

Surgeon fatigue: A factor in intraoperative complications in high volume tertiary eye care center

Dear Editor,

Modern medicine is based on the culture of over worked and fatigued health care professionals. The need for continued high-quality patient care, huge patient load, and restricted working conditions, all with a limited supply of health and human resources, often results in fatigue, especially among surgeons.^[1] Among doctors, the fatigue is directly proportional to patient safety mainly in surgeons because the work involved is mostly at the level of intervention. Most surgeons learn to integrate fatigue into their practice without compromising efficiency in work. Ophthalmic surgeons are often tasked with high-volume cataract surgeries. We have conducted a retrospective study in a tertiary eye care center to assess if surgeon fatigue is a significant factor in intraoperative complications in mass manual small incision cataract surgery (MSICS).

Our study included a total of 10989 MSICS performed. Out of these, a total of 177 intraoperative complications (1.61%) were noted during the stipulated time period. Out of 177 intraoperative complications, 74 (41.8%) cases occurred during surgery number 1-15 of surgeons (group A) and 103 (58.2%) cases were of 16 and above (group B). The total number of surgeries conducted in the first group was 6715, of which 74 (1.1%) complications occurred. In the second group, 103 (2.4%) complications occurred out of 4274 surgeries conducted [Table 1]. A highly significant association was

Table 1: Number of surgeries and complications.

	Surgeries performed	Intraoperative complications	P
Group A	6715	74 (41.8%)	0.0001**
Group B	4274	103 (58.2%)	
Total	10989	177 (100%)	

**Highly significant

found between intraoperative complications and the number of surgery performed by a surgeon in a single day ($p < 0.05$).

Fatigue isn't desirable but it is inevitable in the field of medical care. Surgeons face mental and physical stresses throughout their duty hours both in OPD and in the operating room. Ophthalmic surgeons often perform numerous surgeries in a day, especially in tertiary eye care centers with high volume cataract surgeries. According to the guidelines of National Programme for Control of Blindness, few studies have suggested the maximum number of surgery to be performed by a single surgeon in a day to be fixed at not more than 25 surgeries per day.^[2] Along with long hours of surgery, the monotony of the procedure can often lead the surgeon to committing mistakes due to over confidence or a lapse of concentration. Sleep deprivation and emotional stress are other important factors that can often contribute to the surgeon fatigue.^[3,4] Increased surgical time has been correlated with an increased rate of complications in various studies. Venkatesh *et al.*^[5] and Bhargava *et al.*^[6] reported a significant relation between complications and prolonged surgical time in a comparative study between Phacoemulsification and MSICS.

Various researches demonstrate that manual dexterity, strength, and visuospatial ability decrease with age, along with cognitive skills and abilities to sustain attention.^[7,8] The comparison between age groups of surgeons in our study revealed a higher rate of complication among the elder group of surgeons. The 2.82% complication rate among the surgeons >45 years was more than the surgeons who were ≤45 years (1.15%). In Group B surgeries, this difference was evident even though statistically insignificant (1.83% vs 0.60%).

Extensive evidence exists detailing the potentially dangerous effects of surgeon fatigue on patient safety, but few reports exist offering a comprehensive strategy to mitigate the effects of fatigue on clinical performance.^[9] Exploration is required in expanding the scope of practice, scheduling models and new models of care delivery in studies. Necessary steps are essential to avoid errors in the name of patient safety.

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Conflicts of interest

There are no conflicts of interest.

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