

Risk Factors for Loss of Voice and Hoarseness after General Anesthesia at Post-Operative Day 1 in Out Patient Surgery

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Background: Sore throat is common source of patient pain affecting patient satisfaction after surgery. Less is known about the incidence or impact of vocal changes after surgery. The incident of sore throats after general anesthesia are well described with rates of up to 50%.^{1,2} Several studies have described hoarseness after endotracheal intubation,^{3,4} however little is known about hoarseness with other airway techniques. Little is known about loss of voice. We retrospectively analyzed an outpatient surgery dataset to explore vocal changes after general anesthetics.

Methods: The study is approved by the University of Utah IRB. Design; Retrospective EMR review.

Outpatient surgical cases at the University of Utah routinely receive a follow up call on POD 1. The questions; 1) Do you have hoarseness? 2) Did you have a loss of voice? Were asked at that time. We performed a retrospective data including all outpatient surgery call back notes and corresponding airway note from our EMR. These cases was analyzed for reported hoarseness and loss of voice for different airway management techniques. Any patient who received a regional anesthetic or a MAC was excluded. All patients in the data set who received a general anesthetic and an airway note documenting In total 4861 cases met our inclusion criteria.

Results: 6547 cases were analyzed. results are given in tables 1 and 2.

Table 1. Number of airways managed by technique.

| | Number |
|---------------------|--------|
| ETT | 4731 |
| LMA | 1816 |
| Direct laryngoscopy | 4102 |
| Video Laryngoscopy | 514 |
| Light Wand | 23 |
| Fiberoptic Scope | 24 |
| Bougie | 75 |

Table 2. Hoarseness and loss of voice for different airway techniques.

| | % Hoarseness | % Loss of voice |
|---------------------|--------------|-----------------|
| LMA | 8.7% | 2.6% |
| Direct Laryngoscopy | 15.4% | 3.6% |
| Video Laryngoscopy | 16.1% | 3.1% |

| | | |
|------------|-------|-------|
| Light Wand | 34.7% | 17% |
| FOS | 20.8% | 4.16% |
| | | |
| | | |

Conclusion: Patient reported hoarseness and loss of voice are common after general anesthetics for outpatient surgeries across a wide variety of airway management techniques. Hoarseness occurs at a higher rate than loss of voice for all forms of airway management studied. Further studies are needed to understand the incidence and mechanisms of vocal changes, We find evidence of vocal changes with LMA interesting as it is described as a 'supraglottic airway' technique which in theory, has little contact with the vocal cords themselves. The high rates of hoarseness and loss of voice with the use of a light wand warrants further study.

Caution should be used in drawing conclusions from this data as it is retrospective from a single institution.

References

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