

Transnasal Endoscopy (TNE)

Barnsley Primary Care BEST Event
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Learning Outcomes

- Understand what TNE is
- Identify when it is appropriate to refer for TNE
- Evaluate the current evidence base for TNE
- Understands the advantages and disadvantages of TNE vs traditional OGD



What is TNE?

- Upper GI endoscopy is one of the most commonly performed procedures in gastroenterology
- Range of indications – similar to traditional OGD (few exceptions)
- TNE is performed using an ultrathin endoscope (≤ 6 mm diameter) via the nasal route
- Typically performed in the left lateral position or sat semi-reclined
- The TNE is passed via the nostril through the nasal cavity below or above the inferior turbinate
- Upon passing the upper oesophageal sphincter, the procedure continues as a traditional OGD





Current Practice

- Western countries, such as the UK have been slower to adopt TNE than other countries, such as Japan (widespread use since 1990s, early 2000s)
- COVID-19 pandemic provided the impetus for mass expansion of TNE (less aerosolization)
- Currently lack of formal training in the UK, but shallow learning curve for those experienced in traditional OGDs
- JAG recommends attendance to a training workshop
- Formal training would provide the platform for further uptake





Why should I have a TNE?

- Unsedated TNE means I don't need to miss a day of work
- Unsedated TNE means I can drive myself to and from the hospital
- When I had my OGD before, I had sedation but could still feel it and I don't want to have a GA



Why shouldn't I have a TNE

- I don't want to be able to watch it on-screen
- I don't like the idea of something going up my nose
- I want the tried and tested camera test, not something new
- If I can't tolerate the TNE, I don't want multiple attempts over and over again



Preparation

- Adequate pre-treatment is essential; approach currently not standardised and varies between centres
- Topical lidocaine gel to the nostrils
- Lidocaine spray to the oropharynx
- Decongestant use e.g. xylometazoline or phenylephrine to aid nasal insertion (turbinate shrinkage)

BHNFT - Combination of lidocaine 5% / phenylephrine 0.5% nasal spray





Referral for TNE

- Select cases for patients intolerable of traditional OGD, previously documented bad experience, avoidance of GA procedures
- Current service due to capacity limitations cannot accommodate ALL referrals for OGD to be performed via TNE
- Not suitable for patients with previous nasal injury, nasal trauma, nasopharyngeal surgery, nasal polyps, complex ENT pathology precluding scope passage, severe coagulopathy, or HHT
- Vast majority of referral indications for TNE are identical to those for traditional OGD (few caveats*)



Complications

- As per traditional OGD (bleeding, perforation, localised trauma, missed pathology, pain, sore throat etc...)
- Epistaxis in 1-5% procedure (usually mild and self-limiting)
- Others include: mucus discharge, headache, ear pain, dizziness, sinusitis, dacrocystitis, failure due to narrow nares patency



Advantages

- Well-tolerated
- Less gagging
- High patient satisfaction
- Reduced cardiovascular stress

Kataoka H; Dig Endosc. 2011 Jan;23(1):78-85.

- No* sedation (reduced recovery time, no requirement for oxygen administration and reduction in free radical related side effects)
- Diagnostics not inferior to traditional OGD
- Useful tool for insertion of nasoenteric tubes
- Cost-effective
- Can be used in non–acute settings



Disadvantages

- Some studies indicate more prolonged procedure times
- Small accessory channel, reducing forceps size, smaller histological sample obtained
- Despite traversing upper aerodigestive tract, not intended for detection of ENT pathology (if suspicious, refer to ENT)
- Epistaxis: most studies indicate occurrence rate 1-5%, usually self-limiting, rarely requires tampon or balloon-type pack insertion (if minor bleeding, supply 2/52 Naseptin*)
- Fewer therapeutic interventions



Diagnostics

- Nakata et al. World J Gastrointest Endosc. 2011 Aug 16;3(8):162-70. **Transnasal and standard transoral endoscopies in the screening of gastric mucosal neoplasias.**

Retrospective study in 3324 patients (41% TNE 59% SE)

Similar detection rates of neoplasia overall, but SE group detected more ca in patients who were HP+ve without atrophic gastritis

- Choe et al. **Comparison of transnasal small-caliber vs. peroral conventional esophagogastroduodenoscopy for evaluating varices** in unsedated cirrhotic patients. Endoscopy. 2011 Aug;43(8):649-56. Epub 2011 Jun 9. De Faria et al. Endoscopy Intern Open 2017 Feasibility of TNE in screening of varices

Feasible safe and **accurate in detection of varices** with excellent concordance with standard OGD



Diagnostics (2)

- Mori A, **Unsedated transnasal** ultrathin esophagogastroduodenoscopy may provide better diagnostic performance in **gastroesophageal reflux disease**. Dis Esophagus. 2011 Feb;24(2):92-8.
- Sami SS Recent advances in screening of Barrett's Current Treat options Gastroenterol 2018

The size of hiatus hernia correlated significantly with severity of gagging reflexes that was also lowest when diagnosed with TNE.

TNE had an equivalent performance in the diagnosis of reflux oesophagitis and Barrett's epithelium compared with traditional OGD.

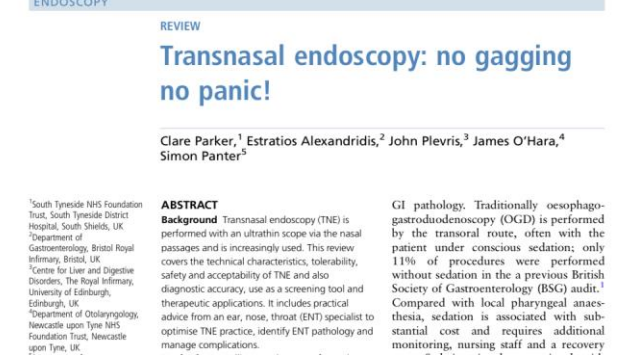
Enlargement of hiatus hernia induced by gagging reflexes was minimal in TNE, resulting in its **better performance in the diagnosis of Barrett's epithelium.**



Accuracy

- TNE as good (?better) at diagnosing GORD related diseases
- Recent data suggesting equivalent in diagnosing BO
- Equivalent in diagnosing and grading varices
- Possibly lower pick up small superficial gastric cancers in proximal stomach
- Pick up may be improved with chromoendoscopy

Parker C, et al. *Frontline Gastroenterology* 2016;7:246–256. doi:10.1136/flgastro-2015-100589





Is TNE better than traditional OGD?

ENDOSCOPY

Table 1 Tolerability of TNE versus conventional OGD

Study	Outcome measure used	Reported outcome
Dean <i>et al</i> ⁸	VAS—choking, discomfort, acceptability	TNE more acceptable (p<0.05)
Campo <i>et al</i> ¹⁸	VAS—discomfort, retching, pain, tolerance	TNE better tolerated (p<0.05)
Dumortier <i>et al</i> ²¹	VAS—pain, nausea, choking	TNE less choking (p<0.05)
Garcia <i>et al</i> ⁴	VAS—satisfaction	No significant difference
Preiss <i>et al</i> ²⁰	VAS—gagging, pain, tolerance	TNE less gagging (p<0.05)
Thota <i>et al</i> ³³	Tolerance score	No significant difference
Murata <i>et al</i> ²²	Pain score—tolerance, discomfort	TNE less discomfort (p=0.001) TNE better tolerated (p=0.002)
Trevisani <i>et al</i> ³⁴	VAS—pain, discomfort Tolerance score	TNE better tolerated
Zhang <i>et al</i> ³⁷	VAS—pain, discomfort, choking	No significant difference
Choe <i>et al</i> ⁶⁷	VAS—satisfaction and tolerance	TNE better tolerated (p=0.001)

OGD, oesophagogastroduodenoscopy; TNE, transnasal endoscopy; VAS, visual analogue scale.



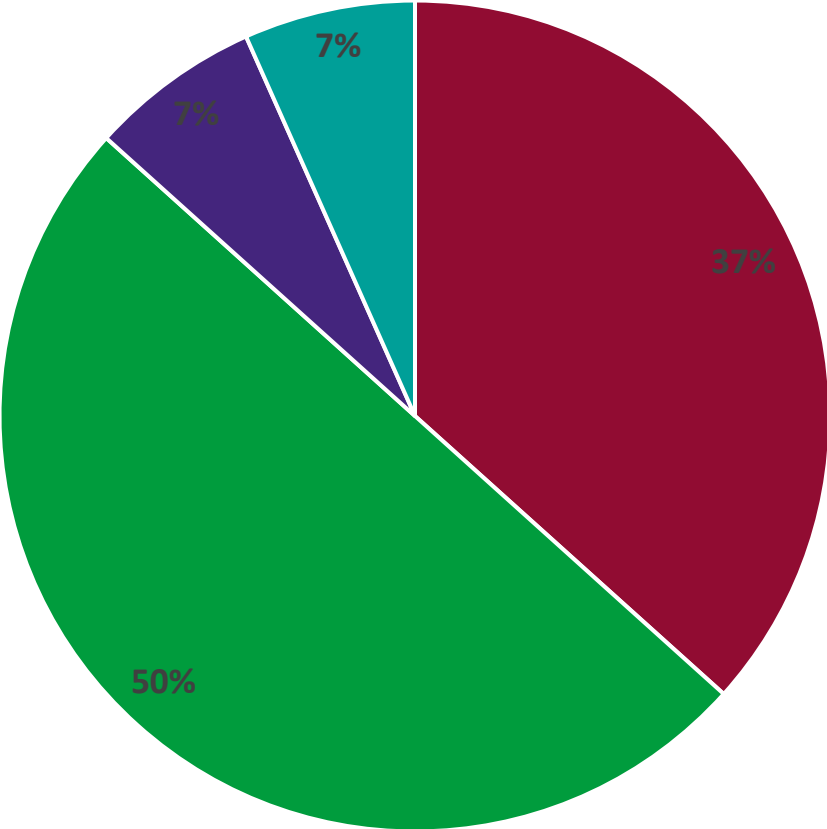
Local service evaluation

Kindly supported by clinical audit department

Methodology

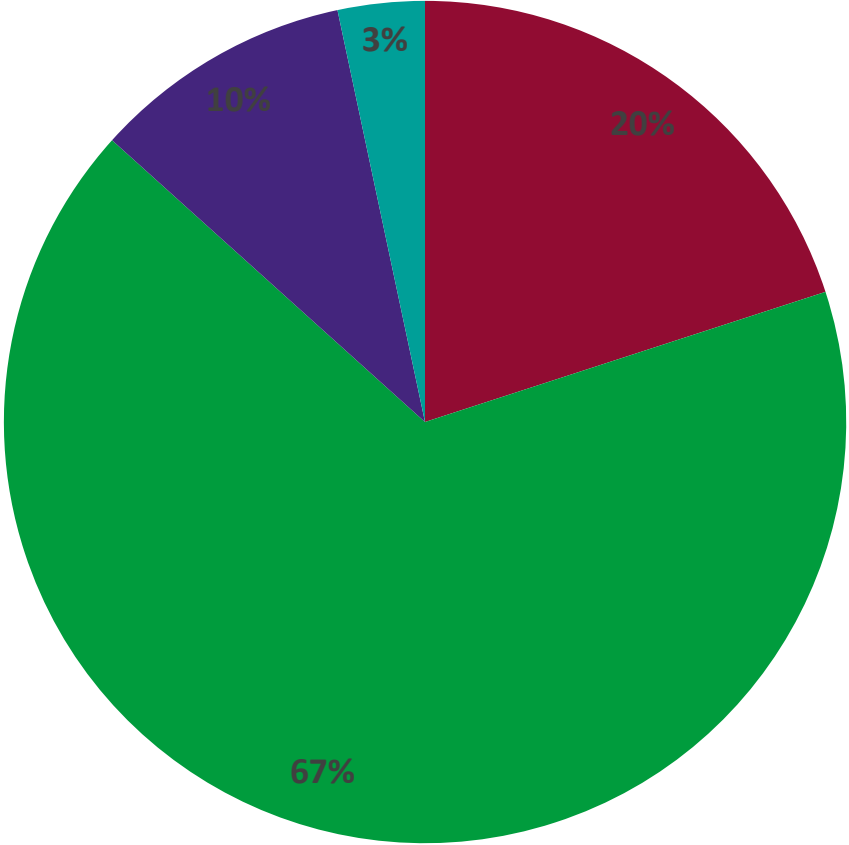
- Time period reviewed: January – September 2023
- Source of data: Endoscopy Database InfoFlex
- Type of audit: Retrospective
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- Sample size: 30 OGD patients + 30 TNE patients

OGD Comfort Score



■ Minimal ■ Comfortable ■ Mild ■ Moderate

TNE Comfort Score



■ Minimal ■ Comfortable ■ Mild ■ Moderate



Relevance to Primary Care

- Safe, quick, useful diagnostic test for low-risk patients
- Suitable for those with previously failed traditional OGD or those who you suspect may only tolerate OGD under GA
- Sedation not offered (not usually required) so quicker discharge for patients
- Diagnostic performance similar to traditional OGD
- Lower risk of cardiovascular adverse events so may be better suited to certain patient populations
- Biopsies possible, but no therapeutics
- Small biopsy forceps, single biopsy per pass, not suitable for long segment BO



How to request?

- Letter
- RAS
- A&G
- GP OpenAccess UGI pathway (please specify in free text if TNE required AND the reason traditional OGD cannot be tolerated)
- If you decide TNE is appropriate, please discuss this with the patient so they know what to expect





Small service...

Hopeful of uptake by fellow endoscopists and service expansion





References / Acknowledgements

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Sami SS Recent advances in screening of Barrett's Current Treat options Gastroenterol 2018

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Thanks to Fujifilm Aquilant, helathcare21 for provision of images / slide details used with consent, including:

- TNE presentation – detailing scope and technology info
- Example of procedural info (pdf)
- TNE research paper – ‘No gagging, No panic’
- TNE presentation by Prof John Plevris (NHS Lothian) – TNE advantages including cardiovascular/efficacy.
- TNE presentation by Simon Panter – Includes some anatomy details



Questions?

Thank you



Our Mission
To provide the best possible care for the people of Barnsley and beyond at all stages of their life



Our Values

Respect We treat people how we would like to be treated ourselves	Teamwork We work together to provide the best quality care	Diversity We focus on your individual and diverse needs
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