians; this can be accomplished by scheduling biweekly or monthly 'case conferences', where challenging, successful or unsuccessful cases can be discussed. This would allow physicians to bring their knowledge and particular skill set to discussions, so that the best decisions with regard to patients can be made. Through regular communication, it is hoped that the turf issues can be reduced and collaboration can be developed. Trainees interested in endovascular procedures might then receive multidisciplinary training within their home institutions.

Eventually, there will be a need for a new training program in vascular medicine. This may consist of several years of dedicated training in vascular medicine after graduation from medical schools, with an option for endovascular training during the last one to two years of the fellowship. Alternatively, vascular medicine could become a subspecialization of interventional cardiology, vascular surgery or interventional radiology (2).

This proposed change in vascular medicine in Canada will require a tremendous effort and dedication from the hospital administrators, hospital staff, and the fellowship training program directors. Initially, some physician groups may experience changes to their workload and therefore, their income. In the end, however, patients will be the ones who will benefit from the restructuring.

REFERENCES

1. Creager MA, Goldstone J, Hirshfeld JW Jr, et al. ACC/ACP/SCAI/SVMB/SVS Clinical Competence Statement on vascular medicine and catheter-based peripheral vascular interventions. A report of the American College of Cardiology/American Heart Association/American College of Physicians Task Force on Clinical Competence (ACC/ACP/SCAI/SVMB/SVS Writing Committee to develop a clinical competence statement on peripheral vascular disease). *Vasc Med* 2004;9:233-48.
2. Creager MA, Cooke JP, Olin JW, White CJ. Task force 11: Training in vascular medicine and peripheral vascular catheter-based interventions endorsed by the Society for Cardiovascular Angiography and Interventions and the Society for Vascular Medicine. *J Am Coll Cardiol* 2008;51:398-404.
3. Calligaro KD, Toursarkissian B, Clagett GP, et al. Guidelines for hospital privileges in vascular and endovascular surgery: Recommendations of the Society for Vascular Surgery. *J Vasc Surg* 2008;47:1-5.
4. Connors JJ III, Sacks D, Furlan AJ, et al. Training, competency, and credentialing standards for diagnostic cervicocerebral angiography, carotid stenting, and cerebrovascular intervention: A joint statement from the American Academy of Neurology, the American Association of Neurological Surgeons, the American Society of Interventional and Therapeutic Neuroradiology, the American Society of Neuroradiology, the Congress of Neurological Surgeons, the AANS/CNS Cerebrovascular Section, and the Society of Interventional Radiology. *Neurology* 2005;64:190-8.
5. Hopkins LN, Holmes DR Jr, Ramee S. Turf wars and silos – joined at the hip: What can be done? *Catheter Cardiovasc Interv* 2007;69:764-5.
6. Money SR, Sweeney JP, Chong BW. Turf wars and silos – the effect of disruptive technologic innovation in the treatment of cerebral and peripheral vascular disease. *Catheter Cardiovasc Interv* 2007;70:769-70.
7. Levin DC, Rao VM, Bonn J. Turf wars in radiology: The battle for peripheral vascular interventions. *J Am Coll Radiol* 2005;2:68-71.
8. The Daily (June 18, 2008). Canadian Community Health Survey 2007. Ottawa: Statistics Canada:3-9.
9. Hirsch AT, Haskal ZJ, Hertzner NR, et al. ACC/AHA 2005 Practice Guidelines for the management of patients with peripheral arterial disease (lower extremity, renal, mesenteric, and abdominal aortic): A collaborative report from the American Association for Vascular Surgery/Society for Vascular Surgery, Society for Cardiovascular Angiography and Interventions, Society for Vascular Medicine and Biology, Society of Interventional Radiology, and the ACC/AHA Task Force on Practice Guidelines (Writing Committee to Develop Guidelines for the Management of Patients With Peripheral Arterial Disease): Endorsed by the American Association of Cardiovascular and Pulmonary Rehabilitation; National Heart, Lung, and Blood Institute; Society for Vascular Nursing; TransAtlantic Inter-Society Consensus; and Vascular Disease Foundation. *Circulation* 2006;113:e463-654.
10. White CJ, Ramee SR, Collins TJ, Jenkins JS. Global revascularization: The role of the cardiologist. *Int J Cardiovasc Intervent* 2000;3:71-9.
11. Chan AW. Expanding roles of the cardiovascular specialists in panvascular disease prevention and treatment. *Can J Cardiol* 2004;20:535-44.
12. Rosenfield K, Babb JD, Cates CU, et al. Clinical competence statement on carotid stenting: Training and credentialing for carotid stenting – multispecialty consensus recommendations: A report of the SCAI/SVMB/SVS Writing Committee to develop a clinical competence statement on carotid interventions. *J Am Coll Cardiol* 2005;45:165-74.
13. Olin JW, Young JR, Graor RA, Ruschhaupt WF, Bartholomew JR, Gray BH. Role of the cardiologist in peripheral vascular disease. *J Am Coll Cardiol* 1992;19:235-6.
14. White CJ, Ramee SR, Collins TJ, Jenkins JS. Training and Credentialing of Cardiologists in Peripheral Intervention. *Curr Interv Cardiol Rep* 1999;1:298-302.