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11<sup>th</sup> International Meeting on General Thoracic Surgery



Hospital  
Universitari  
Sagrat Cor

10<sup>th</sup> International Workshop on Surgical Exploration of the  
Mediastinum and Systematic Nodal Dissection



5<sup>th</sup> Meeting of the Thoracic Oncology, Thoracic  
Surgery, Techniques & Transplant, Respiratory Nursing  
and Respiratory Physiotherapy Areas of the Spanish  
Society of Pneumology and Thoracic Surgery (SEPAR)



3<sup>rd</sup> Joint Meeting of the Spanish Society of  
Thoracic Surgery (SECT)



30<sup>th</sup> Congress of the "Asociación Iberoamericana  
de Cirugía Torácica" AIACT



10<sup>th</sup> International Workshop on Surgical Exploration of the  
Mediastinum and Systematic Nodal Dissection



## SUCTION OR NO SUCTION IN SUBLOBAR RESECTIONS

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Optimal chest tube management and timely removal are crucial to promoting early recovery after videothoracoscopic lung resections. Delayed or premature chest tube removal can lead to increased hospital length of stay and unnecessary health care expense. A digital pleural drainage device connected to a chest tube provides continuous monitoring of any pulmonary parenchymal air leak. The technology is very sensitive and can detect small, clinically insignificant air leaks. The duration of chest tube drainage can have a significant influence on length of stay following pulmonary surgery.

The optimal level of suction on digital chest drainage devices after video-assisted thoracoscopic surgery (VATS) lung resections is unknown and varies widely between thoracic centers. The majority of trials rely on data from either traditional drainage devices or after open surgery. Due to the potential siphon effect, the suction level of traditional drainage devices may vary considerably with height difference from patient to drainage device when no external suction is applied. Digital drainage devices have the benefit of keeping suction levels constant to avoid a potential siphon from fluid accumulation. A few trials exploring different suction levels have been conducted using digital devices in VATS lobectomy patients. A best evidence topic concluded that a low suction reduces total fluid drainage and perhaps air leak duration compared to higher suction levels in both VATS and open pulmonary lobectomies using digital drainage devices, although the evidence is not overwhelming.

We are conducting an ongoing randomized controlled trial involving patients programmed for a sublobar lung resection. We are trying to assess the potential benefits of low suction of  $-1$  cmH<sub>2</sub>O compared to  $-15$  cmH<sub>2</sub>O, using a digital drainage device. Our preliminary results show that a low suction level shortens drainage duration, time to air leak cessation and total fluid production, without increasing morbidity. To our knowledge, this is the first study to examine the effects of different suction levels on a cohort of patients undergoing sublobar resections by VATS using digital drainage devices.

## BIBLIOGRAPHY

Brunelli A, Salati M, Pompili C, Refai M, Sabbatini A. Regulated tailored suction vs regulated seal: a prospective randomized trial on air leak duration. *Eur J Cardiothorac Surg* 2013;43:899–904.

Novoa NM, Jiménez MF, Varela G. When to Remove a Chest Tube. *Thorac Surg Clin*. 2017;27(1):41-6.

Lijkendijk M, Neckelmann K, Licht PB. External suction and fluid output in chest drains after lobectomy: a randomized clinical trial. *Ann Thorac Surg* 2018;105:393–8.

Lijkendijk M, Licht PB, Neckelmann K. The influence of suction on chest drain duration after lobectomy using electronic chest drainage. *Ann Thorac Surg* 2019;107:1621–5.

Holbek BL, Christensen M, Hansen HJ, Kehlet H, Petersen RH. The effects of low suction on digital drainage devices after lobectomy using video-assisted thoracoscopic surgery: a randomized controlled trial. *Eur J Cardiothorac Surg* 2019;55:673–81.

Sørensen MF, Holbek BL, Petersen RH, Christensen TD. What is the optimal level of suction on digital chest drainage devices following pulmonary lobectomy?. *Interact Cardiovasc Thorac Surg*. 2021;32(6):938-41.