

Minimally Invasive Neurosurgery: Changing the Game

Neurosurgery has always been a craft of precision, patience, and small margins. Today, those margins are getting smaller by design. Minimally invasive techniques—keyhole approaches, endoscopic brain and spine surgery, and navigation-guided procedures—are changing how we reach disease and how our patients recover. What once demanded long skin incisions and prolonged recovery can now be achieved through targeted corridors, tiny wounds, and smarter planning. The result is less pain, shorter hospital stays, and faster returns to life.

Keyhole surgery is not merely a cosmetic advance; it is a philosophical shift. We now plan trajectories that spare healthy tissue rather than simply exposing pathology. Endoscopes bring light and depth into narrow spaces, allowing us to treat pituitary lesions, ventricular pathology, and select skull base problems with elegance and economy. Navigation systems fuse preoperative images with the operating field, helping us thread instruments into millimetre-precise paths. Together these tools expand what is possible while reducing collateral harm.

For Bangladesh, the benefits are profound. Shorter operations and quicker discharges relieve pressure on busy wards and reduce financial strain on families. But adoption requires more than equipment; it needs training, mentorship, and a willingness to learn anew. The learning curve is real, and the surgeon's judgement remains paramount. Technology is an amplifier, not a substitute, for clinical wisdom.

Looking forward, minimally invasive strategies will blend with robotics, intraoperative imaging, and outcome-predicting algorithms. Functional procedures, too, are becoming less invasive, improving quality of life with less morbidity. Our task as a society is to democratize these advances—build training programs, share protocols, and adapt innovations to local realities so that every patient, whether in Dhaka or in a distant district, can benefit from gentler, safer neurosurgery.

Minimally invasive neurosurgery changes the game by asking a simple question: how little can we do to achieve the most? That question, answered with skill and compassion, will shape the next chapter of our specialty.

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