

Full Screen Digital Image CCD Transnasal Esophagoscopy with Disposable Endosheath® Technology (TNE/DE) is Equal to Standard Video Endoscopy (VE) as Initial Screening Tool in Chronic GERD Patients

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INTRODUCTION

Screening patients with chronic GERD in order to evaluate for Barrett's esophagus and other pathology is routine in GI practice today. Standard video endoscopy has been the gold standard, with optimization of video image quality, but at a higher cost due to sedation, disinfection, equipment cost, and logistical issues.

Transnasal Esophagoscopy was introduced several years ago, which helped to limit the cost associated with sedation, but the conventional TNE scopes still required high-level disinfection and high front end equipment expense.

A newly introduced technology, full screen digital image CCD based Transnasal Esophagoscopy with a disposable Endosheath® component, offers similar video image quality, but with the advantages of a significantly lower total system cost and by eliminating the need for sedation, high level disinfection and other logistical costs.

AIM

To evaluate, as part of a screening program, the differences between TNE/DE and standard videoendoscopy (VE), with regard to image quality, diagnostic yield, costs and patient acceptability.

METHODS

Study Design

Out of 50 patients with chronic GERD who were scheduled for screening VE, 24 were randomly selected to undergo same-day TNE/DE immediately prior to sedated VE.

All procedures were performed by a single endoscopist, (MN), using the Pentax videoendoscopic system and the Vision Sciences TNE/DE system. TNE/DE was performed without sedation and VE with Propofol conscious sedation.



From the nose to the stomach in less than 5 minutes with Unsedated EndoSheath® Esophagoscopy.

EndoSheath® Endoscope turn around time between patients is less than 5 minutes.

Inclusion Criteria:

- Symptoms of chronic GERD.
- Signed informed consent.

Exclusion Criteria:

- ASA >III.
- Inability to pass >3 mm instrument transnasally.

Outcomes Assessment:

- 10-point visual quality scale.
- Accuracy of documented findings and ability to view all anatomic structures.
- Cost comparison of cleaning, reimbursement.
- Total procedural time comparison.
- Patient satisfaction comparison on 5-point scale.

RESULTS

- All 24 patients successfully completed both procedures.
- There were no complications observed.
- 5/24 patients had erosive esophagitis, 19/24 had non-erosive esophagitis, 11/24 had Barrett's esophagus, and 3/24 were noted to have inlet patches.
- There was no difference in the detection of pathology between TNE/DE and VE.

- Image quality was rated 9/10 for both systems.
- Procedure-only times were similar and averaged 10 minutes.
- The ability to fully image all laryngeal, esophageal and proximal gastric anatomy was the same.
- Calculated reprocessing costs were similar:
 - \$40 for the Disposable Endosheath® Unit.
 - \$40 for cleaning, disinfection, equipment and personnel costs for VE.
- There was a time saving of a minimum of 35 minutes with TNE compared to VE.
- Patient satisfaction averaged 4/5 for TNE/DE and 4/5 for VE.
- TNE/DE had no sedation or recovery time vs. VE.
- TNE/DE had no endoscope turnaround delay vs. VE.
- Sedation associated nursing time eliminated with TNE/DE vs.VE.
- Professional reimbursement differed substantially:
 - Average \$345 for TNE/DE vs. Average \$200 for VE.

Figure 1.
ESOPHAGUS: (VE)
Conventional
Video Endoscopy

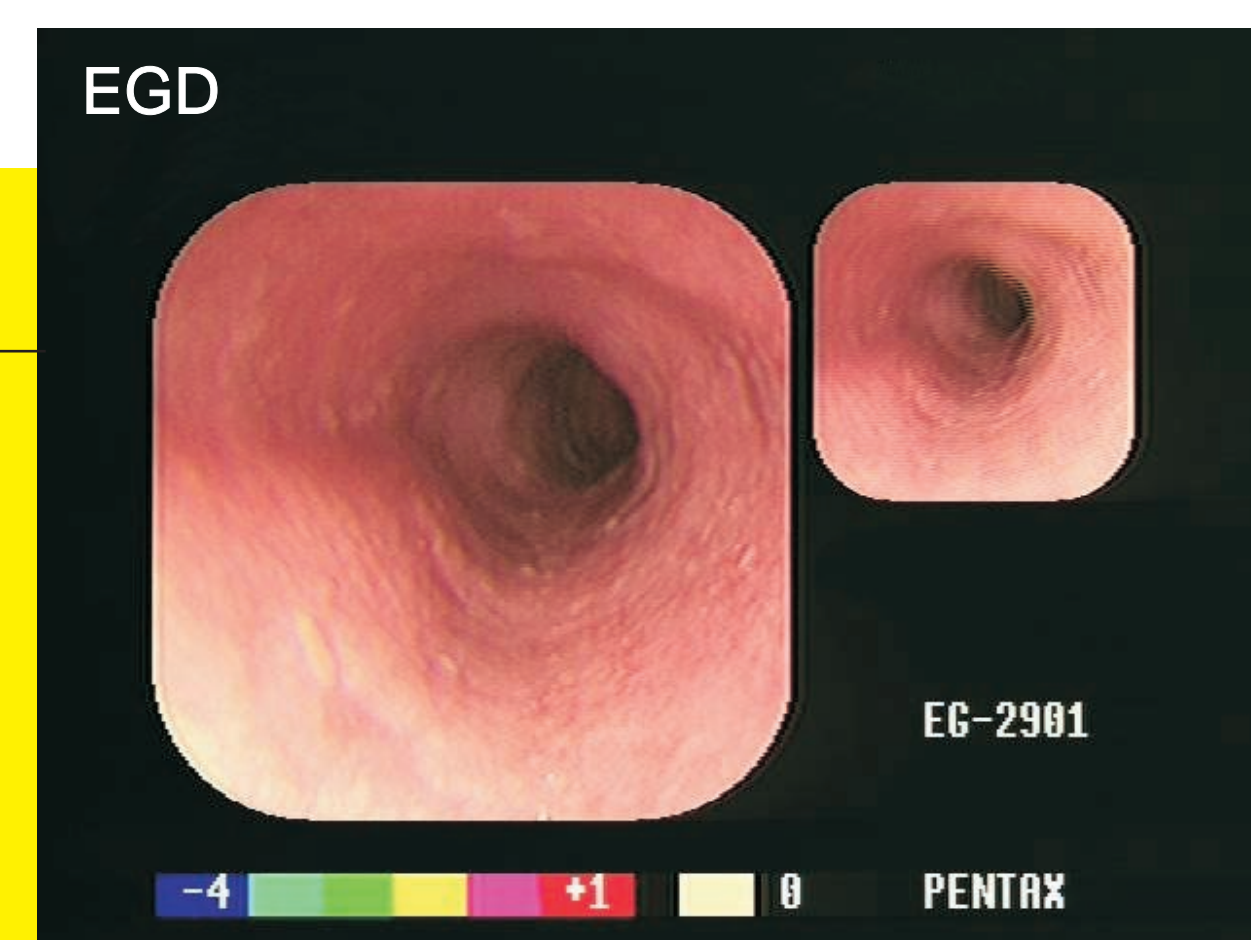


Figure 2.
LES: (VE)
Conventional
Video Endoscopy

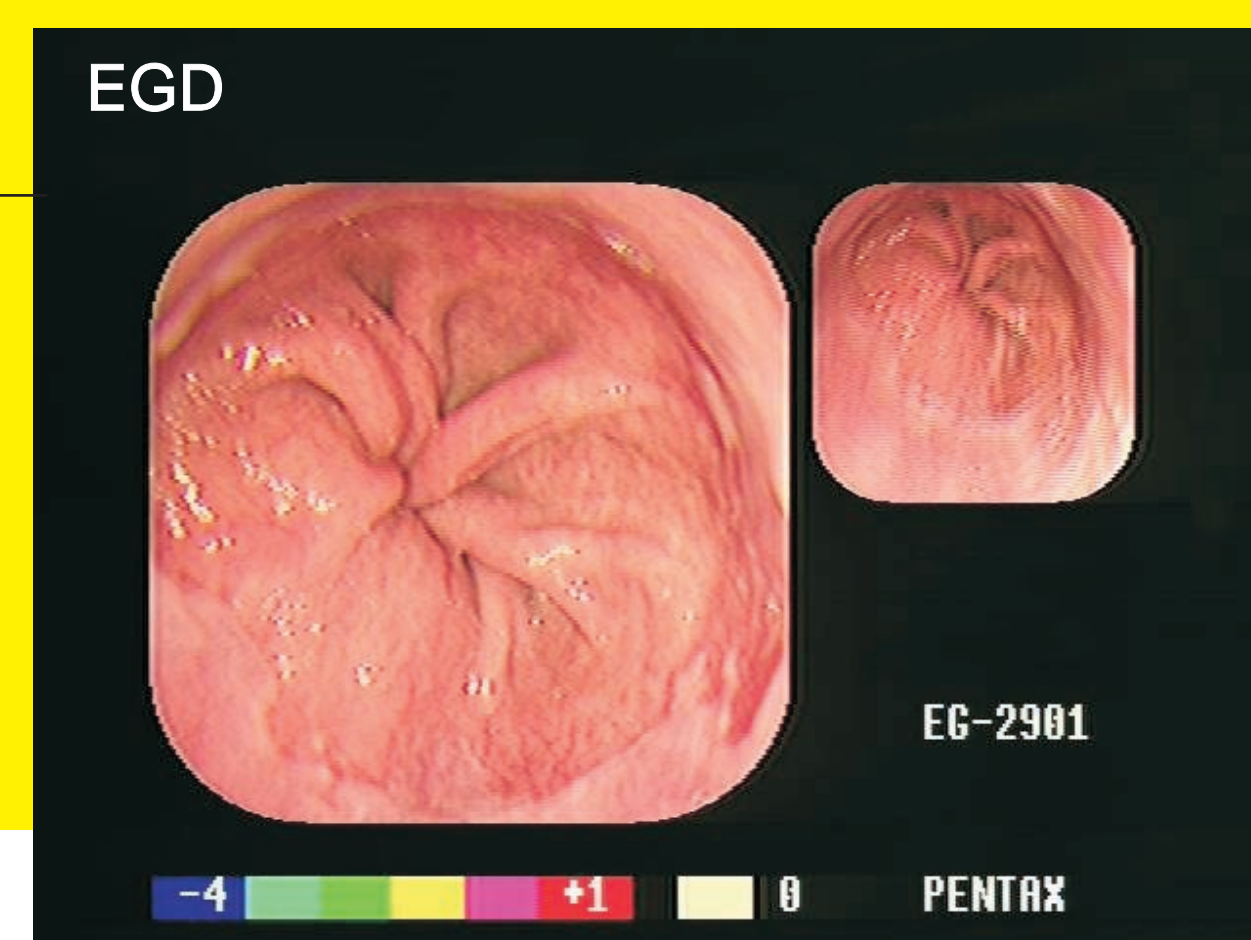


Figure 1.
ESOPHAGUS: (TNE/DE)
Unsedated
Transnasal
Endoscopy

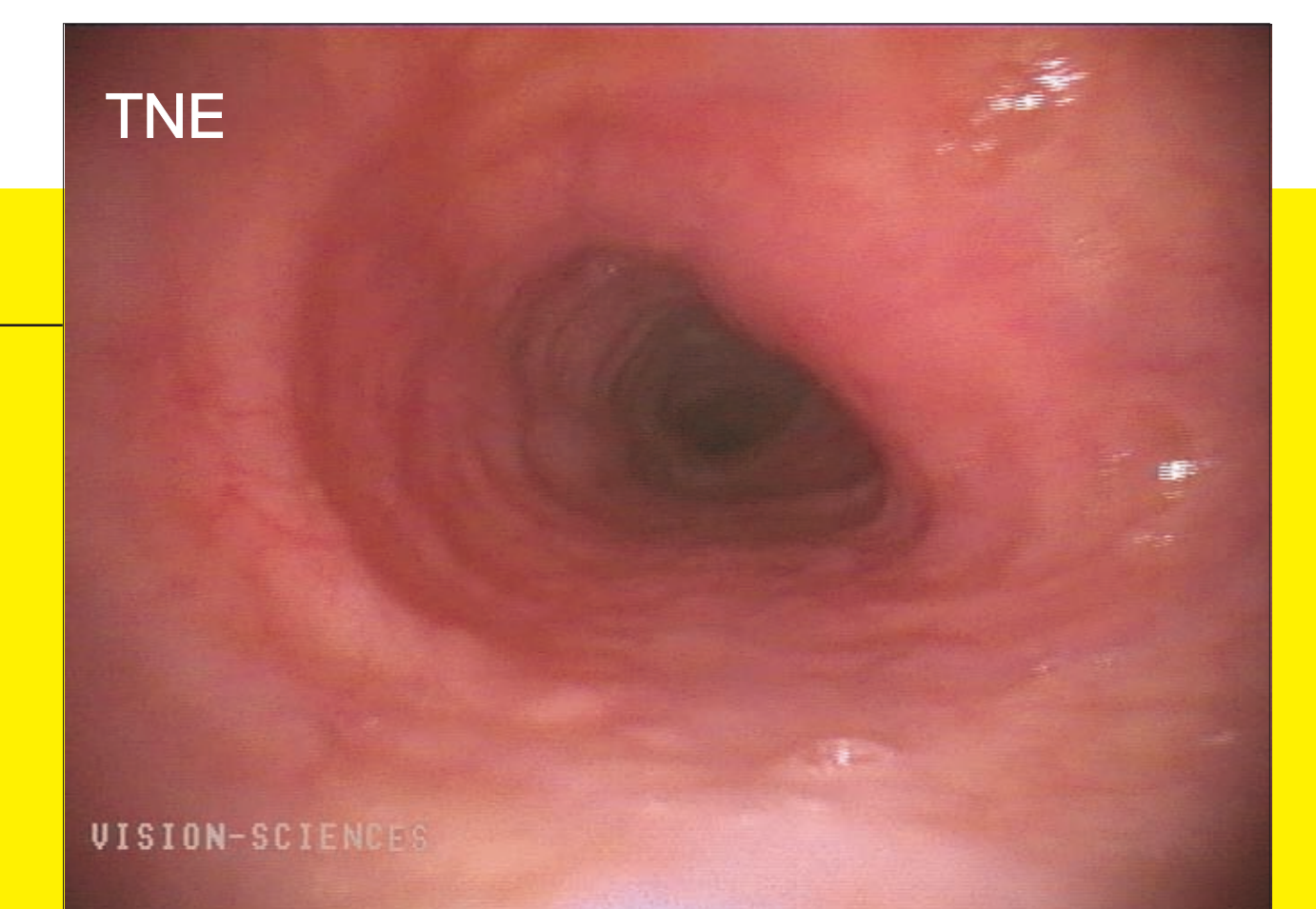
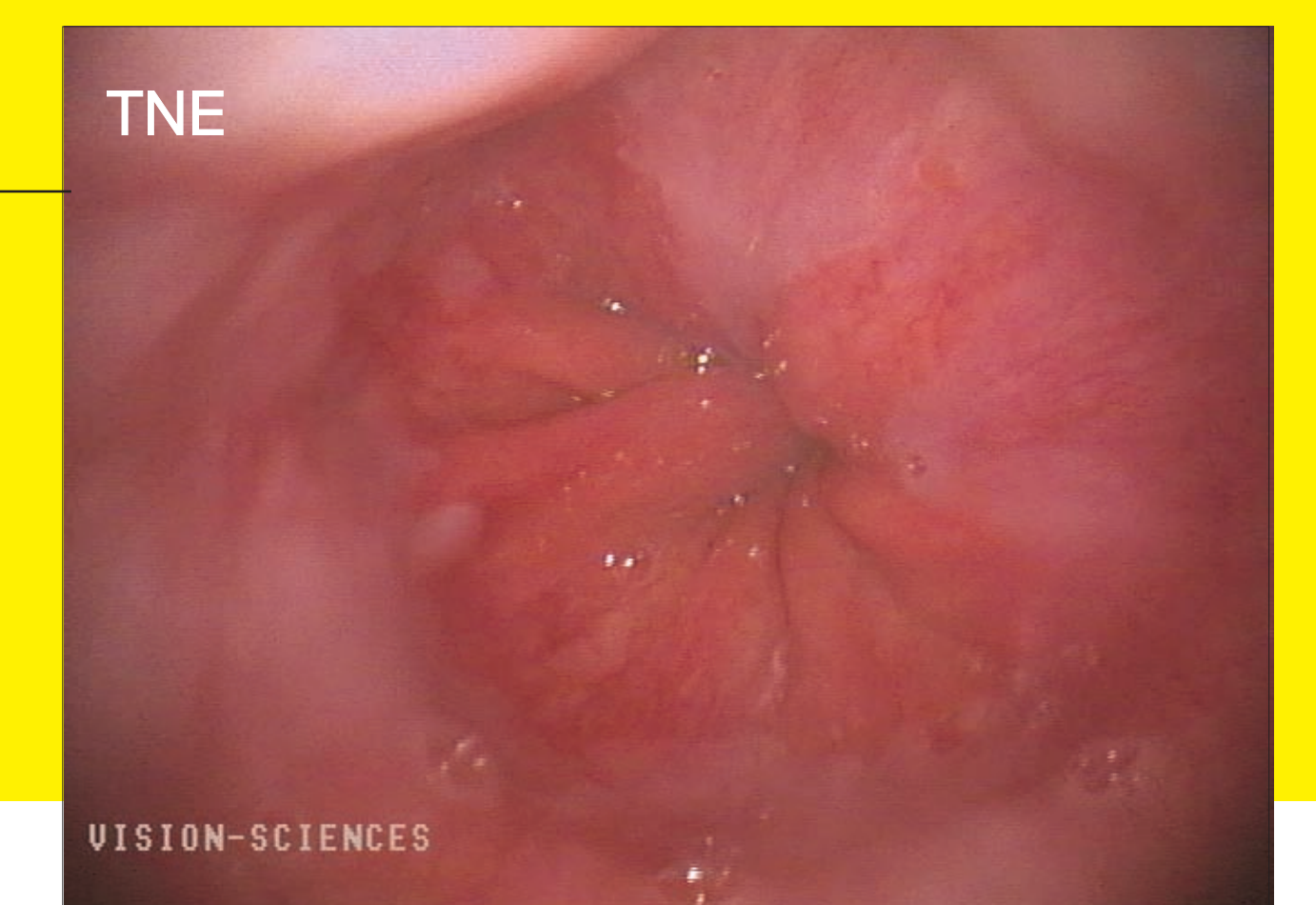


Figure 1.
LES: (TNE/DE)
Unsedated
Transnasal
Endoscopy



CONCLUSIONS

- 1) TNE/DE was equal to VE with respect to image quality, imaging capabilities, and diagnostic yield.
- 2) TNE/DE was less costly compared to VE due to elimination of required sedation associated costs and procedures.
- 3) TNE/DE and VE were equally well tolerated by patients.
- 4) TNE/DE was reimbursed significantly higher than VE.