# Videothoracoscopic approach to stage I non-small cell lung cancer



Ann. Ital. Chir., 2014 85: 525-532 pii: \$0003469X1402291X

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#### Videothoracoscopic approach to stage I non-small cell lung cancer

AIM: Aim of this study is to evaluate the validity of videothoracoscopic staging and treatment in a twenty-year-long series of 286 VATS lobectomies for Clinical Stage I NSCLC.

MATERIAL OF STUDY: We retrospectively reviewed 1549 candidates to resection after conventional staging from November 1991 to December 2013, and routinely submitted to videothoracoscopy immediately before the procedure. Patients deemed operable at videoexploration were resected by thoracoscopy or thoracotomy. Out of 534 VATS resections 286 thoracoscopic lobectomies for clinical stage I cancers were performed with strict indications and standardized technique; more advanced tumours were converted even when thoracoscopically resectable. Impact of preliminary videothoracoscopy and and longterm Kaplan-Meier survival was analyzed.

RESULTS AND DISCUSSION: Out of 1549 patients, videothoracoscopy disclosed inoperability in 62 (4 %), mostly for pleural carcinosis (33pts.-2.1%) or mediastinal infiltration (22pts-1.4%). 534 (34.5%) patients had videothoracoscopic resection (286 lobectomies, 7 pneumonectomics, 241 wedge resections), 919 (59.3%) had thoracotomy resection, 34 (2.2%) had an exploratory thoracotomy (ET). Thoracoscopy had an accuracy rate of 72.4%, was reliable in excluding unresectability (NPV 0.95), and decreased the rate of ETs to 2.1%, sparing 596 (38.5%) thoracotomies. There was no intraoperative mortality or recurrence. Stage I patients had 83.8% 3-yr survival and 64.3% 5-yr survival. Five-year survival was significantly better (p=0.004) for T1NO patients (70%) than T2NO (55%) and for patients younger than 55 (86.4%) or with lesion < 2 cm (80.8%).

CONCLUSIONS: Preliminary videothoracoscopy reliably assesses tumor resectability and feasibility of thoracoscopic resection, limiting unnecessary thoracotomies. Videolobectomies are safe and survival is comparable to open lobectomy.

KEY WORDS: Lobectomy, Lung cancer, Minimally invasive surgery, Thoracoscopy, VATS

## Introduction

The introduction of videothoracoscopic techniques strongly impacted chest surgery. However, while some

simpler procedures are now preferably performed thoracoscopically, VATS major anatomical lung resections are not yet extensively performed. Our first thoracoscopic lobectomy in 1991<sup>-1</sup>, raised vivid interest, but also vigorous discussion regarding the technical difficulties, the steep learning curve and concern on oncologic equivalence to open resection. Over the last decade the procedure has gained popularity, as more consistent results are emerging. The aim of this paper is to offer the results of thoracoscopic approach to lung cancer gathered at our institution over twenty years, particularly focusing on long term results following thoracoscopic lobectomy.

Pervenuto in Redazione Aprile 2014. Accettato per la pubblicazione Luglio 2014

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## Materials and methods

From October 1991 to December 2013, 1549 patients with lung cancer were candidate to resection after conventional staging, which included chest-X-Rays, CT scan of the thorax, upper abdomen and brain, and bronchoscopy. PET scanning, was routinely available to us only since 2005. Mediastinoscopy was carried out in cases of suspected N2 or N3 disease. Patients eligible for surgery were submitted to videothoracoscopy as the first step of the planned surgical procedure, in order to rule out unexpected causes of inoperability, to verify the resectability of the lesion and to evaluate the feasibility of a thoracoscopic resection. At the beginning of our experience we had decided to limit thoracoscopic lobectomy to patients with stage I NSCLC not larger than 5 cm, with no evidence of lobar bronchi involvement at bronchoscopy, no atelectasis and no parietal pleura infiltration at VATS exploration.

Technical details of VATS exploration and lobectomy are described in our previous articles 1,2. In brief, the patient is positioned as for a posterolateral thoracotomy and intubated with a double lumen tube for selective one lung ventilation. The port for the optics is inserted in the 7th intercostal space along the midaxillary line, and another port is positioned posteriorly in the 5th interspace. A 4 to 5 cm long inframammary utility thoracotomy is conducted in the 4th interspace. Thorough exploration requires the complete mobilization of the lung by dividing the pulmonary ligament and possible pleural adhesions, and also implies exploring the artery within the fissure as well. as the mediastinum in order to assess the resectability of the lesion and to decide either for a VATS or an open resection. Further manoeuvres such as dividing the azygos vein or opening the pericardium may be required. For VATS, as for open lobectomies, the lobar artery, vein and bronchus are dissected and stapled separately. No rib spreader is used. The specimen is extracted within a plastic bag to avoid tumour seeding. Lymphadenectomy is conducted with the same criteria as in open surgery and suspect lymph nodes are sent for frozen section examination. If positive, the procedure is converted to an open resection even if feasible thoracoscopically.

Informed consent for the procedure was obtained from each patient at admission.

The patients' clinical notes were reviewed retrospectively. Data on survival and post discharge course were obtained from follow-up records, from the Office of Vital Statistics death certificates or from periodical phone interviews with patients or close relatives carried out using a dedicated form by one of our doctors.

The data, entered in a dedicated database, was analysed with IBM SPSS Statistics 19.0 software, using the Kaplan-Meier method with log-rank test.

### Results

Out of 1549 patients eligible for resection after conventional staging, preliminary videothoracoscopy disclosed unexpected causes of inoperability in 62 (4%), due to pleural carcinosis without pleural effusion (33 patients - 2.1%), mediastinal infiltration (22 patients -1.4%) or intrafissural infiltration of pulmonary artery (7 patients unable to tolerate pneumonectomy - 0.4%). Among the remaining 1487 patients, 534 (34.5%) underwent a videothoracoscopic resection (286 lobectomies, 7 pneumonectomies and 241 wedge resections). VATS did not reveal or confirm inoperability in 953 patients who therefore underwent thoracotomy (649 lobectomies, 158 pneumonectomies, 35 tracheal-sleeve pneumonectomies, 77 wedge resections). Thoracotomy disclosed inoperability unrevealed by preliminary videoexploration in 34 patients (exploratory thoracotomy rate = 2.2%). Out of these, in 4 (0.2%) initial cases thoracoscopy had been inadequately carried out, whereas in 7 (0.4%) thoracoscopy had suggested but not confirmed the unresectability of the lesion for infiltration of the aorta (2 patients), intrapericardial invasion of the great vessels (2 patients), intrafissural infiltration of the artery (2 patients unfit for pneumonectomy), and firm peritumoral reaction (1 patient who had undergone neoadjuvant chemotherapy). In another 21 (1.35%) patients, videoexploration could not be accomplished for technical reasons (diffuse adhesions or incomplete lung collapse). Morbidity and mortality due to preliminary thoracoscopy were absent. Global accuracy rate of thoracoscopy compared to final pathology staging was 72.4%, with a distinctive reliability in excluding unresectability (negative predictive value = 0.95).

We performed a videopneumonectomy in 7 patients (3 left and 4 right). Indications for thoracoscopic pneumonectomy were limited to the presence of two simultaneous tumours in different lobes of the same lung, or infiltrating the fissure and removable only by pneumonectomy. In one patient submitted to a left videopneumonecomy we observed an early recurrence on the utility thoracotomy incision. We have not performed any videopneumonectomy since 1995.

Among the candidates to resection, 241 high-risk patients were submitted to VATS sublobar resection (2 segmentectomies and 239 wedge resections) because of poor general or cardiorespiratory conditions or prior pulmonary resection.

Out of the 352 patients who had met our criteria for an intended thoracoscopic lobectomy, in 49 (13.9%) patients the procedure had to be converted into thoracotomy due to technical causes: dense adhesions (16 patients), sealed fissure (12 patients), calcified hilar lymphnodes impairing safe vascular preparation (15 patients), and failure of the lung to collapse (2 patients). In 4 patients an intraoperative bleeding, although controlled thoracoscopically, prompted us to convert the procedure. Finally in another 17 (4.8%) patients, the intraoperative finding of malignant adenopathy, according to our criteria, led us to convert the procedure, despite thoracoscopic feasibility.

In 286 patients (203 -70.9% males and 83 - 29.1% females) a videolobectomy was carried out for a clinical Stage I lung cancer. Mean age was 64.8 years (SD  $\pm$  9,4) and median age was 66 years (range 30-86). Mean size of the lesion was 2,97 cm (SD  $\pm$ 1.29, range 0.8 cm-10 cm). All types of lobectomy were performed.

Intraoperative mortality was absent. However, 2 (0.7%) patients died within 60 postoperative days due to contralateral pneumonia in one patient and myocardial infarction followed 15 days later by rupture of the heart in the other. One or more complications have been observed in 23 patients (8%).

Six patients without preoperative histology were found to have a small cell carcinoma and were not included in the survival analysis. Postoperative histology confirmed a Stage I tumour in 216 (75.5%) patients, but revealed a Stage II tumour in 50 (17.5%), a Stage III cancer in 14 (4.9%) and a Stage IV in 6 (2.1%). Pathologic lymph nodes were discovered in 60 (20.3%) patients (N1 in 50 -17.5% cases and N2 in 10 - 3.5%).

No local recurrences were observed. At follow-up 41 (14.3%) patients died of disease progression, 6 (2%) patients developed a metachronous lung cancer, 25 (8.7%) died of non-tumour-related causes, 7 (2.4%) died of other cancers, and 28 (9.8%) died of unknown causes.

The global survival of NSCLC patients was 76.7% at 3 years and 59.1% at five years. (Fig. 1) Stage I lung cancer patients showed an 83.8% 3-year-survival and a 64.3% 5-year-survival, significantly (p=0.003) better than Stage II patients (67.4% at 3 years and 41.3% at 5 years) (Fig. 2). T1N0 patients (42% of the patients studied) had an 85 % survival rate at 3 years and a 70%



Fig. 1: Cumulative survival after VATS Lobectomy for NSCLC.



Fig. 2: Cumulative survival after VATS lobectomy for Stage 1 and Stage 2 NSCLC.



Fig. 3: Cumulative survival after VATS Lobectomy for T1N0 and T2N0 NSCLC.

rate at 5 years, significantly (p=0.004) better than T2N0 (34.7% of the patients studied) patients (77.6% at 3 years and 55% at 5 years) (Fig. 3). Patients with negative lymph nodes and with tumour 2 cm or less had a five-year-survival rate of 80.8%, significantly better (p=0.03) than patients with lesions more than 2 but no larger than 3 cm (64% at five years); both had better survival than patients with tumours more than 3 cm but



Fig. 4: Cumulative survival after VATS lobectomy for different size of N0 NSCLC.



Fig. 5: Survival after VATS lobectomy for different age at operation.

no larger than 5 cm (51.6%) (Fig. 4). Concerning the survival analysis stratified by age categories, patients younger than 55 had survival rates of 93.3% at three years and 86.4% at five years, significantly better (p=0.001) than those of patients aged between 55 and 74 (80.5% at 3 years, 61.3% at 5 years) both better than those of patients older than 75 (74.8% a 3 years and 36.7% at 5 years) (Fig. 5). No significant differences were observed among different histotypes, with the exception of carcinoid tumours, which only represent 5.2% of the population studied.

#### Discussion and Comments

Twenty years after videotechniques were extended to chest surgery, VATS lobectomies are not yet extensively performed, However, at present, with mounting evidence of results, the approach is gaining popularity.

#### Routine preliminary videothoracoscopy

After the initial experiences of thoracoscopic major lung resections at our institution in 1991<sup>-1</sup>, considering that preoperative staging is sometimes not confirmed by intraoperative findings, we decided to submit every lung cancer patient deemed eligible for resection by conventional staging, to thoracoscopy as the first step of the intervention. Surgical thoracoscopy ensures thorough exploration of the pleural cavity, permits adequate evaluation of hilar and mediastinal structures and provides optimal access to ipsilateral lymph node stations 5 through 9 and to pretracheal and paratracheal nodes 3-6. After having ruled out undetected causes of inoperability and assessed the resectability of the lesion, thoracoscopy allows the surgeon to proceed to a thoracoscopic resection or to convert into thoracotomy. In our experience, preliminary thoracoscopy proved highly reliable in excluding inoperability, and revealed unanticipated causes of inoperability in 62 (4%) patients who would otherwise have undergone an exploratory thoracotomy. In addition, it verified the feasibility of a VATS resection in 534 (34.5%) patients, and therefore spared an unnecessary thoracotomy in 596 (38.5%) patients. After the introduction of preliminary thoracoscopy as the sole relevant variation in patient staging, we observed a 2.2% rate of exploratory thoracotomies, well below the 11.6% rate recorded in our previous series between 1980 to 1991<sup>1,3</sup>. However, other factors could have contributed to this reduction, such as the evolution of imaging and bio-imaging techniques, and the progressive shift of tumour histology from a prevalence of central squamous tumours to adenocarcinomas. On the other hand, the 34 exploratory thoracotomies performed despite preliminary thoracoscopy, suggest that videoexploration is not always feasible or adequate. Despite these limitations, sparing 40% of unnecessary thoracotomies is worthwhile and could be even more relevant in frail patients who benefit most from a minimally invasive approach. Furthermore, the impact magnitude of routine thoracoscopy depends on the number of procedures carried out thoracoscopically and may significantly increase if indications are extended. On these bases we strongly recommend routine use of VATS exploration as the first step of the intervention in all cases of lung cancer.

#### VATS Resections

The acceptance of videolobectomy has been limited by concerns regarding potential intraoperative accidents, oncologic validity, and doubts on real advantages. The variety of techniques proposed to overcome the undeniable technical difficulties contributed to fuel perplexities and to hinder the comparison between dishomogeneous experiences. Since our first cases, we developed a technique using two ports, a 5 cm anterior utility thoracotomy, videoendoscopic separate ligation of hilar elements, meticulous avoidance of rib spreading and use of a bag to avoid tumour seeding during specimen retrieval. Lymphadenectomy and surgical steps followed the same criteria of open resections.

In our series we observed no intraoperative death and only 4 (1.1%) intraoperative bleedings that were controlled thoracoscopically. Perioperative mortality was 0.7%. Many other thoracoscopic experiences worldwide have reported a low rate of conversion for intraoperative complications and a nearly absent intraoperative mortality (Table I) <sup>4,6-17</sup>. The CALGB 39802 prospective trial confirmed feasibility and safety of videoendoscopic lobectomy.[13] Published thoracoscopic lobectomy series report complication rates ranging between 5.0% and 30.6% (Table I) 4,6-17. In a large systematic review of the literature, overall complication rate after VATS lobectomy was 16.4%, significantly (p=0.018) lower than the 31.2% rate after open lobectomy 14. Two analysis based on a propensity score stratification of data from the ACOSOG Z0030 trial and from STS database found fewer respiratory complications after VATS than after open lobectomy <sup>15,16</sup>. However, one recent meta-analysis was unable to demonstrate statistical differences in perioperative morbidity between VATS and open lobectomy <sup>17</sup>. As a whole, evidence suggests that videothoracoscopic lobectomy is a safe procedure with a lower rate of complications than open lobectomy.

Benefits of thoracoscopic approach include reduced blood loss <sup>18</sup>, better preservation of pulmonary function <sup>7,19</sup>, decreased post-operative pain <sup>6,9</sup>, improved shoulder motility. More favourable immunologic response (reduced release of inflammatory and anti-inflammatory citokynes, lower levels of tumour necrosis factor, less impairment of cellular cytotoxicity) have been demonstrated, but real impact on clinical outcome is still to be defined <sup>9,20,21</sup>. Superiority of VATS lobectomy in terms of reduced chest tube persistence, hospital stay and early resumption of normal activity are commonly observed, even if not definitely proved also because these variables are influenced by non-clinical factors.

Dealing with tumour resection, recurrence rate and longterm survival are the most relevant outcomes. Twenty years from the first thoracoscopic lobectomy for cancer, a number of series report data on survival mainly limited to early stage lung cancer (Table I) <sup>14,17</sup>.

In our experience local recurrence after videolobectomy was never observed, although we recorded an early recurrence on the minithoracotomy site after one thoracoscopic left pneumonectomy. The low rate of recurrences on port sites in recent literature seems to suggest that an adequate technique can virtually eliminate the risk of tumour seeding.

Among our VATS lobectomy patients, 41 (14.3%) died of progression of the disease, comparable to other series <sup>22</sup>. A large study found a nearly equivalent rate of local recurrences and a significantly higher number of distant recurrences in the thoracotomy group compared to the VATS group, suggesting that videolobectomy is at least equivalent to open lobectomy <sup>23</sup>. However, the already cited meta-analysis showed no significant statistical difference in loco-regional recurrence, but found a significant difference in systemic recurrence favouring VATS versus open lobectomy <sup>17</sup>.

In the present study we recorded a Stage I global survival of 83.8% at 3 years and of 64.3% at 5 years, as expected significantly better than in stage II patients (67.4% at 3 years and 41.3% at 5 years). Among stage I patients, we observed a significant (p=0.004) difference between the 5-year-survival of T1N0 vs T2N0 patients (80.8% vs. 55%). Stratification of survival by histology showed no significant differences, with the well-known exception of carcinoid tumours, which are only marginally present in this series. On the contrary, tumour size <2cm was a significantly good prognostic factor. Patients younger than 54 years (who accounted for 15.5% of the study population) had a 5-year survival of 86.4%, significantly (p=0.001) better than patients aged between 55 and 74 (61.5%) and extremely better than patients older than 75 (36.7%) who make up respectively 72.1%

TABLE	I
I ADLE	1

Author	Year	Pts. (%)	Morbidity (%)	Conversions (%)	Mortality (%)	Follow-up (Months)	5-y Surv Stage I (%)
Kaseda <sup>7</sup>	1998	187	n.a.	1.5	0.8	48	97
Thomas <sup>8</sup>	2002	110	n.a.	25.0	2.7	60	64.9 (IA); 61.2 (IB)
Walker <sup>9</sup>	2003	159	n.a.	11.2	1.8	60	78
Onaitis <sup>10</sup>	2006	416	n.a.	1.6	1	24	85
McKenna <sup>11</sup>	2006	1100	15.3	2.5	0.8	60	84.5 (IA); 70.5 (IB)
Congregado <sup>4</sup>	2008	204	15.8	14.0	1.7	60	77.7
Sawada <sup>12</sup>	2008	198	10.1	2.5	0	60	93.5 (IA); 81.6 (IB)
Roviaro	This study	286	8.0	18.7	0	60	70 (IA); 55 (IB)

and 12.4% of the patients studied. These data confirm our previous observations, and are comparable to those of other large series (Table I)  $^{2,4,6-17}$ .

According to the systematic review by Whitson and collaborators <sup>14</sup> at 4 years after the resection, VATS approach demonstrated a 17% higher survival than thoracotomy approach, while the meta-analysis by Yan e collaborators <sup>17</sup> found a significant 5-year survival benefit with VATS, even though the Authors underline that current evidence is insufficient to conclude whether the survival advantage is entirely due to VATS or is associated with other favourable factors <sup>14,17</sup>.

Randomized studies comparing thoracoscopy versus thoracotomy lobectomy outcomes are in progress, such as the ACOSOG Z0030 trial, but the results are not yet available. However most of the studies, even if not unequivocally, show a common trend at least on par with open resection.

#### Limitations of the study

The main limitation of the study is that this is a retrospective review of an experience accumulated over a long period in a single institution. Despite having strictly followed the same initial indications and criteria, this implies a potential bias in patient selection due to progressive modifications of imaging techniques and evolving experiences. Data retrieval and analysis could also be influenced by the long follow-up.

Conversely, early standardization of the technique and the fact that the experience was accumulated in a single institution add homogeneity to the procedures and outcomes, even though they limit the general applicability of the findings.

#### Conclusions

Two decades since its introduction, the role of VATS surgery for NSCLC remains controversial in some aspects. The fear of intraoperative disasters has now faded and the capability of conducting complex dissection manoeuvres, adequate lymphadenectomy and safe major lung resection has been assessed. The ability of thoracoscopy exploration to rule out undetected causes of inoperability and to achieve adequate fissural and mediastinal dissection to assess the resectability of the tumour is now accepted. In this respect we advocate an extensive use of preliminary thoracoscopy in all patients with lung cancer eligible for resection after the conventional staging. VATS lobectomy technique has matured and the most important technical requisites have now been recognized. However, they are not yet extensively performed and the STS database indicates that between 1991-2006, only 20 % of all lobectomies for cancer were performed thoracoscopically <sup>25</sup>, while some authors estimate that thoracoscopic lobectomy would be feasible in a far high-

er proportion of cases. Concerning oncologic results, observational studies, systematic reviews and meta-analysis, though not conclusive, all show the same trend in favour of VATS versus open lobectomy in terms of reduced complications and long-term survival rate. VATS lobectomy is now accepted as a safe, orthodox and oncologically sound alternative for treating early stage lung cancer. However, the results of large randomized trials and further analysis of long term follow-ups are necessary to make VATS the gold standard for lobectomy. Further extension of VATS lobectomy to more advanced disease is the emerging issue.

# Riassunto

SCOPO: A oltre vent'anni dalla loro introduzione, le lobectomie videotoracoscopiche non sono ancora estensivamente eseguire. Scopo del presente studio è valutare la validità dello staging e del trattamento videotoracoscopico analizzando un'esperienza ventennale di 286 lobectomie videotoracoscopiche per cancro polmonare non a piccole cellule al primo stadio clinico TNM.

MATERIALI METODI: Dall'Ottobre 1991 al dicembre 2013, 1549 pazienti con tumore polmonare non a piccole cellule, candidati alla resezione chirurgica sulla base dello staging convenzionale sono stati sottoposti a videotoracoscopia come primo tempo dell'intervento pianificato per escludere cause occulte d' inoperabilità e verificare la resccabilità e la sua fattibilità in tecnica videoendoscopica. La lobectomia videotoracoscopica è stata volutamente limitata a pazienti in stadio clinico I. Pazienti con tumori più avanzati sono stati sottoposti a resezione toracotomica anche qualora tecnicamente resecabili toracoscopicamente. I dati di sopravvivenza, inseriti in un data base dedicato, sono stati analizzati col metodo di Kaplan-Meier e log-rank test.

RISULTATI: Nei 1549 pazienti la videotoracoscopia rivelò cause occulte d' inoperabilità in 62 (4%), per la maggior parte dovute a carcinosi (33 pz. 2,1%) infiltrazione mediastinica (22 pz. 1,4%),o infiltrazione dell'arteria in scissura in pazienti non tolleranti una pneumonectomia (7pz. 0,4%). 534 (34,5%) pazienti furono sottoposti a resezione videotoracoscopica (286 lobectomie, 7 pneumonectomie, 241 wedge resections), 919 (59,3%) ebbero una resezione toracotomica (649 lobectomie, 158 pneumonectomie, 35 trachealsleeve pneumonectomies, 77 wedge resections), 34 (2,2%) ebbero una toracotomia esplorativa (TE) nonostante la videotoracoscopia preliminare. Tra le 286 videolobectomie la mortalità operatoria è stata nulla, ma 2 pazienti decedettero entro i 60 giorni postoperatori per una polmonite controlaterale in un caso e per rottura del cuore dopo IMA in un altro. Non sono state osservate recidive locali. Nel follow-up prolungato al 2013, 41 (14,3%) pazienti morirono di progressione di malattia neoplastica, 6 (2%) ebbero un cancro polmonare metacrono, 25 (8.7%) morirono per cause non correlate al tumore, 7 (2,4) morirono per altri tumori e 28 (9.8%) per cause non conosciute.

Il tasso di sopravvivenza globale a lungo termine dopo lobectomia videotoracoscopica per i pazienti allo Stadio I è stato dell'83,8% a tre anni e del 64,3% a 5 anni. La sopravvivenza a 5 anni è stata significativamente migliore (p=0.004) per i pazienti T1N0 (70%) che T2N0 (55%) e per i pazienti di età inferiore ai 55 anni (86,4% p=0.0001) o con lesioni < di 2cm (80,8% p=0.03).

COMMENTI E CONCLUSIONI: La toracoscopia preliminare di routine ebbe un tasso di accuratezza del 72.4%, si dimostrò estremamente affidabile nell'escludere cause di non resecabilità (NPV 0.95) e consentì di diminuire il tasso di TE al 2,1%. Considerando le toracotomie esplorative evitate e le resezioni videoendoscopiche effettuate, la videotoracoscopia consentì globalmente di evitare 596 (38,5%) toracotomie non necessarie.

Nella nostra esperienza, la lobectomia videotoracoscopica si è dimostrata una tecnica sicura con un basso tasso di complicanze intraoperatorie. Lo studio retrospettivo della nostra esperienza, esteso su un lungo lasso di tempo e condotto su una casistica monocentrica e standardizzata ha dimostrato tassi di sopravvivenza a lungo termine comparabili a quelli delle convenzionali lobectomie toracotomiche. Sulla base dei nostri dati e di quelli dell' esperienza internazionale la lobectomia videotoracoscopica rappresenta oggi una valida opzione per il trattamento del cancro polmonare al primo stadio.

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