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KEY POINTS

- The original purpose of Sellick's maneuver is to prevent aspiration
- Cricoid pressure reduces (if not prevents) gastric insufflation when bag mask ventilating
- There is conflicting evidence on whether cricoid pressure helps facilitate intubation, even when using the term "cricoid pressure" loosely
- There is a valid concern behind the litigious need for cricoid pressure

I asked the Trauma Anesthesiology Society "why do you give cricoid pressure?" I received a number of responses and this is my attempt to organize them in a very brief review of the related literature. While it isn't going to quite make the [GRADE](#), I thought it would be at least useful to start the conversation.

To prevent aspiration

Many of us have had patients aspirate. Prevention of this complication is the classic reason for performing the [Sellick maneuver](#). Sellick described it first in the 1960s and his first study was done on cadavers using up to 100 cm H₂O of pressure.¹ While there is no randomized control trial to show its efficacy, it has been shown to occlude the hypopharynx.² When 30 N was applied to the cricoid ring, an average of 127 mmHg (95% CI: 73-182) of pressure was generated inside the esophagus.³ Doesn't even seem to matter where you put the pressure, Trachea or Thyroid Cartilage, the average pressures generated in the esophagus were 301 mmHg (95% CI 170-378 mmHg) and 239 mmHg (95% CI 117-302 mmHg).⁴ This is potentially enough pressure to cause esophageal rupture when someone retches.^{5,6} Only a randomized control trial would be able to break up the stalemate on whether cricoid pressure is efficacious or not. However, a randomized trial on efficacy to prevent aspiration may be logistically challenging due to the rarity of the event, and how it may be deemed unethical by an IRB.¹

To prevent insufflation of the stomach during bag mask ventilation

Sellick described bag mask ventilation as part of the induction when using cricoid pressure back in 1961.¹ This process was questioned in 1963.¹ However, there is some evidence that Sellick was right. Ruben et al. showed when cricoid pressure is applied that bag mask ventilation doesn't appear to insufflate the stomach, even with using up to 50 cm H₂O of pressure.⁸ While not nearly as impressive as a claim, a much more recent study using ultrasound compared gastric insufflation during mask ventilation with and without cricoid pressure.⁹ They found that there was

significantly less insufflation with cricoid pressure, and that higher pressures were needed to insufflate the stomach when cricoid pressure was used. While these studies (and others) aren't infallible, there appears to be fairly good evidence that it prevents insufflation of the abdomen.

To determine the location of the laryngoscope and endotracheal tube tips

While I have some personal experience, and I have heard anecdotal experience from other physicians, I could not find anything that passed peer review. I found a few things on [balloting](#), but I wasn't sure if this counted.

To facilitate intubation

One of the reasons cricoid pressure has been used is to facilitate intubation. Finding a description of improving view was easy (using a loose definition of cricoid pressure). Cormack et al. described pressing on the larynx back in 1984 when they were first trying to categorize the description of the laryngoscopic view which became the standard.⁹ Later, Knill described the "BURP" procedure back in 1993 to help facilitate intubations.¹⁰ However, some studies have shown that cricoid pressure hinders the placement of the endotracheal tube.¹¹ There are some studies refuting that cricoid pressure causes issues with intubation, and some suggestion that it may have to do with the amount of force applied.¹ Most commentators suggest that 'if cricoid pressure works, great! If it causes problems, lighten it up a bit.'

For litigious reasons

From what I have found, cricoid pressure is routinely referred to as either the standard of practice, or the assumed standard of practice. There is even a case where a judge specifically stated that failure of providing cricoid pressure is irresponsible until the appropriate randomized control trials were performed.¹² If that is going to be what it takes to change legal precedent, it will be impossible to change because of the reasons listed above. If a case of aspiration is taken to court, the performance of a provider will be evaluated on the "the totality of the preventive measures taken to prevent aspiration."¹³ In such of an environment, there is only so many things an anesthesiologist can do; that the exclusion of cricoid pressure will be hard to ignore.

Conclusion

People perform Sellick's maneuver for several different reasons. Some have more evidence behind them than others. However, despite the controversies, it is unlikely the Sellick maneuver will disappear any time soon.

References

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