Pittsburgh and Chicago
As seen in Hospital News

Peripheral Vascular Program Development in the Cath Lab

The introduction of balloon angioplasty in the 1970s revolutionized the treatment of coronary and peripheral vascular disease (PVD). Since this major breakthrough, the diagnosis and treatment of PVD has generally been performed in the Vascular Radiology suite and coronary angioplasty in the Cardiac Catheterization Lab. However, as cardiologists developed their expertise in the coronary circulation, the transition of that knowledge to the peripheral circulation was appropriate. Other reasons cited for the cardiologist's pursuit of peripheral angioplasty include:

- An expansion of personal knowledge and skills
- A response to declining reimbursement
- An opportunity for comprehensive patient management

The influx of cardiologists into the treatment of peripheral vascular disease market is escalating at a rate that has prompted one source to predict that cardiologists will perform 70% of all peripheral vascular interventions within the next ten years. This shift creates management issues for the hospital executive that should be addressed proactively to ensure quality of care, eliminate medical staff turmoil, and minimize capital expenditures.

Interdisciplinary Task Force

Convening a multi-specialty task force with representatives from each medical specialty (i.e. Radiology, Cardiology, and Vascular Surgery) and hospital management to achieve consensus in credentialing requirements, access to resources, and quality monitoring is advocated. Some of the potential outcomes of this process include:

- Formation of an integrated vascular program to reinforce specialty collaboration
- Segregation of a lab that can be used by all specialists
- Procedure performance in separate specialty areas
- Limitation of procedure performance to a single specialty

Training and Credentialing

Credentialing requirements that are consistent with industry recommendations are imperative for consistency in practice and delivery of quality care. The American Heart Association, the Society for Cardiac Angiography and Interventions, the Society of Cardiovascular and Interventional Radiology, and the American College of Cardiology have issued training guidelines for the performance of peripheral angiography. Additional requirements are frequently recommended to assure ongoing competency to include the following:

- Board eligibility or certification by the relevant specialty or equivalent documented experience.
- An understanding of basic vascular biology, indications for therapy, diagnosis and management, and the roles of medical therapy, percutaneous revascularization, and reconstructive surgery.
- Documented attendance at an approved peripheral angioplasty seminar with accumulation of CME hours.
- Preceptorship by a credentialed practitioner for a pre-determined number of cases.
- Agreement to participate in an ongoing quality assessment program including submission of patient demographics, indications, and outcomes to a registry that has frequent peer review against national standards.

Ongoing certification should be contingent upon the performance of sufficient procedural volumes to assure competency, ongoing CME attendance, and demonstration of satisfactory outcomes.

Equipment and Inventory

Hospital administrators making the decision to decentralize peripheral angiography performance should consider the space requirements and capital investment necessary to support the program. Facility size and resources frequently dictate where the studies are performed. The alternatives include:

- Utilization of a centralized angiography suite by various specialties
- A separate Cath Lab suite dedicated to peripheral angiography
- A multipurpose room suitable for peripheral and cardiac angiography

Manufacturers offer a variety of solutions for organizations interested in investing in a new imaging unit. X-ray units capable of obtaining both peripheral and coronary images feature:

- Digital acquisition, viewing, processing, analysis, and storage
- An exam table capable of pivoting for access to all extremities and remote movement at variable speeds to acquire images
- An imaging chain capable of acquiring clinical information of satisfactory interpretive quality without resorting to multiple exposures or contrast media injections.

Another solution utilizes a single X-Ray unit having two independent C-arms, one for the coronary circulation and another for the periphery. They are exchanged to meet procedural need, thereby eliminating a patient's transfer to another imaging suite, minimizing contrast media injections, and obtaining optimal image magnification and clarity. This alternative is ideal as it does not compromise the image quality for either anatomic area, but has a commensurate increase in price. Additionally, the space requirements for this type of unit average approximately 600–700 square feet, which may be problematic in departments facing space constraints.

Quality Monitoring

Practitioner participation is essential for quality monitoring and improvement. Indications for procedures, success rates, and thresholds for complications have been extensively documented in the professional literature and may be utilized to assess individual operator, specialty, and departmental outcomes. Reliance upon an ongoing quality monitoring process will serve to minimize specialty driven issues surrounding quality of care delivery and will assist the organization in maintaining compliance with external review.

The demand for peripheral vascular services will continue to increase with the aging of the population and hospitals will need to respond accordingly. Technology change is fueling the need to address the function of existing programs and apply a structured response to meet the peripheral vascular patient's needs within an environment with strained resources.

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