

Uniportal video-assisted thoracic surgery course in Mexico—first experience

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Abstract: “The First Minimally Invasive Thoracic Surgery Uniportal Course” in Mexico was held from July 13th to 15th in Mexico City, at the National Institute of Respiratory Diseases (INER). Thoracic surgeons from around Mexico assisted the course. The special guests were the Spanish doctor Diego González-Rivas and the Brazilian doctor Joao Carlos das Neves-Pereira. The course included live surgery and wet lab. Demonstration of the uniportal video-assisted thoracic surgery (VATS) technique was done. The course was a success and Mexican thoracic surgeons were ready to adopt this technique.

Keywords: Video-assisted thoracic surgery (VATS); uniportal VATS; endobronchial hemangioma; uniportal right lower lobectomy

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In recent years, uniportal video-assisted thoracic surgery (VATS) has become widely accepted as the technique of choice for many thoracic surgeons around the world. The reasons are many, but the principal, in my opinion, is the direct view of the instruments and the surgical target. It seems that with uniportal we can get better results in terms of length of hospital stay, overall rate of complications, postoperative pain, paresthesia and duration of postoperative drainage, compared to multiportal VATS (1,2). Uniportal VATS allows to perform basic minimally invasive thoracic surgery and also complex resections (bronchial and arterial sleeve) (3,4). At this time, even the surgery could be performed with a non-intubated anesthesia approach (5).

“The First Minimally Invasive Thoracic Surgery Uniportal Course” in Mexico was held from July 13th to 15th in Mexico City, at the National Institute of Respiratory Diseases (INER). Thoracic surgeons from around Mexico assisted the event. The special guests were Spanish doctor

Diego González-Rivas and Brazilian doctor Joao Carlos das Neves-Pereira. The course was coordinated by Dr. Erick Céspedes-Meneses from the General Hospital “October the 1st”, Institute of Security and Social Services for State Workers (ISSSTE) and Dr. Enrique Guzmán-de Alba, from the INER.

The course was divided in three parts: (I) Masterclass in Uniportal Video-Assisted Thoracic Surgery (VATS), (II) Live Surgery; and (III) Wet-lab.

The course started with the presentation of the conference “fast track rehabilitation in Thoracic Surgery” by Dr. Joao Carlos das Neves-Pereira. After the conference, Mexican thoracic surgeons reported the experience teaching VATS at their Institutions. Experience in uniportal VATS was reported only by one institution: Dr. Erick Céspedes-Meneses at the General Hospital “October the 1st”, ISSSTE in Mexico City. Then, Dr. Diego González-Rivas started the masterclass.

The masterclass is a superb opportunity to learn



Figure 1 Pulmonary hemangiomas, bronchoscopy and chest CT scan. (A) Bronchoscopic image of bronchial hemangiomas; (B) chest CT scan showing right lower lobe bronchial stenosis; (C) chest CT scan showing complete atelectasis of right lower lobe.



Figure 2 Dr. Diego González-Rivas performing uniportal video-assisted thoracic surgery (VATS) right lower lobectomy.



Figure 3 Right lower lobectomy was performed by uniportal video-assisted thoracic surgery (VATS) (6).

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uniportal VATS as Diego explains all the pearls of this technique. The class includes uniportal technique from its beginnings to the most complex resections. Here, you can learn from the position of the incision, to the placement of the instruments through it. It is an interactive class, with no wrong questions, where all participants can discuss the technique and interrupt the speaker at any time.

The second day, we could observe live surgery performed by Dr. Diego González-Rivas.

Case

The case operated was a 31 years old Mexican man, with history of being a worker in the United States. Last year was admitted to a hospital in the United States with moderate hemoptysis and pleural effusion. He was treated with a chest tube and bronchoscopy. Diagnosis was made of intrabronchial capillary hemangioma.

In Mexico, by the time of admission, the patient was complaining of productive cough and hemoptysis. Bronchoscopy showed intrabronchial hemangiomas (*Figure 1A*). Chest CT scan showed bronchial stenosis and atelectasis of the right lower lobe (*Figure 1B,C*).

Surgical technique

Under general anesthesia and left selective bronchial intubation, the patient was positioned in the left lateral decubitus. A single 3 cm incision was made in the 5th intercostal space. The surgeon and assistant were located in the front of the patient (*Figure 2*). As usual in uniportal VATS, the camera was placed in the posterior part of the incision and the instruments were introduced below the camera. A 30°



Figure 4 Mexican thoracic surgeons, Dr. Diego González-Rivas and Dr. Joao Carlos das Neves-Pereira prior to start the wet-lab.



Figure 5 Wet lab. Dr. Diego González Rivas explaining the uniportal video-assisted thoracic surgery (VATS) technique.

high definition camera, endostaplers, and VATS instruments were used. Right lower lobectomy was performed (*Figure 3*). The lung was extracted in a glove. A single 19 Fr chest tube was introduced through the same incision and placed inferiorly at the end of the procedure.

The postoperative course was uneventful. Postoperative

pain was minimal. Chest tube drainage was removed at 24 hrs and the patient was discharged home at 48 hrs.

The last day was held the wet lab at the National Institute of Medical Sciences and Nutrition in Mexico City (*Figure 4*). Thoracic surgeons could practice the uniportal VATS technique with Diego González-Rivas in an animal model (*Figure 5*). This was also very useful because they could experiment with uniportal VATS technique which was new to the vast majority of participants. In addition to Dr. Diego, four skilled Mexican thoracic surgeons, led the participants: Dr. Erick Céspedes-Meneses, Dr. Enrique Guzmán-de Alba, Dr. Francisco Lorente-Ludlow and Dr. José Ruiz-Flores.

Results

At the end of the course, all participants showed their interest to start their practice in the technique of uniportal VATS. Because of with uniportal VATS we have a direct view of the objective to operate, it is easier to adopt than the technique of three or more ports. This direct view is the same as with open surgery.

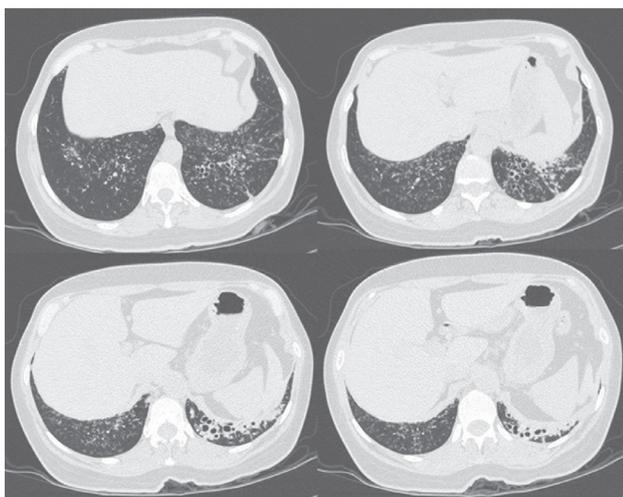


Figure 6 Chest CT scan showing bronchiectasis at left lower lobe.



Figure 7 First uniportal video-assisted thoracic surgery (VATS) lobectomy in Mexico (7).

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Commentary

At this time, only one Mexican center is performing uniportal VATS major procedures (General Hospital “October the 1st”, ISSSTE). Dr. Erick Céspedes-Meneses had the opportunity to attend the International Uniportal VATS Training Program at the Shanghai Pulmonary Hospital in Shanghai, China last year. The experience is extremely rewarding and all thoracic surgeons are encouraged to attend at least once. Previously, Dr. Céspedes-Meneses was performing VATS by the biportal approach. From November 2015 to June 30th 2016, Dr. Céspedes-Meneses has performed 39 procedures, including the first uniportal lobectomy in Mexico on January 12 this year. The case was a 43 years old Mexican female with localized bronchiectasis at the left lower lobe (Figure 6). A left lower lobectomy was performed without complications. Postoperative course was uneventful and the patient was discharged home by postoperative day 4 (Figure 7).

The rest of the results are summarized on Table 1.

Conclusions

Uniportal VATS technique is very intuitive so, in my opinion, it will be the gold standard for minimally invasive thoracic surgery. Because of with uniportal VATS we have a direct view of the objective to operate, it is easier to adopt than the multiportal technique.

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Table 1 Uniportal VATS procedures at General Hospital “October the 1st”, ISSSTE

Procedure	Cases	Conversion	Type of conversion
Decortication (empyema)	12	3	1 case: open procedure 2 cases: biportal procedure
Anatomic lung resections	10	3	2 lobectomy cases: open procedure (major bleeding); 1 lobectomy case: open procedure (aspiration)
8 lobectomies			
2 segmentectomies:			
1 lingulectomy, 1 right apical			
Pulmonary wedge resections	9	0	
Pleural biopsy/pleurodesis	8	0	
Total	39	6	

ISSSTE, Institute of Security and Social Services for State Workers; VATS, video-assisted thoracic surgery.

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Footnote

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

References

1. Qin SL, Huang JB, Yang YL, et al. Uniportal versus three-port video-assisted thoracoscopic surgery for spontaneous pneumothorax: a meta-analysis. *J Thorac Dis* 2015;7:2274-87.
2. Harris CG, James RS, Tian DH, et al. Systematic review and meta-analysis of uniportal versus multiportal video-assisted thoracoscopic lobectomy for lung cancer. *Ann Cardiothorac Surg* 2016;5:76-84.
3. Gonzalez-Rivas D. Uniportal thoracoscopic surgery: from medical thoracoscopy to non-intubated uniportal video-assisted major pulmonary resections. *Ann Cardiothorac Surg* 2016;5:85-91.
4. Gonzalez-Rivas D, Fieira E, Delgado M, et al. Uniportal video-assisted thoracoscopic sleeve lobectomy and other complex resections. *J Thorac Dis* 2014;6:S674-81.
5. Gonzalez-Rivas D, Fernandez R, de la Torre M, et al. Uniportal video-assisted thoracoscopic left upper lobectomy under spontaneous ventilation. *J Thorac Dis* 2015;7:494-5.
6. Céspedes-Meneses E, Echavarrí-Arana JM, Tort-Martínez A, et al. Right lower lobectomy was performed by uniportal video-assisted thoracic surgery (VATS). *Asvide* 2016;3:332. Available online: <http://www.asvide.com/articles/1101>
7. Céspedes-Meneses E, Echavarrí-Arana JM, Tort-Martínez A, et al. First uniportal video-assisted thoracic surgery (VATS) lobectomy in Mexico. *Asvide* 2016;3:333. Available online: <http://www.asvide.com/articles/1102>

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