Hilary P. Grocott, M.D., F.R.C.P.C., F.A.S.E., University of Manitoba, Winnipeg, Manitoba, Canada. hgrocott@sbgh.mb.ca

References

- Asai T: Surgical cricothyrotomy, rather than percutaneous cricothyrotomy, in "cannot intubate, cannot oxygenate" situation. ANESTHESIOLOGY 2016; 125:269–71
- Heymans F, Feigl G, Graber S, Courvoisier DS, Weber KM, Dulguerov P: Emergency cricothyrotomy performed by surgical airway-naive medical personnel: A randomized crossover study in cadavers comparing three commonly used techniques. Anesthesiology 2016; 125:295–303
- Law JA: Deficiencies in locating the cricothyroid membrane by palpation: We can't and the surgeons can't, so what now for the emergency surgical airway? Can J Anaesth 2016; 63:791-6
- Hiller KN, Karni RJ, Cai C, Holcomb JB, Hagberg CA: Comparing success rates of anesthesia providers *versus* trauma surgeons in their use of palpation to identify the cricothyroid membrane in female subjects: A prospective observational study. Can J Anaesth 2016; 63:807–17
- Lang SA: Emergency airway management: What are the roles for surgical cricothyroidotomy and the Ventrain® device? Can J Anaesth 2016; 63:997–8

(Accepted for publication October 26, 2016.)

In Reply:

I thank Professor Grocott for his comments on my editorial¹ on emergency cricothyrotomy. I fully agree with his statement that the major reason for failure in emergency cricothyrotomy is difficulty in identifying the cricothyroid ligament (as I wrote in my editorials^{1,2}).^{1–4} I also agree with his statement that we all should be trained to be competent in identifying the cricothyroid ligament, and I pointed out that training using ultrasonography is effective.^{3,5}

I further agree with Professor Grocott's comments that there is an ongoing evolution in understanding of how to best manage the "cannot intubate, cannot oxygenate" situation, and that there is a swing in opinion away from needle cricothyrotomy to an open scalpel-driven technique. Having said that, I did not intend to advocate abandoning percutaneous route. I stated in my editorial1 that a clear answer cannot be obtained as to whether or not percutaneous cricothyrotomy is truly less effective than surgical cricothyrotomy because randomized controlled studies are lacking. My point was that, in the era of evidence-based medicine, we should make recommendations based on the current state of knowledge and that studies have indicated that percutaneous cricothyrotomy is less effective than surgical cricothyrotomy. In particular, there is growing evidence that the use of jet ventilation through a small-bore needle is frequently ineffective and is associated with a higher incidence of life-threatening complications.^{6,7} What I pointed out was that "the main

reason for choosing surgical cricothyrotomy in an emergency situation is to identify the cricothyroid ligament correctly and quickly," and I recommended a "hybrid" method: when identification of the cricothyroid ligaments is difficult due to a thick tissue over the larynx, we should incise the skin (and subcutaneous tissues) until we can identify the cricothyroid ligament and then puncture the ligament, using a Trocar-type "percutaneous" cricothyrotomy kit.¹

Lastly, I am sure that Professor Grocott would agree with my conclusion remarks made in my editorial that "[e]vidence is still insufficient to conclude which method of cricothyrotomy is more reliable than another" (and thus it is too early to dismiss percutaneous method yet), but "[n]evertheless, the current state of knowledge indicates that surgical cricothyrotomy is more reliable than percutaneous cricothyrotomy as a rescue method in 'cannot intubate, cannot oxygenate' situation."

Competing Interests

The author declares no competing interests.

Takashi Asai, M.D., Ph.D., Dokkyo Medical University Koshigaya Hospital, Koshigaya City, Japan. asaita@dokkyomed.ac.jp

References

- Asai T: Surgical cricothyrotomy, rather than percutaneous cricothyrotomy, in "cannot intubate, cannot oxygenate" situation. Anesthesiology 2016; 125:269–71
- Asai T: Emergency cricothyrotomy: Toward a safer and more reliable rescue method in "cannot intubate, cannot oxygenate" situation. ANESTHESIOLOGY 2015; 123:995–6
- 3. Siddiqui N, Arzola C, Friedman Z, Guerina L, You-Ten KE: Ultrasound improves cricothyrotomy success in cadavers with poorly defined neck anatomy: A randomized control trial. Anesthesiology 2015; 123:1033–41
- Heymans F, Feigl G, Graber S, Courvoisier DS, Weber KM, Dulguerov P: Emergency cricothyrotomy performed by surgical airway-naive medical personnel: A randomized crossover study in cadavers comparing three commonly used techniques. Anesthesiology 2016; 125:295–303
- Ktristensen MS, Teoh WH, Rudloph SS: Ultrasonographic identification of the cricothyroid membrane: Best evidence, techniques, and clinical impact. Br J Anaesth 2016; 117(suppl 1):138–48
- Duggan LV, Scott BB, Law JA, Morris IR, Murphy MF, Griesdale DE: Transtracheal jet ventilation in the 'can't intubate can't oxygenate' emergency: A systematic review. Br J Anaesth 2016; 117(suppl 1):128–38
- Cook TM, Woodall N, Frerk C: Major complications of airway management in the UK: results of the Fourth National Audit Project of the Royal College of Anaesthetists and the Difficult Airway Society. Part 1: anaesthesia. Br J Anaesth 2011; 106:617–31

(Accepted for publication October 26, 2016.)