

# Teaching uniportal VATS in Coruña

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**Abstract:** Uniportal VATS is the newest development in thoracic surgery. Many thoracic surgeons are interested in learning this technique but are unsure as to how to best learn the uniportal approach. Wet lab courses in Coruña, Spain offer an excellent chance for surgeons to learn about and perform their initial attempts at this approach under the supervision of the inventor of this technique. This course offers a balanced framework consisting of didactic content, observation and a skills lab.

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## Introduction

The uniportal surgical approach, utilizing one small incision for video-assisted thoracoscopic surgery has been the greatest advancement in minimally invasive thoracic surgery since the development of the original VATS technique 25 years ago. This technique has been critical in advancing the use of all minimally invasive techniques for the treatment of increasingly complex conditions. It offers visibility akin to open surgery without the pain and morbidity associated with standard thoracotomy incisions. Unlike traditional VATS, there is no reliance on geometric angles or awkward body positioning needed for lengthy cases.

The biggest challenge with this technique has been the dissemination of education aimed at surgeons wishing to adopt this approach. Currently this education is available in a multi-tiered approach that includes case observation, didactic coursework, discussions and the highest level of training, the wet-lab experience. The combined course at La Coruna is the best example of the highest level of training.

Here surgeons spend several days learning about the technique before spending a day in the lab, trying this technique under the close mentoring of the technique's inventor, Dr. Diego Gonzalez-Rivas and several of his Spanish colleagues. This chance to learn at the elbow of the master is invaluable. It also offers a chance to level the playing field in the world of surgical practice, where

some hospitals have million dollar robots and others are just beginning their ingress into video-assisted technology. Any surgeon, from any background can come here, and many do. General surgeons from England rub shoulders with thoracic surgeons from Asia, while surgeons from Africa drop by to ask questions. Surgeons with 20 years of experience share frustrations with junior colleagues who have just begun practicing. This global sharing is unlike any previous phenomena, and adds to the learning experience (*Figure 1*).

## Course framework

The beginning portion of the course is dedicated to didactic coursework which includes the indications and contraindications to using this approach. The didactic content is practical and avoids the application of theoretical models. The technical aspects of the approach are discussed in detail using audio-video materials for illustration. Identifying anatomical landmarks, choosing the site of incision based on pathology and how to position the surgical team are quickly covered in the introduction (*Figure 2*).

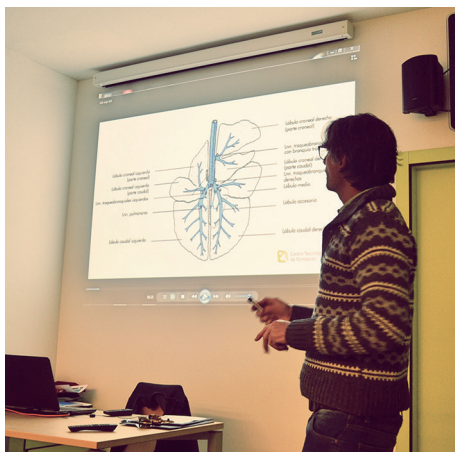
Separate lectures cover diverse topics such as maintaining oncological principles, advanced lymph node dissection for accurate staging, advanced complex resections and managing bleeding complications. Lectures are punctuated with videos demonstrating the techniques (*Figure 3*). During the lectures on bleeding and other adverse surgical events,



**Figure 1** Participants from around the globe at the course in Coruña.



**Figure 4** Students encounter serious complications in a safe setting of the animal lab.



**Figure 2** Classroom review of anatomy during lecture by Dr. Diego Gonzalez-Rivas.



**Figure 5** Dr. Diego assists students during animal lab.



**Figure 3** Teaching uniportal VATS in Coruña (1). Available online: <http://www.asvide.com/articles/831>

videos showing these seeming catastrophic complications buttress frank discussions of how to prepare for and prevent these accidents.

The remainder of the course consists of live surgery observation and a full day in an animal lab where surgeons can practice their newly taught skills. The wet lab also serves as a dramatic reminder of the fundamentals of the class, as several students, including some very experienced ones, quickly encountered difficulties such as accidental perforation of the pulmonary artery, massive hemorrhage or critical oxygen desaturation (*Figure 4*).

This animal lab also allows students to be guided by more experienced uniportal surgeons in a ‘real-world’ environment of living patients (*Figures 5,6*). It also reminds surgeons that their outside and previous experience may be



**Figure 6** Italian surgeons receive assistance and supervision from Dr. Maria Delgado, an expert in uniportal surgery and one of Dr. Diego Gonzalez-Rivas' partners.

of only limited value when learning a new technique. This potentially humbling experience is an important one as it serves to remind surgeons to learn and to practice the basic

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principles taught during the didactic content. For surgeons at facilities that do not currently have surgeons using this technique, this experience is invaluable and irreplaceable.

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### Footnote

*Conflicts of Interest:* The authors have no conflicts of interest to declare.

### References

1. Eckland K, Gonzalez-Rivas D. Teaching uniportal VATS in Coruña. *Asvide* 2016;3:078. Available online: <http://www.asvide.com/articles/831>