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Home

Interview with Dr. Peter Biro

By Vladimir Nekhendzy, M.D.



Our guest today is **Dr. Peter Biro**, Professor of Anesthesiology at the Institute of Anaesthesiology, University Hospital Zurich, Switzerland. He is an internationally renowned expert on automated jet ventilation for airway surgery and difficult airway management, and has published extensively on these topics.

Dr. Biro is a member of the **SHANA Education Advisory Board**, and currently serves as Treasurer of the European Airway Management Society (EAMS).

Dear Peter, welcome to the SHANA interview room. Thank you for making time to talk to us.

Peter Biro. It is my pleasure! Glad to be here.

Please tell us a little bit about the University Hospital Zurich, where you practice. It is one of the largest teaching hospitals in Europe, isn't it?

Peter Biro. Yes, it is indeed. The hospital has over 40 divisions and institutes, the Anaesthesiology Institute included (<http://www.en.usz.ch/Pages/default.aspx>; <http://www.anaesthesie.usz.ch/Seiten/default.aspx>). All the facilities are state-of-the-art, and the hospital has been a leader in a wide range of innovative diagnostic and therapeutic techniques. On the surgical side, the areas of particular expertise include cardiovascular and thoracic surgery, neurosurgery, trauma and ICU care. Our hospital has 7 operating units and 32 operating rooms.

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once a year.

We started the program in 2009, and had since trained over 500 M.D.s and nurses in difficult airway management. A current combination of advanced airway training with resuscitation drills has proved very advantageous for our staff members.

Who trains the members of your department?

Peter Biro. The Zurich DID training is conducted and supervised by a group of departmental airway experts. Each 2 hr training session is held in the Airway Management Skills Lab of the Medical Faculty Zurich University, which has the intubation mannequins and a specially designed difficult airway cart (DAC) that we use clinically (we have total 7 DACs in the department). The DAC contains 4 different airway devices, each placed in a separate, color-coded drawer to facilitate easy transition from one technique to another. We find it essential for each drawer to contain only one device, which simplifies airway management in a hectic clinical situation. Moreover, there are no “spare parts”, meaning that each drawer has to be emptied completely if the technique were to be performed correctly! This greatly streamlines the dexterity, and also helps to eliminate the unnecessary waste of the equipment. There is a well-known tendency in many departments to collect and store a vast number of different (yet, frequently useful) airway gadgets in obscure containers, making their existence known to only to a few local aficionados.

What is the format of your DID sessions?

Peter Biro. Each session usually starts with a brief discussion of strategies for managing unanticipated difficult airway, followed by hands-on training on the mannequin. The instructor demonstrates each technique in a standardized, stepwise fashion. Once a learner becomes comfortable with the technique, (s)he is allowed to use 4 consecutive attempts to secure the airway. The cognitive and technical responses to the simulated difficult airway situations are carefully recorded and analysed. Debriefing involves comprehensive discussion of failures or other mishaps, and constructive feedback.

Which advanced airway techniques do you teach during the course?

Peter Biro. The successive use of the 4 techniques is based on the ease of use and the probability of securing the airway quickly. In our department, the primary alternative intubation device is a SensaScope[®], which is an anatomically shaped, semirigid fiberoptic intubation stylet with a video capability. The SensaScope[®] has a steerable tip, which facilitates maneuvering the stylet into the glottic opening.

The second line device is the LMA Fastrach, which affords for both the intubation and ventilation. The main limitation of the Fastrach is that the intubation is performed blindly, and usually requires the manufacturer-supplied ETTs. The third choice is the Laryngeal Tube, which is easy to insert, and can be used effectively as a rescue ventilatory device. Finally, we teach the transtracheal puncture and jet ventilation, which may provide effective rescue ventilation in “cannot intubate-cannot ventilate” situation. It does not provide airway protection, and should be considered the last resort before the surgical airway access.

Don't people get bored of training on the same techniques every year?

Peter Biro. We try to stay abreast of the evidence-based airway teaching and training. The suitability, reliability, efficacy, and finally, the choice of each technique that we teach could be debateable, and we are certainly open to introducing other techniques as we see it fit. However, I think the more is not necessarily better. I feel that teaching a few reliable airway management techniques, especially in a standardized, well explained and easily understood manner may be more important than presenting a wide variety of difficult airway devices. The further development of the Zurich DID as well as its long term impact on training of anaesthesia personnel, and finally on clinical outcome, will be carefully monitored and reported.

Peter, you are the Past President of the European Society for Jet Ventilation, and have published extensively on this subject. Can you provide the trainees in head anesthesia with a simple breakdown of the jet ventilation techniques?

Peter Biro. Certainly. Here are the four images delineating the possible interfaces between the jet ventilator and the patient's airway: supraglottic, infraglottic, transtracheal and via rigid bronchoscope.

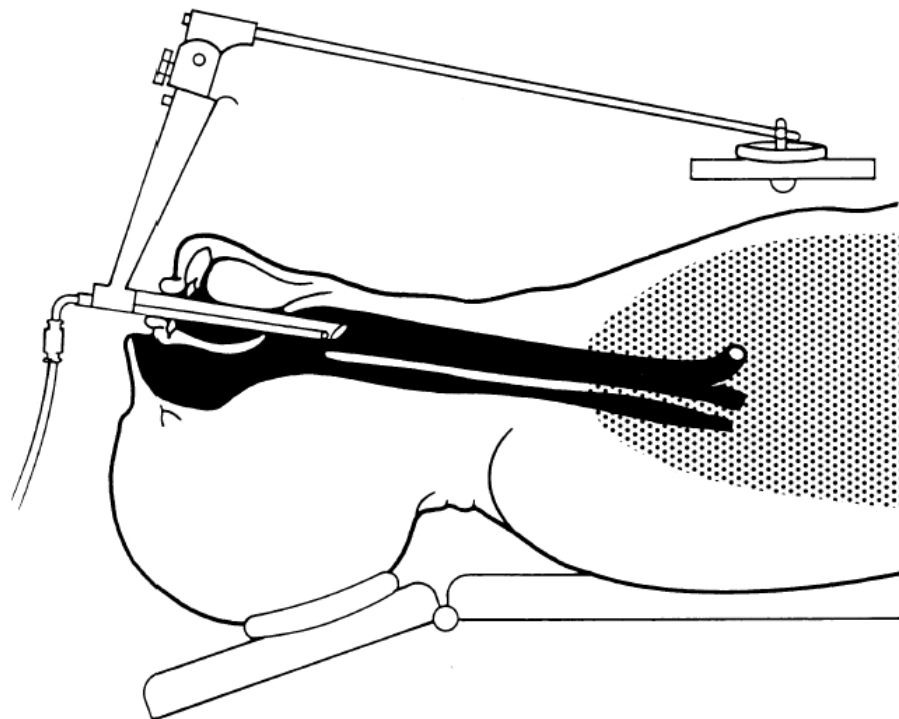


Figure 1. Supraglottic jet ventilation through the surgical laryngoscope.

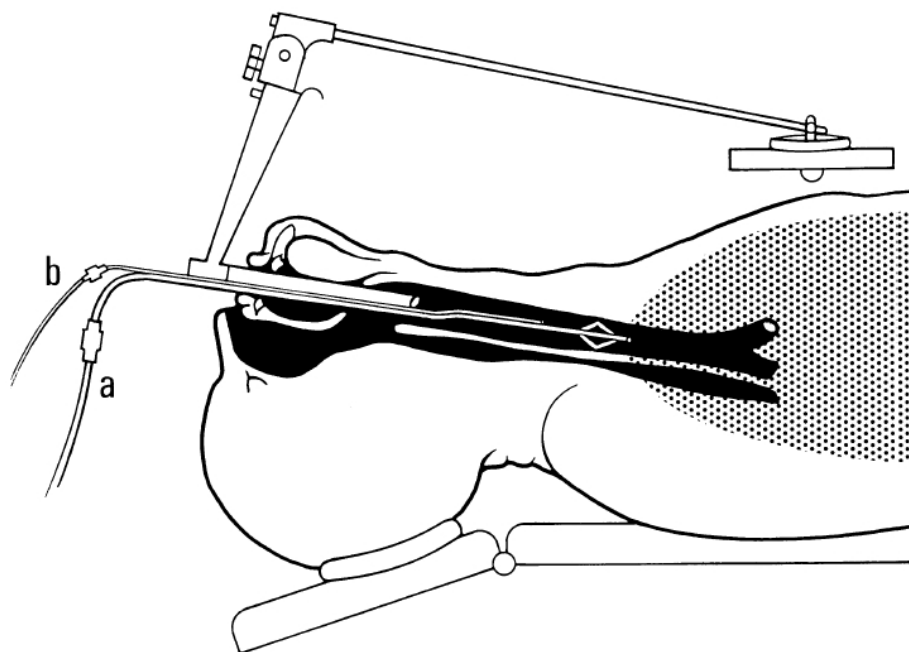


Figure 2. Infraglottic high frequency jet ventilation through the jet ventilation catheter.

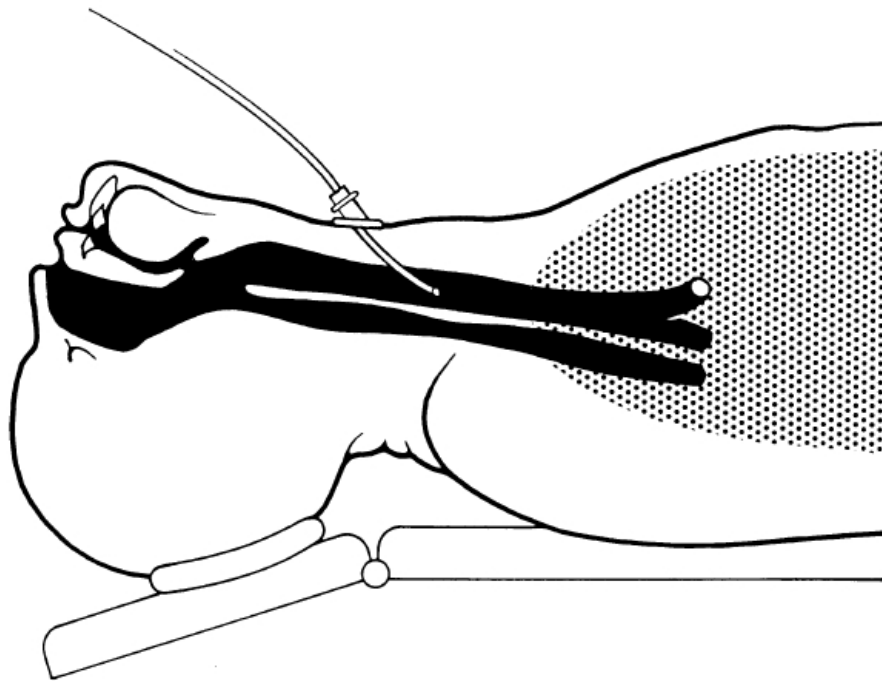


Figure 3. Transtracheal high frequency jet ventilation.

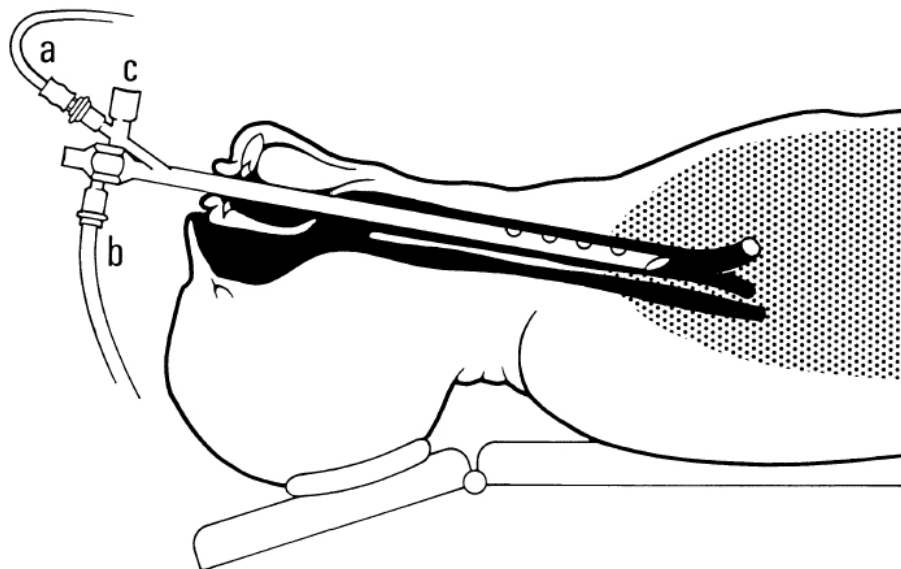


Figure 4. Infraglottic jet ventilation through a rigid bronchoscope.

What are your current research interests?

Peter Biro. The evaluation of the new airway devices has always interested me, and the development and

validation of the SensaScope® has been a lucky charm. I have also become very interested in quality control in anesthesia over the last several years.

Will you be presenting at the European Society of Anesthesia meeting in Barcelona this year?

Peter Biro. Yes, I will be lecturing on OB anesthesia, which is another topic of my clinical interest. Let's call it "an ENT from below". The name of the lecture is "What's New in Caesarean Section".

You are certainly a very busy man, Peter! Tell us, what do you like to do for fun when time allows?

Peter Biro. Oh, this is easy! How about drinking cocktails at the poolside in the presence of beautiful and charming people? Besides that, I love reading, movies, traveling, and listening to a great jazz. As Louis Armstrong once said, "Not too slow, not too fast. Kind of half-fast." Kind of similar to airway management in head and neck anesthesia.



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