



Thoracic Surgery

Dr. Ichiro Yoshino

Professor, Department of Thoracic Surgery, Graduate School of Medicine, Chiba University

In the field of thoracic surgery, video-assisted thoracic surgery (VATS) has markedly increased, but open thoracotomy remains the standard practice depending on the stage of the disease, and many surgeons prefer hybrid VATS with minor thoracotomy and thoracoscopy combined. Headlights are used very frequently in such open surgery which requires examining inside the thoracic cavity directly with one's eyes.

This time, Dr. Ichiro Yoshino of Chiba University shared with us about the beneficial features of OPELA^{III} as compared with conventional light sources in lung cancer surgery through hybrid VATS (minor thoracotomy) and mediastinal tumor surgery (median sternotomy).



Regardless of area, it is effective in both minor thoracotomy and extended surgery

I used OPELA^{III} during a hybrid VATS lobectomy of left lung and mediastinal malignant tumorectomy through median sternotomy. Initially, I was using a thoracoscope in conjunction with OPELA^{III} to provide ample light in the surgical field. However, during operation it became apparent that the light from OPELA^{III} alone was more than enough therefore I chose to turn off the light of the thoracoscope, and had no problem completing the surgery.

To remove the anterior mediastinal malignant tumor, a median sternotomy approach was taken. While OR lights usually provide sufficient brightness in the shallow region, using OPELA^{III} together proved to enhance visibility vividly (Fig. 1). I was most impressed with OPELA^{III} when it came to illuminating deep cavities. Normally, when looking down into deep areas, we need the help of another light source because the OR light on the ceiling cannot reach the depths or the surgeon's head and instruments cast shadows over the surgical field. Until now we were using headlights or the camera on thorascopes to light up certain spots, but with OPELA^{III}, we performed the surgery with hardly any stress because it allowed us to easily recognize visually the hilar area as well as the pericardial space (Fig. 2).



Fig. 1 | The view with/without OPELA^{III} during small thoracotomy
*ON means when OPELA^{III} is lit.

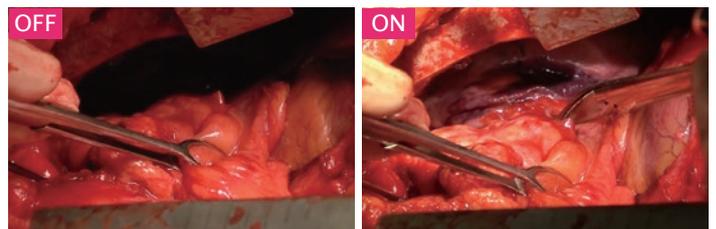
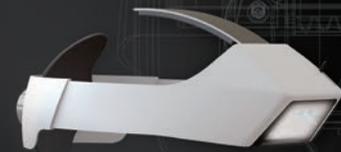


Fig. 2 | The view near the hilar area. It is visible into the depths with OPELA^{III}.
*ON means when OPELA^{III} is lit.

OPELA^{III} becomes even more beneficial when the procedure demands greater precision

I was initially thinking of performing lateral thoracotomy in addition to median sternotomy because a diaphragm plication and nerve grafting were necessary as the lesion was extended to the left hilar area (phrenic nerve invasion). However, OPELA^{III} provided exceptional visibility beyond expectation therefore eventually only

median sternotomy was sufficient. This was achieved because OPELA^{III} can point the light in the direction of my head's movement, illuminating where I want to see even into the depths (Fig. 3), and improving visibility of the surgical field as I moved effortlessly in my usual manner.



Thoracic Surgery

Everything I wanted to see this time looked bright. I think the more precision the procedure requires, the more benefit you can get out of it. OPELA III is certainly an item I would continue to use for additional value on safety.

Fig. 3 | Scene from the surgery using OPELA III. By illuminating from various angles, light can be directed deep into surgical fields where OR light cannot reach.



My hands and instruments cast less shadows, so the field of view remains brightly illuminated

I have always used headlights during thoracotomy procedures to illuminate my line of sight, but I was not completely satisfied. The problem lies in that my own hands and instruments cast shadows over the field of view which made it dark. But this has improved significantly with OPELA III. It noticeably makes less shadows compared to the conventional headlights. Furthermore, due to having three LEDs the

light intensity is high. It may be relatively larger compared to other small headlights, but I hardly felt any burden while it was on my head. You might need some getting used to its unique adjustment methods at first, but once you decide the brightness intensity level and set the position of light angle, you are basically ready to go. I can summarize my impression of this medical luminary device as simply "very useful".

OPELA III helps surgeons perform procedures faster, leading to shorter overall surgery time

With the combination of OR light and OPELA III, the surgical field was brightly illuminated. Because of this, I felt that the surgery went smoother than usual and it was actually completed faster. This was a case of mediastinal malignant tumorectomy, together with extended thymectomy, combined resection of pericardium and left brachiocephalic vein, nerve grafting, and diaphragm plication, but it took only about 4 hours despite the complexity. Looking back, it can be attributed to every move being faster. In thoracic surgery, we use long instruments because it involves working in deep regions. OPELA III enables me to see all the way to the tip of the instruments (Fig. 4). Whether or not you have a clear view makes all the difference. I did not have to take extra steps for precaution to see if the sharp tip might damage tissues or if it is touching blood vessels and nerves, because I could already visually confirm it. The speed of thought process remained the same, while the time required for every movement became markedly less, resulting in seamless completion of surgery with minimal stress. Brightness is the greatest

benefit of OPELA III, no doubt, but it seems to have various other intangible positive effects.

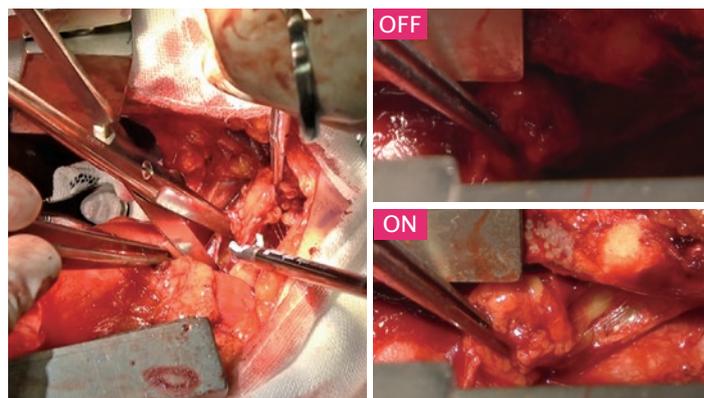


Fig. 4 | Treatment of the lower pole of the thymus. Being able to see the tip of the instrument makes the procedure go smoothly. *ON means when OPELA III is lit.

OPELA III® is registered in U.S. Patent and Trademark Office.
OPELA III™ is trademark of Taiyo corporation.

[Manufactured and distributed by]

TAIYO CORPORATION

30-9, SHIBA 5 CHOME, MINATO-KU, TOKYO
108-0014 JAPAN
TEL +81-3-5440-6273 FAX +81-3-5440-2080

Wearable surgical lighting system

OPELA III™

Clear visibility + Easy movement
and Comfort

[OPELA III website]

<http://www.opela3.com>



Made in Japan
Patents and designs
registered

Check the interview video!