

# Vascular Surgery Education in India: Serious Problems

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## ABSTRACT

In India, the first vascular surgery department was founded in 1978, and the first peripheral vascular surgery residency program was launched in 1985. Vascular surgery has nevertheless developed slowly in India. Vascular surgery is not well-liked by medical students due to the general notion that vascular disorders are rare and that vascular reconstruction produces subpar results. Only 10 medical colleges have specialized sections for vascular surgery; as a result, the majority of students lack sufficient knowledge of vascular illnesses and available treatments.

Due to a lack of knowledge, vascular issues are delayed in diagnosis, which has a poor consequence. Open surgical procedures are well taught to students, while endovascular training is still insufficient. Because it is expensive and vascular surgeons cannot access catheterization laboratories, endovascular treatment has not increased. By opening more training facilities in private hospitals, establishing vascular services across the nation, launching a national awareness campaign, and hosting more continuing medical education workshops and programs for general surgical trainees, the Vascular Society of India (VSI) has suggested ways to address these issues. For the vascular trainees, VSI has been hosting endovascular workshops. It has also made arrangements for fellowships overseas in reputable vascular departments. In order to expand the training options for aspiring vascular surgeons, VSI looks forward to engaging in active communication with the World Federation of Vascular Societies.

## 1. INTRODUCTION

### History of Vascular Surgery

India has been sluggish to advance in vascular surgery. In the early 1970s, very few surgeons attempted vascular surgery. Doctors P. K. Sen and G. B. Parulker conducted innovative research on aortoarteritis and published numerous articles. [1,2] In Rutherford's textbook on vascular surgery, second edition, Dr. Parulker served as the editor of the chapter on

aortoarteritis. [3] At PGI Chandigarh, a prestigious postgraduate institution in North India, Dr. S. K. Khanna occasionally performed vascular surgeries. Only Dr. Vira Reddy and Dr. Varadarajan performed vascular surgery in South India.

In order to treat patients with lower limb ischemia brought on by Buerger's disease, Dr. Reddy explored arterializing the popliteal vein by establishing an arteriovenous fistula. He referred to these individuals as having "South Indian arteritis" since the proximal artery obstruction in several of them led to misunderstanding over the diagnosis. [4,5] Later, when Dr. Shionoya of Japan displayed a similar illness pattern, it was clear that all of these patients had Buerger's disease and that the diagnostic standards for this condition need revision. These surgeons all practiced vascular surgery on a part-time basis and were either general surgeons or heart surgeons.

Many of my general surgery colleagues were perplexed as to why I would quit a successful general surgical practice and join a department "specializing in amputations" due to the intense hostility to this new approach. It took several years of arduous labor to remove that stigma.

However, the influential cardiothoracic lobby fought adamantly against the separation of vascular surgery and came dangerously close to influencing the Medical Council of India, the entity in charge of regulating medical education in India. To persuade them that vascular surgery is distinct from cardiothoracic surgery and that vascular surgeons do not pose a threat to them, another round of lobbying and case presentations were necessary.

### **Pattern of Vascular Diseases**

Young people are smoking more frequently and developing nicotine addiction at an alarming rate. While those with atherosclerosis are typically wealthier and smoke cigarettes, those with Buerger's illness typically smoke beedies, which is raw tobacco folded in a leaf. It is important to look into how nutrition and infection affect this difference. Many of our patients have proximal major vascular involvement and Buerger's disease. Segmental in nature, limb salvage is achievable with bypass to a patent arterial segment. [6,7] Aneurysmal disease is quite rare. Young patients with type 4 idiopathic thoracoabdominal aneurysms frequently appear with a brief history, and the rest of the vascular tree is unaffected. A biopsy of the aneurysm wall did not reveal any inflammation or atherosclerotic alterations. Rapid growth and rupture are frequent.

India is regarded as the world's diabetic capital since diabetes mellitus is so prevalent there. In India, there are over 40 million diabetic people, and by 2020, it's predicted that nearly 15% of the population would have the disease. The majority of diabetes patients arrives too late and have significant ischemia from tibial artery blockage as well as toe ulcers or gangrene. Aortoiliac blockages are rather uncommon.

### **Current Status of Vascular Surgery**

The femoropopliteal or tibial bypass is the vascular reconstruction procedure that is carried out most frequently. Many of the reconstructions in diabetes individuals are done close to the ankle. Many of these patients have their limbs amputated without receiving a complete vascular assessment because many of the older surgeons continue to hold the outdated belief that microvascular occlusion prevents vascular reconstruction from working in diabetic patients.

The majority of nonvascular surgeons solely perform sympathectomy on these individuals. Some surgeons have performed tibial corticotomies and omentopexies and reported positive

outcomes. Many of these patients are underprivileged, resume smoking after the procedure, experience recurrence, and eventually need to have a limb amputated. Sadly, despite Buerger's disease being the most frequent cause of limb ischemia, atherosclerosis receives a lot of attention and Buerger's disease and its prophylaxis receive very little. The majority of people in India do not have health insurance and are responsible for covering their own medical expenses. This has been the most crucial aspect in choosing the best course of treatment for these patients. Open surgery is frequently preferred over an endovascular alternative since it is the more cost-effective treatment option and will provide long-lasting benefits.

The fact that vascular surgeons frequently lack access to the catheterization laboratory is another reason why there hasn't been an increase in the frequency of endovascular interventions. Vascular surgeons are not permitted to use the angiography laboratories, which are always under the control of the radiologist or cardiologist in all older institutions and medical schools. The catheterization laboratory is accessible to vascular surgeons in private hospitals.

### **Current Status of Vascular Education**

The National Board of Education, a different independent organization that oversees medical education in India, consented to launch a separate Fellowship in Vascular Surgery, a two-year training program, three years ago. Three locations—two of which are private hospitals and one of which is a medical college—were where this was first established. This fellowship has since been elevated to a three-year Diploma in National Board (DNB) study. This course can now begin at two more centers. Only 10 candidates are trained in vascular surgery annually. The trainees receive adequate hands-on instruction in surgical vascular surgery but insufficient endovascular training during this training. The majority of the time, students who want to learn endovascular procedures must go abroad.

### **Role of the Vascular Society of India**

The remaining professionals are cardiologists, general surgeons, radiologists, and cardiac surgeons. The goal of VSI's formation was to raise awareness of vascular disorders among the general public and the medical community. To create a forum for everyone treating vascular illnesses, non-surgeons such as radiologists and cardiologists were permitted to join as associate members with no voting rights.

The medical community has the misconception that vascular and atherosclerotic disorders are more widespread in Western nations than in the developing world. In order to dispel this myth, VSI has been holding academic conferences in several Indian cities as well as continuing medical education (CME) programs for medical students at different medical colleges. For the benefit of the surgical residents, VSI has been holding practical vascular suturing workshops using animal models.

The two modules of the endovascular workshops for vascular trainees that Cordis has organized include module one, where the trainees perform the procedures on the Mentis simulator (Mentis Inc, Winnetka, Illinois), and module two, where they are permitted to perform the procedures on actual animal models.

Additionally, VSI has made arrangements for a number of fellowships around the globe for the young vascular surgeons to receive training in both open surgery and endovascular operations. However, the number of qualified vascular surgeons in the country is still insufficient. The disease spectrum is evolving along with changes in lifestyle and increased

life expectancy. Due to rising smoking rates and an epidemic-like rise in diabetes mellitus, the number of vascular patients is projected to rise; yet, as of today, we are ill-equipped to address that situation.

### Future Goals

Extremely little is known about vascular illnesses in the general public. A media-sponsored Only 20% of respondents to a media poll had heard of vascular surgery, and none had heard of leg bypass surgery. The Vascular Society of India (VSI) effectively ran a nationwide awareness campaign that included the media, the health minister, and government health professionals. The VSI intends to designate the first week of August as Vascular Awareness Week and hold annual events along these lines.

Because many medical schools do not offer this specialist service, undergraduate medical students and postgraduate surgical trainees do not have enough exposure to vascular surgery. To establish vascular departments in all medical colleges, VSI has made a proposal to the health minister. In all the states without vascular services, VSI has suggested increasing the number of CME lectures and workshops for all surgical postgraduates.

One of the key causes of administrative indifference has been the lack of national data availability. This would support our efforts to persuade our medical peers that vascular disorders are widespread in India.

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