

## Performing laryngoscopy during cardiopulmonary exercise for respiratory diagnostics using the single-use Ambu® aScope™ 4 RhinoLaryngo

### About Liverpool Heart and Chest Hospital (LHCH)

As the largest single-site specialist heart and chest hospital in the UK, Liverpool Heart and Chest Hospital provides world-class specialist services in cardiothoracic surgery, cardiology and respiratory medicine.

### Respiratory Diagnostic Department at LHCH: Setting up a new service line

At LHCH, the Respiratory Diagnostics Department works closely with other disciplines to provide a wide variety of diagnostic investigations, including the Cardiopulmonary Exercise Test. The department developed a new service line for performing laryngoscopy during exercise to evaluate Exercise Induced Laryngeal Obstruction (EILO). EILO is characterised by prolonged and/or noisy inspiration and shortness of breath, which is often related to the obstruction of the larynx, involving either supraglottic laryngeal structures and/or the vocal folds. Visualisation of the larynx during symptomatic periods remains the gold standard to diagnose EILO. More recently, continuous laryngoscopy during exercise has been adopted as the test of choice for EILO diagnosis by the European Respiratory Society and European Laryngological Society<sup>1</sup>.

Mr Scott Hawkes, the Senior Chief Respiratory Physiologist, said: **“We were looking for a lightweight, single patient use, disposable scope to set up a new service line”**, as this test requires a set-up that is not always widely available to specialists.



### The ideal solution: Ambu aScope 4 RhinoLaryngo

Mr Hawkes said: **“We needed a single-use scope, and this fitted perfectly with service line”**. aScope 4 RhinoLaryngo includes a portfolio of two single-use flexible video rhinolaryngoscopes, and the high-quality, full-HD portable monitor, aView™ 2 Advance. The aView 2 Advance monitor is portable and records images and videos of the procedure, which is perfect for real-time visualisation of the larynx during the Cardiopulmonary Exercise Test. The images and videos help the clinicians to engage patients or peers by sharing the screen during the procedure or recorded images and videos retrospectively. Mr Hawkes revealed that the key drivers in his decision to adopt aScope 4 RhinoLaryngo are that it is **“single-use, lightweight, flexible and provides good image quality.”**

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Single-use, lightweight, flexible,  
and good image quality

## Benefits of aScope 4 RhinoLaryngo: Liverpool Heart and Chest Hospital's perspective

Although the Respiratory Diagnostics Department at LHCH has been using aScope 4 RhinoLaryngo for just under a year, the benefit of having it was clear. Mr Hawkes said: **“it 100% allowed us to set up a new service line to evaluate laryngeal obstruction during cardiopulmonary exercise testing”**. During the test, a flexible laryngoscope is attached to the head via a band or helmet, and the tip of the scope is introduced through the nose into the larynx, allowing the visualisation of the supraglottic and glottic structures in real-time throughout the exercise. Mr Hawkes added: **“The lightweight nature of the product has allowed us to attach to headgear which can be held in place during exercise.”**

**At Ambu, our mission is to provide our customers with innovative solutions that optimise workflow and improve patient care.**



### The outcome: supporting clinicians in providing patient care

The diagnosis of EILO can be missed or delayed, mainly due to receiving an alternative diagnosis like asthma, which is more common than EILO. Physical examination is rarely helpful in diagnosing EILO as, by definition, symptoms occur during exercise and are not present at rest<sup>1</sup>. As such, the real-time visualisation of the symptomatic period is crucial for its diagnosis. By providing a single-use, lightweight and portable solution that is always ready, aScope 4 RhinoLaryngo enables the respiratory physicians to provide patient care with the aim of avoiding inappropriate diagnosis.

## aView 2 Advance

### Portable full-HD monitor to help you focus on your patients

- Portable touchscreen displaying unit with full-HD resolution offering excellent imaging
- Adaptive image processing and user adjustments provide image quality optimisation for various clinical situations
- Connectivity with PACS via DICOM over Wi-Fi/LAN
- Digital video-out to display live image in high quality on external screen or connectivity to content management systems
- Flexible design and intuitive user interface with 180-degree rotation options
- Live image within seconds and over 3 hours battery time
- Upgradeable and repairable



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Mobile visualisation of  
the airway during exercise

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#### References:

<sup>1</sup>Sayad E, Das S. Exercise Induced Laryngeal Obstruction (Vocal Cord Dysfunction) [Updated 2020 Mar 24]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2020 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK556148/>

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