



Opinion

Neuro Endovascular Surgery in Pakistan, a Service Led by Neurosurgeons on the Horizon in Pakistan. A Turf War: Neurosurgery vs. Stakeholders for Pakistan's National Stroke Centre

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It is a joyous moment for the neurosurgical community, and for the patients of Pakistan that the developments for the country's first purpose built national stroke centre has started and one that will usher an era of neurosurgeon led neuro endovascular work that goes beyond stroke. Unsurprisingly, however, there is political resistance that should be brought to the attention of the neurosurgical community.

Stroke is a debilitating pathology, and the devastating impact it has upon functionality is not a stranger to medical professionals. It is for this

reason very recently, one of the Professors of Neurosurgery envisioned a dedicated stroke centre, the first of its kind in the country and one that would see the beginning of a comprehensive endovascular service/surgery (EVS) led by neurosurgeons and train the next generation with a skill that is largely absent in Pakistan. Stroke as an entity had new targeted of thrombolysis and thrombectomy emerge in recent years and fundamental to their development and progression has been imaging. Whilst, thrombectomy and intravenous alteplase are approved treatments for stroke, equally important is the presence of a dedicated stroke centre.¹ No neurosurgery centre in Pakistan has a comprehensive setup and expertise to offer the services of EVS as all senior Neurosurgery Professors and Department Chairs are old school neurosurgeons. The exception to this is the Neuroradiology Department at Lahore General Hospital, which is autonomous and not associated with the new Punjab Institute of Neurosciences (PINS): the former Department of Neurosurgery at

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Lahore General Hospital. The neuroradiology department itself was established alongside the neurosurgery department initially by the founder of neurosurgery in Punjab, Professor Bashir Ahmad and his resident and successor as Professor of Neurosurgery, Javed Majid Mian who in the 1960's and 70's themselves performed all invasive cranial and spinal radiology as was the norm before neuroradiology even became a recognised speciality. Professor Bashir Ahmad's progressive and forward thinking is applauded by all neurosurgeons of Pakistan to date, he had envisioned and recognized the need for a separate and comprehensive neuroradiology service back before neuroradiology itself was even recognized as a speciality in most parts of the word. This was the golden era when neurosurgeons would perform their own ventriculography, angiography, myelography, cisternography, and special X-RAY views of the skull and spine. Indeed, these neurosurgeons were the most skilled 'neuroradiologist' of their time.

When Neuroradiology became an independent speciality, the services were led by the new consultants who were trained radiologists at Lahore General Hospital and they had neuroradiology skills transferred to them by the neurosurgeons. More recently the department had been upheaved and modernized by a Pakistani trained interventional radiologist who on the 23rd of December 2014, successfully treated two patients suffering from ischemic stroke through mechanical thrombectomy and this was hailed as a major breakthrough nationally.² However, there is minimal collaboration with neurosurgeons at PINS and this is an exclusively radiologist led service. Overall, the radiological support in diagnosis of acute stroke is limited to tertiary care teaching hospitals but after office hours MRI facility is not available. This, along with perfusion scans and digital subtraction angiography is virtually non-existent.³

There is virtually no endovascular neurosurgeon in Pakistan and at present those who train abroad, do not come back due to limited resources and a lack of growth in the field as our public sector professorial neurosurgery departments are not equipped to provide EVS.³ The single exception to my knowledge is Dr. Atta Bhatti, who currently works in the private sector in Karachi, in the province of Sindh in Pakistan. He had trained in a post residency 2 years endovascular fellowship in Switzerland.

The honourable Chairman of Jinnah Hospital Lahore who himself is a progressive and visionary individual had asked the Professor of Neurosurgery to begin work for establishing an Institute of Neuroscience which would include the national stroke centre that would cater to the 12 million population of Lahore and become the centre performing the largest number of mechanical thrombectomies nationally. It is to be built analogous to the neurosurgery department of Jinnah Hospital Lahore, which is the teaching hospital of Allama Iqbal Medical College (AIMC). AIMC is one of the most prestigious and competitive institution in Punjab. This stroke centre would be an integral part of the new Jinnah Institute of Neuroscience the planned institute that would function in conjunction with the nationally prestigious department of neurosurgery that has a track record of innovation, pioneering and has on multiple occasions pioneered and introduced state of the art neurosurgery to Pakistan. The stroke centre is planned to be driven by an endovascular trained neurosurgeon. However, the interventionists from other fields have come up with diametrically opposing ideas only to deter the neurosurgeons from delving into a field which they think inherently belongs to them.

Let us reflect here on why such opposition occurs and what the motivations behind it are by taking a brief visit in history. Professor Bashir Ahmad, who is widely considered to be one of the first few neurosurgeons in Pakistan and the first

neurosurgeon in Punjab, had come back after training in Newcastle in the early 1960's. He had established the first Neurosurgery Department at Nishtar Medical College in Multan where he practiced for 4 years before being posted to King Edward Medical College/Mayo Hospital Lahore as Assistant Professor of Neurosurgery in 1966. He was only provided a modest number of 4 beds for neurosurgery in the department of surgery in North Surgical Ward. His posting was met with hostility by the rather famous Professor and Head of Surgery, a general surgeon. Crucially, this was at a time when neurosurgery was newly recognized as a speciality in the West but non-existent in Pakistan. He had rather sarcastically welcomed him by saying 'well, we too have been practicing neurosurgery, it is only really burr holes and not much more is it?'

After a few years, he was relegated to Lahore General Hospital, which at the time was merely a spill over hospital converted from a beggar home. However, what was not anticipated by all the medical professionals against Professor Ahmad was that his hard work, sheer genius, and can do will not take no for an answer personality eventually established Lahore General Hospital as one of the busiest and technologically advanced neurosurgery department in the world, a rank it still holds performing greater than 5000 elective non trauma surgeries annually. It holds the distinction of training nearly half of all Pakistani Neurosurgeons. Professor Ahmad's story which is common knowledge in the medical community of Pakistan emphasizes that neurosurgery as a speciality always had and always will face political opposition from outside its community. Fortunately, what the speciality lacks in numbers makes up for by the dynamic, hardworking, and extremely dedicated warriors it produces by virtue of its training.

Even today neurosurgery will always be under political threat from the opposition, who is anyone that does not want the speciality to lead in service provision. I believe neurosurgeons are

best suited to start neuro EVS in the country and that the constant emphasis on the norms of practice in western countries made by the opposition is flawed. Pakistan is unique, and we cannot generalize western training or working dynamics in our country. Firstly, above everything we should remove the base mentality that we have to emulate the West in anything other than evidence-based medicine and best practice where I believe we are all one nation of doctors (and not East or West) working together to improve care for our fellow humans.

There is no credible empirical evidence that can argue that a neurologist, an interventional neuroradiologist or a neurosurgeon and less so a cardiologist (as some of them perform carotid stenting) is superior to one or the other in terms of outcomes along in neuro endovascular surgery. However, a lot more needs to be taken into account when considering the dynamics of Pakistan and who should lead the service.

Stroke and neurocritical care go hand in hand. Often what we have seen in western developed countries is that stroke care has become hugely interdisciplinary and now there exists a 'stroke physician' who handles the medical management and IV alteplase administration. The stroke physician is trained to handle medical management following clot removal or lysis and this is not something a general physician or untrained cardiologist would do just as they are not equipped to manage ARDS which falls within the realms of pulmonologist and critical care doctors.

As we see a Pakistani general physician and neurologists opt for post residency fellowships in stroke care and not necessarily mechanical thrombectomy from abroad. The mere thought of doing a fellowship just to learn how to care for stroke patients is as laughable as it is impractical for Pakistani neurosurgeons. Their residency alone prepares them comprehensively to provide stroke care due to the high volume of cerebrovascular disease that they are exposed to

in residency alone. This is a speciality that is arguably the most intervention driven and intensive in nature. A stroke can happen at 2am and who is better suited by virtue of the rigors of training to go in for clot removal even in their later age to provide and maintain a service with such antisocial hours? I believe it is the neurosurgeon as that is the only speciality, I have witnessed where majority labour 100 hours a week even into their late forties and fifties. Especially in a country like Pakistan where there is no reimbursement for the procedures they are performing and the only financial compensation is salary alone.

The need to have stroke centres in Pakistan has arrived. Neurosurgeons are in the perfect position to lead this. It makes the most sense financially for our government and ethical for patient care. Bekelis et al (2017)⁴ could not demonstrate a difference in mortality, discharge to rehabilitation, readmission rate and length of stay between 'hybrid' neurosurgeons who perform EVS and have a general neurosurgical practice and the 'proceduralist' who solely focus on neuro endovascular techniques for the treatment of cerebral aneurysms.⁴ If that is the case and we know that no other speciality utilises endovascular techniques like neurosurgery where they can be used in tumours, arteriovenous malformations, fistulas, and spinal vascular pathologies in addition to aneurysms and stroke so if a neurosurgeon can perform endovascular surgery independent of other proceduralists who more often require arrangements with neurosurgeons to clean up the muck when a vessel ruptures. A neurosurgeon who is trained in neuro endovascular surgery is not dependant on any other speciality; thus, it is in the best financial interest of the country. And are we really to disservice such a huge proportion of our population from accessing the best quality of care because in a centre where neurosurgeons are not leading the service it would erode the access, they

have in taking up these techniques for non-aneurysmal pathologies.

One day Pakistan too will have a dedicated stroke physician and it is of hope that the neurosurgeons of the Jinnah Institute of Neurosciences will impart training to fellows from all specialities as a level 4 qualifications of a stroke physician and of neuro endovascular surgery. The latter will allow neurologists and radiologists to be trained as well.

I do feel that there is a more sinister desire by some to monopolise neuro EVS as there is a huge market and earning potential in the private sector. With minimum competition, a small number of individuals can earn in the high millions which is a reasonable estimation that I cannot cite but am sure that members of my community agree with. Our country has no shortage of examples of those who neglected their government public service job in various manners doing private procedures while their registrars were doing the consultants work that was out of their competence. An extreme example is that of those who were posted as by the government in an academic post and would with lie and deceit leave their position in limbo whilst being employed in the Middle East earning money. This would leave a backlog of deserving individuals who were stuck in junior positions as there were no senior positions available. Such examples seem fictional when I narrate them to my friends and colleagues in the UK, as much as I wish these were made-up stories, particularly my latter example, they are however an unfortunate stain in Pakistan's history. Thankfully, after the backlash from doctors, the government tightened its regulations and such instances, though not eradicated are far less in occurrence. The formation of the Jinnah Stroke Centre apart from its main aim of providing care to those who need it the most, free of cost and to an international standard is that it must train our neurosurgeons and anyone else who wants to learn neuro endovascular surgery. It should not be

monopolized for private gains and used merely as a platform by those leading this free public service cause to advance their private practice.

Neurosurgery amongst many other specialities has been developed in Pakistan so much that in the 21st century a general and subspecialist of many specialities can be trained in Pakistan to the standard of the wrongly emulated 'Western' doctor and is often better suited to practice in the public sector of Pakistan as opposed to the 'Western' doctor who very often capitalise upon our nations colonial hangover. We must have a staunch stance as a profession and country to judge each other on their individual merit and qualities rather than solely forming perceptions based upon geography of training.

I believe it is incumbent on the Pakistan Society of Neurosurgeons to take charge and recognize the need for neurosurgeons to lead neuro endovascular work in all parts of Pakistan and facilitates its community in doing so.

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Additional Information

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