

# Uniportal video-assisted thoracoscopic surgery (VATS)

## Background

Video-assisted thoracoscopic surgery (VATS) is minimally invasive chest surgery which uses a thin video camera and surgical instruments inserted through small incisions in the chest. Compared to open surgery, it may result in less pain after surgery, a shorter stay in hospital, less obvious scarring as well as a faster time for recovery and return to daily activities. Over the past few years, the number of incisions required to successfully perform the VATS technique has been reduced from three or four down to one. This 'uniportal' approach via a single incision is an even less invasive alternative for many different chest operations. The indications, benefits and risks of this surgical technique will be discussed below.

## Indications and procedures

Uniportal VATS is performed in procedures aiming to diagnose or treat a variety of different conditions of the lung and chest. It may be used to carry out a lobectomy, where a large section of the lung is removed, usually in the treatment of lung cancer. In this procedure, the video camera and surgical instruments are inserted through the same small incision and the lungs can be visualized and operated upon without spreading of the ribs. In addition to lung tumors, the uniportal VATS technique may be employed in the surgical removal of other tumors in the chest region, such as those of the thymus gland and the area surrounding the heart. Other therapeutic indications include pneumothorax, where air is trapped around the lung in an air pocket which can be surgically removed, and hyperhidrosis, or excessive sweating, whereby certain nerves in the chest can be severed providing symptomatic relief. In addition, uniportal VATS may be necessary to drain a collection of fluid around the lungs. This minimally invasive technique may also be used diagnostically in the context of a lung biopsy, where a small sample of lung tissue is taken for microscopic examination, as well as a wedge resection, where a wedge-shaped piece of lung tissue is removed to diagnose and treat small lung nodules.

## Benefits

Uniportal VATS confers a number of advantages over more invasive surgical techniques. Compared to open surgery and possibly VATS with multiple incisions, the uniportal approach may cause less pain and discomfort following the procedure. It may also lead to a reduced risk of surgical

complications, such as infection, bleeding or death. In addition, it may result in a shorter length of stay in hospital, quicker recovery time and faster return to normal daily activities. Due to the requirement for only a single, small surgical scar, uniportal VATS has the additional cosmetic benefit of less obvious scarring compared to the more invasive techniques.

## Risks

As with all surgical procedures, there are a number of risks that need to be considered prior to undergoing an operation by the uniportal VATS technique. Despite the reduced severity compared to other approaches, patients still experience pain after the operation, though medication is given to help provide relief. Other risks include bleeding and chest infection, though the risk of infection can be reduced by adequate chest physiotherapy and early mobilization. Occasionally, the procedure may need to be converted to open surgery due to technical difficulties or uncontrolled bleeding. General surgical risks also apply, including a risk of wound infection as well as small risks of heart attack, stroke or death. As always, the risks should be weighed against the benefits and discussed with your surgeon.

For more information, please visit the following websites:

<http://my.clevelandclinic.org/services/heart/services/hic>

[Video-Assisted\\_Thoracic\\_Surgery/video\\_assisted](http://emedicine.medscape.com/article/1970013-overview)

<http://emedicine.medscape.com/article/1970013-overview>

<http://www.uhs.nhs.uk/Media/Controlleddocuments/>

[Patientinformation/Heartandlungs/](http://www.uhs.nhs.uk/Media/Controlleddocuments/Patientinformation/Heartandlungs/)

[VATSlobectomypatientinformation.pdf](http://www.uhs.nhs.uk/Media/Controlleddocuments/Patientinformation/Heartandlungs/VATSlobectomypatientinformation.pdf)

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