Authors’ Reply

Resurgence of day care surgery in Neurosurgery

Sir,

We read with interest, the thoughtful commentary on our article “Is outpatient brain tumor surgery feasible in India” by Vilanilam and Hari.[9] We acknowledge their enthusiasm by adding further insights on the subject. We are also pleased that this review has generated grounds for understanding the rationale behind this concept that continues to be met with some skepticism primarily on account of concerns for the safety of the procedure. When one examines reports on “Outpatient Neurosurgery,” one has to be cognizant to separate intracranial procedures from spinal surgeries.[10] While both encompass the realm of Neurosurgery, they have different risk profiles. Outcomes of individual operations between the two categories also vary and generalizations should be avoided. This is the reason why we focused on brain tumors, detailing the selection criteria, the discharge protocols, healthcare benefits and measures to assess patient satisfaction.[31]

Postoperative Hospital Stay

The duration of the postoperative stay for procedures depends on the operating team, the perioperative care, the patient personality and the support systems available. In their commentary, Vilanilam et al.[3] give details of various factors affecting this decision. Eventually, it should be a mutual decision between the surgeon and the patient, with a streamlined back-up plan for re-admission, should it be needed. Our recommendation is that centers contemplating outpatient intracranial surgery should start with an initial reduction of the postoperative stay to 1-2 days before proceeding to the same-day discharge protocol. It is also prudent to interpret data from the western world with caution and not directly extrapolate it to the Indian setting. Differences in the socio-economic status, cultures, patient perceptions, extra-hospital support systems available, and the prevalent hospital policies and health care systems exist in different environments and countries. Thus, one must establish protocols and guidelines that work best for the local environment, keeping the patient’s welfare as the priority.

The Top 25

It is not difficult to fathom that spinal procedures are among the top 25 performed outpatient surgeries. The acceptance and willingness of both surgeons and patients to respectively, perform and undergo these procedures in the day surgery unit (DSU) setting is more for spinal procedures. On the other hand, spinal surgeons are being increasingly incentivized to perform operations in the outpatient ambulatory surgical centers (ASC), and are often part or full owners/shareholders of these centers. In Florida, for example, there was a 50% increase in the number of ASC established between 2000-2007; physicians had a stake (invested) in 83% of them, and outrightly owned 43% of the ASCs.[10] It may not be unreasonable to assume a conflict on interest in such a scenario.

Nonetheless, several recent papers have described the benefits of ambulatory spine surgery. Recently, McGirt et al.[5] analyzed a nationwide, prospective quality improvement registry (National Surgical Quality Improvement Program [NSQIP]) to compare the quality of anterior cervical disectomy and fusion (ACDF) performed in the outpatient versus the inpatient hospital setting. A total of 7288 ACDF cases were identified (outpatient = 1168, inpatient = 6120). After a propensity-matched analysis, rates of major morbidity (1.4% versus 3.1%, \( P = 0.03 \)), and return to the operating room [OR] (0.34% versus 1.4%, \( P = 0.04 \)) remained significantly lower after the outpatient ACDF procedure. ACDF performed in the outpatient setting had 58% lower odds of resulting in a major morbidity, and 80% lower odds of return to the OR within 30 days. Similarly, Pugely et al.[4] compared the inpatient versus outpatient morbidity and mortality, specifically in patients who underwent a single-level posterior lumbar decompression. Data collected from the American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP), for 4310 patients undergoing either inpatient (61.7%) or outpatient (38.3%) lumbar decompression found the overall complication rate to be 5.4% in the inpatient group versus 3.5% in the outpatient group (\( P = 0.0068 \)).

The future

The authors conclude their commentary with a thought on the possibility of performing day-care brain aneurysm clipping and selective amygdalohippocampectomy. There are already reports on the former. Goettel et al.[3] reviewed outcomes of 25 patients who underwent an outpatient repair of unruptured aneurysms under general anesthesia. Seventeen (68%) patients successfully completed day surgery, and 8 (32%) of them were admitted to the hospital after surgery due to perioperative complications. The reasons for the conversion to the inpatient status were a decreased level of consciousness, bradycardia, fever, severe postoperative nausea and vomiting, and the occurrence of seizures. Five patients were discharged to their respective homes the next day. The duration of hospital stay in the protocol failure group ranged from 2 to 18 days. There was no mortality reported in the series.

Their study does demonstrate that surgical clipping of an unruptured aneurysm may be performed in an ambulatory setting. However, more prospective data are required to establish the safety and quality of care of the day care procedure when compared with the standard inpatient approach. Obviously, ruptured aneurysms would not be suitable for this protocol. In order to change to the practice of clipping of unruptured aneurysms in this setting, the established protocol must ensure safety, efficiency, and cost-effectiveness by objective measures compared to the standard inpatient protocols currently being followed at most centers across the world. Using minimally invasive techniques that reduce the surgical trauma, minimize surgical time, improve postoperative outcomes of individual operations between the two categories also vary and generalizations should be avoided. This is the reason why we focused on brain tumors, detailing the selection criteria, the discharge protocols, healthcare benefits and measures to assess patient satisfaction.[31]
recovery, and consequently, shorten the length of hospital stay, the outpatient approach seems to be attainable. To specifically answer the authors’ question, all these are certainly a measure not only of skill and technical advancements, but of holistic patient care that encompasses all different aspects. As far as selective amygdalohippocampectomy in the DSU is concerned, we encourage Vilanilam et al., to lead the way.

Finally, we would like to emphasize that no special surgical skill or even equipment is needed to perform an outpatient craniotomy for tumor resection. All that is needed is a competent, caring surgeon with a progressive attitude, a cooperative nursing and anesthesia team, and patients who have sufficient trust in the medical team and adequate family support.

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References
1. Vilanilam GC, Hari VS. Going home the same day” – Is day care neurosurgery a measure of surgical skill and technical advancement? Neurol India 2017; 65.

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