Commentary on: Is Office-Based Surgery Safe? Comparing Outcomes of 183,914 Aesthetic Surgical Procedures Across Different Types of Accredited Facilities

Hector Vila Jr., MD


Readers may find it surprising that an anesthesiologist has been invited to give a commentary on the recent analysis on safety of aesthetic surgical procedures in various settings. They may find it even more surprising since I was the lead author of a 2003 Archives of Surgery article on office-based surgery safety that found office-based surgical suite (OBSS) surgery 10 times more risky than surgery performed in ambulatory surgery centers (ASC), a study that first opened the discussions on safety concerns of office-based surgical procedures. Although Gupta et al discuss the contrasting results of my previous study vs their conclusion of OBSS being a safe alternative for cosmetic procedures, I think the readers will be further surprised that their findings actually correlate with my own. I urge you to read on for an explanation.

WHAT WE LEARNED

In the article, Gupta et al compared 129,007 patients from the CosmetAssure database who had cosmetic surgeries performed between 2008 and 2013 at hospitals, ASC, or OBSS regarding a limited list of complications and risk factors. From multivariate risk analyses, the authors concluded that complication rates were lower in an OBSS vs an ASC or hospital setting. The article has a number of strengths, including the large size of the data set, its prospective design (patients were enrolled in the data set before surgery), and compliance with reporting. Procedures were limited to only plastic surgeries performed by a selected group of surgeons (American Board of Plastic Surgery certified or candidates), with all procedures performed in accredited facilities. Thus, the surgical environment was similar at all locations. Complications did not include outpatient visits (except outpatient reoperations) or death, and reporting time was limited to ≤30 days. The authors do acknowledge that they were aware of 2 deaths (1 in a hospital and 1 in an ASC).

COMPARISON TO PREVIOUS REPORTS

From my initial report on OBSS in 2003, further studies have been diverse regarding treatment groups and procedures. Fleisher et al reported on 564,267 Medicare patients studied from 1994 to 1999 and found a slightly higher risk in an OBSS vs an ASC setting. However, in contrast to the subject study by Gupta and associates, the Medicare patients were older, had more comorbidities, and underwent a variety of surgeries that did not include cosmetic procedures. The Hoefflin study, Morello study, and Keyes study all compared favorably in outcomes to the subject study, with all 3 including patients from plastic surgery databases with similar surgeons and notably similar facility accreditation. Morello et al reported on 400,675 procedures
with a complication rate of 0.47% compared with 1.9%, in the subject study. However, this lower complication rate was not entirely surprising due to the retrospective nature and voluntary response based on a questionnaire format.

In my outcomes analyses from 2003, we found higher complication and death rates in OBSS compared with ASC. On the surface, it may appear that these results are different from those presented in Gupta et al, but I do not think they are. In fact, we noted that most of the OBSS deaths came from unaccredited offices, and my study reported on all surgical procedures, not just cosmetic ones. Therefore, although it may be improper to compare a cohort of accredited facilities with a cohort that included unaccredited and accredited offices, standing out is that most of the bad outcomes in the 2003 analyses were from unaccredited offices.

SAFETY

Comparisons to airline safety are not only relevant but illustrative. I am writing this while flying at 700 mph and 37,000 feet with safety that far exceeds that in a slower vehicle at ground level. I think few would be concerned whether their next flight was in an Airbus, Boeing, or McDonnell Douglas plane. They are all built to the same standards and have similar safety records. Other factors influencing safety, such as pilots, weather, and equipment, are analogous to the perioperative factors of surgeons, patient comorbidities, and risks associated with a particular procedure. By standardizing these factors, the Gupta et al study has demonstrated that the physical location is not important as long as the same standards are used. Indeed, in the OBSS setting reported in their study, with a specific set of surgeons, a specific set of procedures, and a location standardized due to the requirements mandated by CosmetAssure, as well as possible bias due to triage practices of the surgical team, complication risks were lower than in a hospital or ASC setting.

What is of further interest is that, in this article, OBSS safety was shown to be similar to, or even better than, the other “accredited” facilities. However, accreditations are not always the same. OBSSs are accredited under American Association for Accreditation of Ambulatory Surgery Facilities (AAAASF) regular or non-Center for Medicare and Medicaid Services (CMS) standards, whereas nearly all ASCs and hospitals are accredited under CMS standards. The (AAAASF) regular standards include about 350 items, whereas the CMS standards contain approximately 660 items.

In general, airlines have improved safety while balancing cost, whereas medicine has not always done so. Although some well-intended individuals may have the opinion that it would be safer to fly with a parachute, extra engines, and extra fuel, it would not measurably improve safety and the cost would limit access to travel. In my opinion something analogous has occurred in medicine. I was the Vice President for standards for the AAAASF and had the opportunity to ensure that regular standards would be based on outcomes reported via the mandatory AAAASF reporting system. I often felt CMS standards were not evidence-based and did not measurably improve safety, and this study, with its results demonstrating lower complication rates at accredited OBSS than at hospital facilities, could support that conclusion. However, because the authors have not definitively reported on the accreditation status of the various facilities, my opinion is based on typical accreditation practices and not on scientifically reported data. Future studies should resolve this important question, which has the potential to have dramatic cost savings critical to maintaining access to care and reducing national healthcare expenditures.

SUMMARY

So where do we go from here? As someone obviously concerned about the safety of procedures performed in offices, I think we now have the data to prove that it is not “where” but “how” surgical procedures are performed that dictate safety. Is it finally time to drop the term “office” before surgery and replace it with “accredited facility”? But recognition of an office as accredited is only an intermediate step, as it is not the magic of accreditation but the adherence to standards that drive safety. After accreditation, the greatest threat to life from ambulatory surgery probably comes from cardiopulmonary complications related to patient selection and preparation, anesthesia, thrombotic events, and infections. Future studies will need to focus on these areas. Moreover, this study does not prove something, that is, that more onerous accreditation standards are superior to basic accreditation standards.

Finally, the location of surgery is not as important as the components of clinical care. That is clear with every study that has addressed and compared surgical locations vs patient risk. With extrapolation, we can ask and answer what matters, as well as what does not matter, as we define the clinical components to safe and affordable surgical care.

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REFERENCES


