

How I Do It

SECTION EDITOR



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Chester-gel technique

BY UMESH NAGALOTIMATH AND ROBERT TEMPLE

Umesh Nagalotimath and **Robert Temple** describe a simple and effective technique for enhancing vision during endosheath use for flexible nasendoscopy.

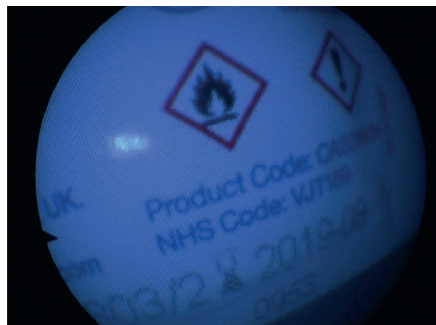


Figure 1. Image with gel technique – here, the sheath is held firmly against lens of scope by the gel.

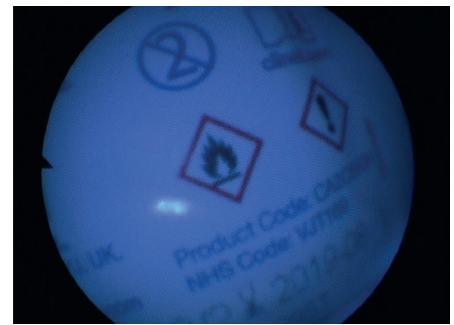


Figure 2. This is the best possible image - (only with sheath and no gel). When you compare with gel technique, you can see the difference.

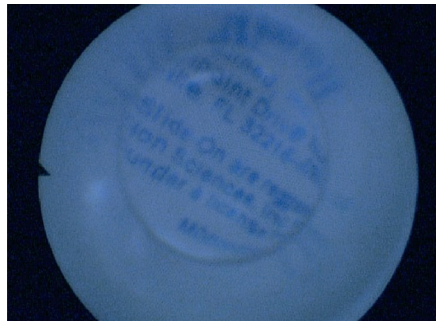


Figure 3. Distorted image when sheath becomes loose and space between lens and sheath increases.

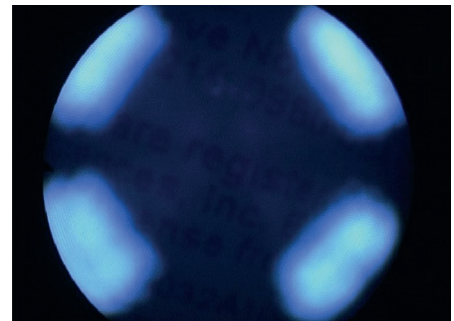


Figure 4. Distorted image - sometimes seen with endosheath.

“When you apply the gel between the lens and sheath, the optilube gel, which is denser than air, reduces the optical distortion to a minimum, giving much clear vision”

Endosheaths are used to complement the cleaning of flexible scopes. The advantages are time saving for clinicians as this reduces turnaround when they clean the scopes during clinics. The disadvantages are decreased clarity of vision and damage to the endoscope tip or outer casing during sheath removal.

In recent months COVID-19 has given us more challenging times for flexible nasendoscopy and some trusts are insisting on using endosheaths to reduce the transmission of infection. Here we are describing a simple technique for a clearer view during sheath usage.

Technique

We clean the tip of the nasendoscope with alcohol wipes and apply a tiny amount of

optilube gel to the lens. This is the same gel used to lubricate the outside of scope which is water soluble and sterile. Then insert the scope into the endosheath as usual, making sure that the sheath adheres firmly to the lens. Check the vision by focusing on the letters of any print. You will notice a clearer view through the scope and sheath combined. A word of caution is not to apply too much gel as this can distort the view.

After completing the endoscopy procedure, gently pull the sheath from the tip (distal end of the scope) and remove it. Pulling the sheath near the eyepiece (proximal end of scope) is not recommended as the sheath can become stuck and this might damage the scope. Finally clean the lens again with alcohol wipes to get rid of remaining gel on it.

Results

We have been using this technique over a year. The feedback is good, with clinicians reporting that they get a very clear view while using the sheath with the gel technique. This has been documented photographically in Figures 1-4.

Discussion

Many clinicians don't like using sheaths due to poor quality of vision. In a busy clinic with a shortage of nursing staff to clean the scope, one might be pressurised to use the sheath for endoscopy. The examination details are hard to visualise with sheath usage and the picture/video quality with camera can be poor.

The principle reason for poor quality of vision is the thin layer of air between the lens of the scope and the endosheath, which distorts the clear vision. Loosening of sheath, which increases the gap between lens and the sheath, is another reason.

As we know, the light travels at different velocities in different media. So, when light travels from endosheath to lens, this thin layer of air in between might be responsible for decreasing the quality of vision. Sometimes the vision might be good before starting the endoscopy when the sheath is tightly adherent. When the scope is bent or

manoeuvred, the sheath is likely to become loose and air might get in between lens and sheath, decreasing the clarity of vision.

When you apply the gel between the lens and sheath, the optilube gel, which is denser than air, reduces the optical distortion to a minimum, giving much clear vision. The gel also holds the sheath against the lens firmly due to its adhesive qualities, eliminating the chances of sheath sliding down or falling during the procedure.

Conclusion

This method is very helpful for clinicians working in busy units as it allows sheath usage without any loss of the image quality. With new challenges of infection control of nasendoscopy during COVID-19, we recommend this technique.

References

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