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Spinal Surgery in Nepal : A Brief Introduction

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Background of Nepal

Nepal is a small landlocked country in south Asia located between 2 giant countries, China and India. The Himalayas, a range of high mountains, is located in the northern Nepal and serves as a border between Nepal and The Tibetan province of China. Lumbini, the holy birth place of lord "Buddha" is one of the provinces of Nepal and it helps from the southern boundary with India. The total population of Nepal is about 28,000,000 and the population growth rate is roughly 2%. Total fertility is about 4 per woman with a life expectancy of about 61 years. Medical technology in Nepal is not yet well advanced and some medical fields urgently need development. Neurosurgery is one of these.

Spinal surgery in Nepal

Though spinal surgery has advanced reasonably over the last several years, it is still in the developing phase in Nepal. There are a maximum number of varieties of spinal problems afflicting patients, but very few qualified and well trained surgeons are there to help those needy patients. As a result, there are very few centers in Nepal where spinal lesions can be well managed. In Kathmandu (central Nepal), the capital city, there are several hospitals where both qualified and well trained neurosurgeons and orthopedic surgeons are available who can perform the best possible spinal surgeries. Several other cities outside Kathmandu, like Pokhara, Nepalgunj (western Nepal), Biratnagar and Dharan (eastern Nepal) also have a few such centers. However, in the remote areas and in

the country side, where there are probably the most numerous cases of spinal injuries, mainly due to falling injuries, there is hardly anybody who can help those poor and pitiful patients.

Spinal surgery in Nepal is at present being performed by two groups of surgeons, neurosurgeons and orthopedic surgeons, the same as anywhere else in the world. Orthopaedic surgeons greatly outnumber neurosurgeons in Nepal, as is jocularly said that there is only one brain and spinal cord but many bones in a human body. But there is no hard and fast rule regarding which cases are treated by which surgeon. Neurosurgeons in Nepal are involved in performing surgery for degenerative and traumatic spinal problems as well as for spinal tumors whereas, orthopedic surgeons are involved in performing surgery mainly of minor and simple type of spinal degeneration like lumbar disc herniation and management of traumatic spinal cases. In that sense, spinal surgery in Nepal is dominated by neurosurgeons. However, recently orthopaedic surgeons have also recently shown their interest in spinal surgery and are getting better in this field. Nevertheless, spinal tumor is still only within the domain of neurosurgeons. Whoever the surgeon may be, the real question is just how capable are we of managing various types of spinal problems in Nepal.

Spinal problems in Nepal

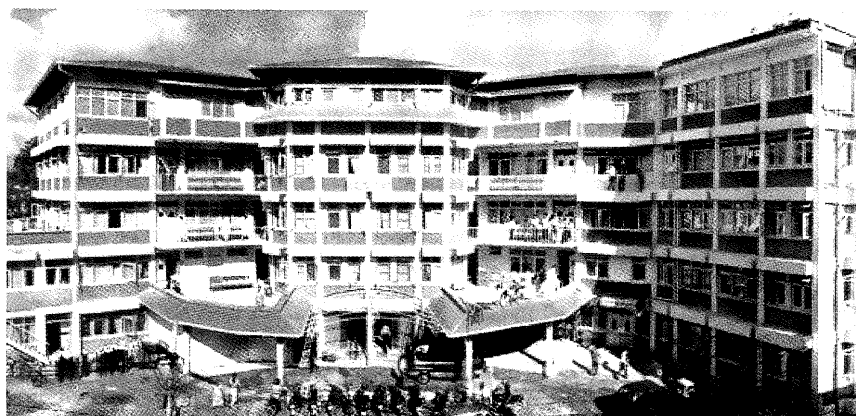
There is no clear accumulated data indicating type, incidence and prevalence of spinal lesions for the whole country. Different hospitals have different data in this regard. However, the pattern of spinal lesions is almost

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▲ Picture of the author



▲ Kathmandu Model Hospital, where the author is supposed to resume his work as a neurosurgeon under Dr Basant Pant

the same in all of these hospitals. Kathmandu Model Hospital (KMH) is one in the few neurosurgical centers in Kathmandu, located in the center of the city, where the author is a team member of the neurosurgical department, the chief being Dr Basant Pant, who also completed his Ph.D. in neurosurgery from Hiroshima University under Prof. Kurisu Kaoru in 1997. Almost every type of spinal decompressive and reconstructive surgery is being performed in this center where orthopedic surgeons are not involved in spinal surgery. According to the data of the neurosurgical department of KMH, spinal surgery accounts for more than 50% of the total neurosurgical operations, which number more than 350 in a year. Among them, degenerative spinal diseases including lumbar and cervical intervertebral disc herniation is the most common. Lumbar disc herniation alone accounts for about 40-50% of total spinal surgeries. Cervical lesions including disc herniation and canal stenosis are the 2nd most common comprising about 15-20% of total spinal surgeries. Spinal tumors, trauma, infectious lesions and congenital anomalies are the other main indications for surgeries. Regarding spinal tumors, according to a study in the university hospital of Nepal, neurofibroma (schwannoma) was the commonest spinal tumor, which was more common in the cervical region, followed by metastatic lesions, which were more common in the lumbar region. Spinal meningiomas were rare and ependymoma followed by astrocytoma were the most common ones among the intramedullary tumors.

Other centers

Other centers where neurosurgical service is available are the National Public Hospital and the University Hospital of Tribhuvan University, the oldest national university in the country. These centers are much bigger than KMH as far as overall setup, neurosurgical manpower, other neurosurgical facilities and numbers of surgical cases are concerned. However, the number and variety of spinal surgeries may be the same or even greater in KMH as compared to these bigger centers. Neurosurgeons as well as orthopedic surgeons are performing spinal surgeries in these centers. Also acute cases like spinal trauma are more common in these centers than in KMH due to easy emergency access. Neurosurgeons are involved in almost all kinds of spinal surgeries including spinal tumor surgery whereas orthopedic surgeons are involved mainly in the degenerative and traumatic spinal surgeries.

There are few other private and non governmental organization (NGO) run centers in Kathmandu and other bigger cities which also provide spinal surgical and rehabilitation service.

Shortcomings in spinal surgery in Nepal

The major shortcoming in the field of spinal surgery in Nepal is spinal vascular surgery. The primary reason for this is an inability to perform spinal angiography which in turn is mainly due to the lack of appropriate instru-



◀ The present team members of the Neurosurgical Department of Kathmandu Model Hospital

ments such as catheters with different angle tips, micro-catheters, micro-guidewire etc, and also due to lack of experts. Therefore, Nepalese patients with spinal vascular lesions generally go to other countries, mainly India for treatment. Another shortcoming is the lack of appropriate instruments especially for the fusion and fixation procedures. Such procedures are often accomplished with steel plates, screws, rods, wires and bone grafts which are more difficult to handle and are not MRI friendly. Proper rehabilitation is another urgent need for spinal patients in Nepal without which surgery alone is worthless. A lack of qualified man power is, undoubtedly, the most important shortcoming in the rehabilitation field.

In conclusion, though spinal surgery in Nepal has significantly improved in the past several years, it still has a long to go way in order to achieve an optimum level of safe and effective treatment. A neurosurgeon might be better suited for procedures involving the spinal cord such as removing spinal tumors, as he is more used to dealing with soft tissues like the brain and spinal cord, unlike an orthopedic surgeon, who mainly deals with the hardest tissues of the body. On the other hand, either of them might be a good choice for operating on spine, a bony cage housing the spinal cord, as long as they have

adequate skill and knowledge.

Also in passing, we have a Hiroshima based organization called "AANI" which, under the auspices of Prof. Kurisu and Ms. Watanabe Tomoko, is strongly and continuously supporting the development of neurosurgery in Nepal. With the active support of the AANI, the "2nd Nepal Japan Neurosurgical Conference" was held in Nepal in 2006 and a 3rd one is being planned for November/December, 2008. Prof. Kaoru Kurisu, Prof. Kazunori Arita from Kagoshima University, and Prof. Hori Tomokatsu from Tokyo Women's Medical University, who along with other Japanese neurosurgeons, are frequent visitors to Nepal in support of the teaching and learning process. Similarly, with the support from AANI, we were able to invite Prof. Taira Takaomi from Tokyo Women's Medical University to Nepal several times in 2006 to elucidate functional spinal surgery procedures like selective denervation of involved nerve roots, selective tibial neurectomy, selective dorsal rhizotomy etc. in cases of spasmodic torticollis, cerebral palsy etc. I would like to invite and request, through this article, that everybody concerned and interested, join "AANI". "AANI" can be found at <http://www.aani.org.np> or they may be contacted via email at aani@hiroshima-cdas.or.jp.