



Day Care Neurosurgery: Skill and Technical Advancement

Anita Jagetia¹

¹Department of Neurosurgery, Govind Ballabh Pant Institute of Postgraduate Medical Education and Research, New Delhi, India

Address for correspondence Anita Jagetia, Department of Neurosurgery, Govind Ballabh Pant Institute of Postgraduate Medical Education and Research, 1, Jawaharlal Nehru Marg, 64 Khamba, Raj Ghat, New Delhi 110002, India (e-mail: anitajagetia@gmail.com).

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Lower back problems are increasing worldwide due to changing lifestyle, prolonged use of digital technology, and increased use of diagnostic modalities such as X-rays, computed tomography (CT) scan, and magnetic resonance imaging. Increased diagnostic yield has led to increase in spine surgery. The conventional surgery for spine diseases are gradually shifting to minimal invasive spine surgery (MISS) using endoscope or microscope considering its advantages over surgery with big incision and massive muscle dissection. The biggest advantage is same day discharge unlike many neurosurgical procedures. This helps in cutting the cost of treatment to a major extent, less infection, resuming the work early, and above all, a person can go home same day, as “Home is oasis.”

The microscopic surgery for disc can be done even with the same length of incision as the MISS; however, the muscle dissection and detachment from spinous process in microscopic surgery with conventional retraction of muscle make it a maximal invasive surgery.

MISS needs basic understanding of spine anatomy. As the MISS is emerging as superior surgical procedure for majority spinal pathologies, young neurosurgeon would not have much exposure of detailed spinal anatomy as many anatomical structures in MISS use tactile sensations to localize unlike maximal invasive surgery where visual perception dominates. This would require cadaveric dissections, simulators or anatomy can be understood by cases subjected to open maximal invasive dissections not suitable for minimal exposure. However, use of intraoperative C-arms, navigation with ultrasound, CT scan, and/or robots will be the future to understand the bony details of spine. Navigation and robotic has increased the accuracy of spinal instrumentation and success rate of MISS.

After reading and analyzing the articles by Kumar et al and Dubey and Agrawal,^{1,2} it seems the skills and advancement in

spinal surgery has made day care surgery possible especially for disc surgery. The other day care procedures for spine are ozone nucleolysis, nucleoplasty, etc.³

For complete extruded disc where disc acts as extradural mass, it might be difficult to identify the relation of root with the disc in MISS which can be overcome to some extent by transforaminal disc injection of methylene blue with iodine containing dye (omnipaque) into the disc before giving incision. This makes disc blue and easily distinguishable. Kumar et al described basics of MISS using tubular retractor, nuances, and technique for beginners.¹

Dubey and Agrawal² used posterolateral transforaminal approach for tumor removal, and ultrasound has been used to localize the foramen along with C-arm. Use of tracked ultrasound technology in spine if substantially recognized, the radiation dose can be reduced to all working in the operation room. Use of standalone ultrasound should be cautiously done in spine localization, however, it is commonly used by anesthesiologists to give nerve blocks and lumbar punctures.⁴ Doppler can also be a useful tool to localize vertebral artery in these situations. Authors described the unique reverse lateral mass fixation which can provide better bone purchase.

This second issue of the year should add on to the existing knowledge of the readers and the credit goes to the hard work of authors and the critical, time-consuming efforts of the reviewers.

Conflict of Interest

None declared.

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