Development of Scoliosis Surgeries in Nepal: Struggles and Achievements

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Technology in the treatment of scoliosis has burgeoned globally. In resource-rich countries, spinal deformity correction has become less invasive, with significantly reduced complications due to the availability of neuromonitoring, navigation systems for pedicle screw placement, and advancements in postoperative care.[1,2]

Scoliosis is a common deformity requiring surgical intervention, not only for cosmetic reasons but also because of its potential impact on cardiopulmonary function and psychosocial wellbeing. The primary goal of surgery is to halt deformity progression and achieve optimal correction within safe neurological limits. This makes scoliosis surgery inherently challenging, particularly in resource-limited countries like Nepal.

In Nepal, scoliosis surgery began only in 2006. Before this, patients were often managed with bracing or casting using plaster of Paris. These conservative measures were largely ineffective, and many patients developed severe deformities over time.

A major barrier was the lack of trained spinal deformity surgeons. The introduction of spine surgery fellowships in select hospitals has encouraged interest and built expertise, allowing surgeons to perform anterior and posterior correction procedures. These surgeries have shown notable improvements in health-related quality of life for patients.[3]

However, affordability remains a significant obstacle. Implants and surgical instrumentation are expensive, and with no widespread health insurance or consistent governmental support, many patients are unable to afford the procedures. There's an urgent need to develop mechanisms to provide financial assistance and ensure equitable access to care.

Preoperative planning is crucial in scoliosis surgery and requires appropriate imaging, such as full-length spinal X-rays, MRI's, and CT scans, which are not available in many centers. This further restricts where surgeries can be performed safely and effectively.

Early detection is paramount. Regular scoliosis awareness campaigns and school screening programs can lead to early identification of affected children. For example, a 2010 school screening program in Nepal found a scoliosis prevalence of 1.09% among 1,094 children.[4] Similarly, in Eastern Nepal (2016–2017), a study involving 5,505 schoolchildren found 1.1 per 1,000 required referral.[5] Such programs are especially valuable in reducing late-stage presentations.

In the past two decades, Nepal has made notable progress in spinal surgery. Though corrective surgeries remain concentrated in urban hospitals, improved anesthesia, postoperative care, and rehabilitation are slowly making these services available in peripheral regions.

Advanced technologies such as intraoperative neuromonitoring and navigation systems are known to reduce complications, such as pedicle screw misplacement. However, the cost-effectiveness and accessibility of these technologies in Nepal need careful evaluation.

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