Uniportal video-assisted thoracoscopic surgery, Argentinian experience

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Abstract: The acceptance of uniportal video-assisted thoracoscopic surgery (VATS) for minor and major thoracic procedures is growing in South America. This study presents the experience with uniportal VATS in Buenos Aires, Argentina. In a retrospective study, 181 patients were operated with uniportal VATS technique between December 2013 and October 2016. Uniportal procedures included minor and major procedures. Uniportal VATS were analyzed en terms of morbidity, mortality, conversion rate, hospital stay. A total of 181 patients were analyzed. 59% were males and 41% females. The mean age was 58.7. The uniportal VATS procedures included pneumothorax 30, interstitial lung 5, complicated pleural effusion 35, pleurectomy biopsy pleurodesis 40, pericardial effusion 10, mediastinal tumor (posterior) 5, wedge resection 30, anatomical segment resection 6, and lobectomy 20. There were 2 conversions in major resection procedures due to technical difficulties. There was 1 revision for postoperative hemothorax. The mean hospital stay was 4.9 days for the whole group. Uniportal VATS is a safe technique in thoracic surgery. Maintains the oncological principles of traditional open procedures. There are lower, few general complications, lower pain level, lower postoperative morbidity and mortality. Reduces surgical trauma, and reduces the postoperative hospital stay.

Keywords: Video-assisted thoracic surgery (VATS); minimally invasive thoracic surgery; single port thoracic surgery; uniportal video-assisted thoracic surgery (uniportal VATS)

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Introduction

The first procedure of uniportal video-assisted thoracoscopic surgery (VATS) was pioneered by Dr. Gaetano Rocco from the National Cancer Institute Naples, Italy, between 2003–2006 uniportal VATS was performed for pleural effusion, pleurodesis, pleural and mediastinal biopsies, and lung wedge resections (1-3).

The major lung resection with radical lymphadenectomy for non-small cell lung cancer, was the first report by Dr. Gonzalez Rivas from Coruña University hospital in Spain, followed by complex uniportal VATS lung resection including lobectomy (4), pneumonectomy (5), segmentectomy (6), bronchoplastic procedures, chest Wall resection and a lobectomy in a non-intubated patient (7-9).

The purpose of this study is to analyze the preliminary first experience of uniportal Vats in Argentina.

I have visited Dr. Diego Gonzalez Rivas, from Coruña University Hospital Spain. Also I have visited important Centers around the World, Charite Hospital in Berlin (*Figure 1*) and the Shanghai Pulmonary Hospital Tongji University (*Figures 2,3*).

Then Dr. Diego Gonzalez Rivas was in Argentina and we have practiced surgery together in my country (*Figures 4-6*).

Methods

A retrospective study was performed for patients undergoing a uniportal VATS procedure between December 2013 and October 2016, 181 patients were included in this study.

Figure 1 Charite Hospital Berlin University.

Figure 2 Shanghai Pulmonary Hospital Tongji University.

Figure 3 Conference in Shanghai Pulmonary Hospital.

We analyzed, the outcome of uniportal VATS in terms of morbidity, 30 days mortality, conversion rate and hospital stay. All the patients provided written informed consent before operation.

Technique

The patients were placed in a right or left sided position as for the posterolateral thoracotomy. All procedures were performed under general anesthesia with single lung ventilation. The 3–5 cm single incision, was placed in the intercostal space. There was no rib spreading used. The 10 mm 30 scope camera

Figure 4 Operating with Dr. Diego Gonzalez Rivas in Argentina.

Figure 5 Uniportal Vats with Dr. Diego Gonzalez Rivas in Cinica San Camilo, Buenos Aires, Argentina.

Figure 6 Dr. Diego Gonzalez Rivas in Hospital E. Tornú, Buenos Aires , First time in Argentina.

Figure 7 Dr. Diego Gonzalez Rivas, Dr. Gustavo Bondulich and Dr. Hector Rivero are in the operating room. Clinica San Camilo, Buenos Aires Argentina (10).
Available online: http://www.asvide.com/articles/1498

was introduced in the posterior part of the incision.

The incision allowed the introduction of more than two instruments beside the scope simultaneously. The surgeon and his assistant stand both in front of the patient. A complete lymphadenectomy was performed in all patients with NSCLC. All tumor specimens were removed with bag. A chest tube K225 was inserted in the posterior part of the incision (*Figure* 7).

Results

The Uniportal VATS was introduced in the world by Dr. Diego Gonzalez Rivas. Dr. G. Rocco from National Cancer Institute, Naples, Italy, used uniportal VATS for Minor Procedures, pneumothorax, mediastinal biopsy, pleural effusion and lung wedge resection (1-3).

Between Dec 2013 and Oct 2016 in the Division of Thoracic Surgery, Htal E. Tornu and San Camilo Clinic, 181 patients, received uniportal VATS procedures performed for different indications.

There were 59% male and 41% female, the mean age was 58.7.

The procedures included minor and mayor procedures. Minor procedures were 155. Pneumothorax 30, interstitial lung 5, complicated pleural effusion 35, pleurectomy biopsies pleurodesis 40, pericardial effusion 10, wedge resection 30, and mediastinal posterior tumor 5. Mayor procedures were 20 lobectomies, and 6 anatomic segmentectomies. Total procedures 181. The mayor lung resection included systematic dissection lymphadenectomy. There were 10 lower lobectomy, 4 middle lobectomy and 6 upper lobectomy. There were 6 anatomical segmentectomy, 2 for metastasis and 4 COPD with tumor NSCLC and severe lung restriction.

The histological finding was NSCLC, in mayor resection. There were 2 conversions in mayor resection due to technical difficulties in one upper lobectomy and the other case was anatomical segmentectomy. There was 1 revision for postoperative hemothorax in mediastinal tumor. No morbid mortality. Mean hospital stay was 5.5 days for the whole group.

Discussion

The evidence has shown that minimally invasive techniques are feasible in thoracic surgery. Uniportal VATS is becoming accepted worldwide for minor and major procedures to treat thoracic and mediastinal pathologies (9,11).

Uniportal VATS is a safe technique in thoracic surgery.

We used previously open surgery in mayor resections, and VATS with 3 ports in minor resections. Then we have indented 2 ports, and finally we have learned and accepted Diego Gonzalez Rivas's technique (12).

We have used conventional instruments at first, but then with the use of double articulation instruments, and Energy Devices helped to make this surgery safer and more comfortable for patients and for surgeons.

The principal advantages of this technique were, less pain, lower general complications and shorter hospitalization. Less postoperative morbidity and mortality. (13-15).

VATS maintains the oncological principles of traditional open procedures. Reduces surgical Trauma and reduces the postoperative hospital stay.

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None.

Footnote

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

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