only 1 ml. However, if a 2% solution is used for goiter or hernia, an overdose can easily occur. A 0.25% solution is enough in such cases. I tried to impress this on people.

The only problem that occurred with lidocaine initially was among dentists who used metal injection syringes. Traces of metal from the syringe irritated patients' tissues. However, in the hospitals, we used glass syringes, so we did not have this problem.

## **Conclusions**

In a lecture on the clinical development of lidocaine by T. Gordh in 1985, he finished with the following words: "To one who took part in the pioneering research in the pharmacological and clinical action of Xylocaine®, it is gratifying to find that the original observations, may be simple according to modern requirements, stands up so well when apprised in the light of later findings and critiques. In the last analysis, only long documented clinical fitness for use can assure the survival of a drug. Xylocaine® has,

for more than three decades, stood the test as a reliable and highly efficient local anesthetic" (see Supplemental Digital Content 4, http://links.lww.com/ALN/A652).

The authors compiled information, in part, from the first reference, with permission; this article was published to celebrate the 50-yr jubilee of the original synthesis of lidocaine. The present publication also contains excerpts from an interview with T. Gordh, at the time 86 yr.

## References

- Lindqvist K, Sundling S: Xylocaine: A Discovery—A Drama—An Industry. Södertälje, Astra AB, 1993
- Holmdahl MH: Xylocain (lidocaine, lignocaine), its discovery and Gordh's contribution to its clinical use. Acta Anaesthesiol Scand Suppl 1998; 113:8-12
- Goldberg L: Xylocain, ett nytt lokalanestetikum [in Swedish]. Toxiologi och farmaologi. Sv läkartidn 1948; 3:109
- 4. Gordh T: Xylocain, a new local analgesic. Anaesthesia 1949; 4:4-9
- 5. Björn H, Huldt S: The efficiency of Xylocaine as a dental terminal anaesthetic as compared with that of procaine [in Swedish]. Sv Tandläk Tidskrift 1947; 40:831-51

## In Memoriam

## Torsten Gordh (1907–2010)

AROLINSKA<sup>0</sup> Institutet Professor Emeritus Torsten Gordh passed away peacefully June 25, 2010, in Stockholm, Sweden. He was born in Örebro, Sweden, and grew up in Skara, a city in western Sweden. Torsten Gordh nearly reached the age of 103 yr, and his life was in many ways exceptional. He leaves four children: Elisabet Humlesjö, Gunilla Dahlman, Torsten Gordh, Jr., and Josefina Gordh, all with families of their own. His dearly loved wife, Ulla, died in 2005.

In the 1930s, Torsten Gordh planned to pursue a career in surgery after obtaining his medical degree at Karolinska Institutet (Stockholm, Sweden). However, his interest in anesthesiology—a specialty that did not exist in Sweden at the time—was actively encouraged by the institute's surgeon in chief, Gustav Söderlund. From 1938 to 1940, Torsten Gordh worked in Madison, Wisconsin, where he studied and trained with the legendary Ralph Waters. There, he joined a cutting-edge faculty consisting of, among others, Virginia Apgar and Emery A. Rovenstein.

When Torsten Gordh returned to Sweden in April 1940, the new Karolinska University Hospital was built. A major advancement of the new hospital was a permanent position

Accepted for publication September 15, 2010. The authors are not supported by, nor maintain any financial interest in, any commercial activity that may be associated with the topic of this article.

for anesthesiology—the first of its kind in Sweden and other Nordic nations. Torsten Gordh was appointed to a post at the new hospital. The clinical result of this hiring decision did not take long; within a few years, mortality in connection with major laparotomies was reduced by more than 50%.

Subsequent decades of success further demonstrated that Torsten Gordh was the ideal choice. He started educational programs for physicians and nurses. He initiated Swedish and Nordic societies of anesthesiology and was involved in establishing an internationally prominent scientific journal, Acta Anaesthesiologica Scandinavica.

In 1945, Torsten Gordh defended his postdoctoral thesis at Karolinska Institutet and inspired an important development of research in anesthesiology. He was the first to introduce lidocaine in human medicine—an especially significant development for the then-young Astra pharmaceutical company. He was also involved in the final design of the Gordh-Olovson cannula for intravenous use.

In 1964, Torsten Gordh was appointed the first professor of anesthesiology in Sweden. In 1974, he stepped down as clinical chair of the hospital's Department of Anesthesiology, a position he had held for more than 30 yr. At the same time, he was named professor emeritus.

As an anesthesiologist, Torsten Gordh was extremely skilled, but he also displayed an impressive level of dexterity throughout his life in pursuit of his two main hobbies: magic tricks and gymnastics. Not only did he use his magic skills to entertain colleagues from all over the world—in fact, several of us literally "lost" our shirts at parties as a result of his magic tricks. Indeed, many generations of Swedish anesthesiologists remember when he projected images in the ceiling of the main dining room at Koppartälten restaurant in Stockholm using his already then-ancient but well-functioning sciopticon. In addition, Torsten continued to maintain and demonstrate skills in gymnastics well into his 80s, frequently doing cartwheels at international scientific gatherings.

Now that Torsten Gordh has left the scene, an epoch of Swedish and Nordic anesthesiology has ended, and a prominent leader is gone. His contributions live, however, and cannot be overestimated. In the Anesthesiology Hall of Fame, Torsten Gordh has an obvious place.

Thank you very much, Torsten!

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