

Original Research Article

Prospective comparison of conscious nasal versus oral video upper GI endoscopy in adults

G. S. Prabudoss¹, Neha Prashant Shah^{2*}

¹Director, ²Senior Consultant, Chennai Obesity And Gastro Surgeons Centre, Chennai, Tamil Nadu, India

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*Correspondence:

Dr. Neha Prashant Shah,

E-mail: neha_shah@gmail.com

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ABSTRACT

Background: Endoscopy procedures are now becoming a mandate for any upper or lower abdominal conditions in addition to any radiological investigations. Patients have reluctance. It's mainly because of the painful experience they come across during upper GI endoscopy. If pain can be addressed during endoscopy then all patients would smile after this procedure. The main objective of the study is to compare nasal endoscopy vs conventional endoscopy in gastrointestinal disorders.

Methods: This prospective study was conducted in the department in the department of bariatric and metabolic surgery, Apollo Spectra Hospitals, Chennai. Totally 200 cases were included in the study for the study. Nasal packing was done with xylocaine and oxymetazoline without oral spraying of 10% xylocaine. Oral mouth gag was not inserted in nasal cases. Pain score was primarily used as a scoring method.

Results: Comparative study was done for both groups for pain score, gag reflux, nausea, comfort level, voice change, image clarity, intervention procedures, and overall scoring was done. There was a significant advantage in the nasal endoscopy group.

Conclusions: More screening endoscopies can be done for a large patient population to diagnose Gastro diseases at an early stage if a painless endoscopy can be offered instead of regular endoscopy hereafter. But however, the endoscopy suite should have regular scope for therapeutic procedures.

Keywords: Nasal video endoscopy, Oral video endoscopy, Pain score, Postoperative complication

INTRODUCTION

Esophago-gastro-duodenoscopy (OGD) is the gold standard test for the investigation of upper gastrointestinal (UGI) symptoms, allowing direct mucosal visualization, the tissue acquisition and when required, therapeutic intervention.¹ Demand has been consistently increasing, with an estimated 3000 OGDs performed per 250 000 population annually.² Endoscopy may be used to investigate symptoms in the digestive system including nausea, vomiting, abdominal pain, difficulty swallowing, and gastrointestinal bleeding. It is also used in diagnosis, most commonly by performing a biopsy to check for conditions such as anemia, bleeding,

inflammation, and cancers of the digestive system.³ The procedure may also be used for treatment such as cauterization of a bleeding vessel, widening a narrow esophagus, clipping off a polyp or removing a foreign object. Specialty professional organizations which specialize in digestive problems advise that many patients with Barrett's esophagus are too frequently receiving endoscopies.⁴ Such societies recommend that patients with Barrett's esophagus and no cancer symptoms after two biopsies receive biopsies as indicated and no more often than the recommended rate. The main risks are infection, over-sedation, perforation, or a tear of the stomach or esophagus lining and bleeding. Although perforation generally requires surgery, certain cases may

be treated with antibiotics and intravenous fluids. Bleeding may occur at the site of a biopsy or polyp removal. Such typically minor bleeding may simply stop on its own or be controlled by cauterization. Perforation and bleeding are rare during gastroscopy. Other minor risks include drug reactions and complications related to other diseases the patient may have. Consequently, patients should inform their doctor of all allergic tendencies and medical problems. Occasionally, the site of the sedative injection may become inflamed and tender for a short time.⁵ This is usually not serious and warm compresses for a few days are usually helpful. While any of these complications may possibly occur, it is good to remember that each of them occurs quite infrequently. A doctor can further discuss risks with the patient with regard to the particular need for gastroscopy.⁶

METHODS

This prospective study was conducted in the Department of Bariatric and Metabolic Surgery, Apollo Spectra Hospitals, Chennai from 2013-2019. Totally 200 cases were included in the study. Nasal packing was done with xylocaine and oxymetazoline without oral spraying of 10% xylocaine. Oral mouth gag was not inserted in nasal cases. Pain score was primarily used as a scoring method. Inclusion criteria: Stable Vital Signs, NPO, ASA 1 and 2. Patients were monitored from staring to end of the procedure. Vitals- PR/BP, Pulse oximetry. Emergency drugs & cart by the side namely O2/face mask/oral/nasal airway/ET tube/laryngoscope/Ambu bag/. After the procedure, the patient will be observed and monitored by a qualified individual in the endoscopy room, or a recovery area, until a significant portion of the medication has worn off.

Occasionally the patient is left with a mild sore throat, which may respond to saline gargles or chamomile tea. It may last for weeks or not happen at all. The patient may have a feeling of distention from the insufflated air that was used during the procedure. Both problems are mild and fleeting. When fully recovered, the patient will be instructed when to resume their usual diet (probably within a few hours) and will be allowed to be taken home. Patients who have had an endoscopy without sedation are able to leave unassisted.

Statistical analysis

Data were entered using Microsoft Excel and analyzed using STATA software. A continuous variable was analyzed using the student 't' test which was used to determine the significant difference

RESULTS

Table 1 shows In this study among 200 patients, 52 patients (56%) had gastric ulcer alone, 22 patients (22%) had duodenal ulcer alone and 6 patients had both gastric ulcer and duodenal ulcers (6%), collectively comprising most common cause of UGI bleed contributing 54% of the total. It was found that esophageal varices were the second most common lesion contributing 12% of UGI bleeding. 4 cases (4%) of fundal varices were noted. The other acid peptic disorder lesions observed were gastric erosion 10%, esophagitis 8%, duodenitis 4%, hemorrhagic gastritis 1%, esophageal ulcer 1%. Peptic ulcer was noted in 4 patients (4%) of varices. Multiple lesions were observed in 10% of cases. All the 12 variables has significant correlation of p value- 0.745.

Table 1: Severity of lesion in study group (n=200).

No	Nature of Lesion	Minor	Moderate	Major	Melena only
1	Gastric ulcer	30	20	10	2
2	Duodenal ulcer	28	14	10	2
3	Gastric erosion	14	6	4	2
4	Oesophageal varices	8	4	4	3
5	Oesophagitis	7	2	2	0
6	Duodenitis	4	2	2	0
7	Fundal varices	2	1	1	0
8	Hemorrhagic gastritis	4	1	0	0
9	Esophageal ulcer	4	1	0	0
10	Carcinoma stomach	2	0	0	1
11	Gastric ulcer+duodenal ulcer	15	0	4	0
12	Varices+peptic ulcer	2	2	0	0
	Total	100	53	37	10

Table 2 shows totally 200 cases were included in the study. Nasal packing was done with xylocaine and oxymetazoline without oral spraying of 10% xylocaine. Oral mouth gag was not inserted in nasal cases. The

commonest age group has seen in the group-A and group-B was 25-40 years. The failure rate was high in group-B when compared with the group-A. Among both the group's normal endoscopy procedure patients had more

pain score which was up to 2-4 when compared to the group-B. Gag reflex was frequently observed in group-A. Both the groups had no evidence of voice changes. *H. pylori* infection was common in the group-A patients.

Comparatively nasal endoscopy procedure was found to be better in all the aspects when compared to oral endoscopy methods. Both groups have less significant complication concerned with p value <0.005 .

Table 2: The comparative outcome between normal and nasal endoscopy (n=200).

Observations	Normal endoscopy (A) (n=100)	Nasal endoscopy (B) (n=100)
Age group	25-37	27-38
Number of cases	100	100
Failure rate	Nil	10
Pain score	2-4	0
Presence of gag reflex	50 cases	20 cases
Voice changes	Nil	Nil
Biopsy yield for <i>H. pylori</i>	95%	92%
Outcome	Satisfactory	Excellent

DISCUSSION

Currently, diagnostic endoscopy is one of the most important tools of gastroenterology for both adults and children. It has expanded our understanding of the pathophysiology and treatment of common gastrointestinal disorders in children.⁷ Parallel to the increasing availability of endoscopy for the pediatric population, the number of procedures performed has risen. Because the indications and performance of this procedure are still being studied, studies that support its use in this population are scarce. Among the patients in our study who underwent upper endoscopy, most were female. The male:female ratio was 1.78:1.0. The use of sedation and general anesthesia also varied from study to study. In our study, 16.8% of patients required sedation or anesthesia, but in Saudi Arabia 99% of procedures are carried out under sedation and in Brazil 80% are performed under general anesthesia.⁸ The most common indication in our study was abdominal pain (36%) which is similar to the percentage found in the US study (28.7%). In that study abdominal pain and epigastric abdominal pain were listed separately with respective frequencies of 28.7% and 8.5%.⁹ In Sudan, where schistosomiasis is endemic, the main indications were hematemesis 24% and portal hypertension 21% (13). In Brazil, suspicion of malabsorption accounted for 56% of the cases while recurrent abdominal pain accounted for 37%.¹⁰ The only significant endoscopic abnormalities found in our study were ulcers (8%) and esophageal erosions (9.7%). These percentages are smaller than those found in the U.S. where endoscopic abnormalities were found in 34.7% of patients. Nevertheless, our most frequent endoscopic diagnosis was chronic antral gastritis (70%) which is much higher than the percentages found in Brazil and the USA where the gastritis was found in 19% and 10.4% of cases respectively. This difference is probably related to the high rate of *H. pylori* infection.¹¹ In our study, histopathological examinations were performed for 66% of patients and 71% of these patients were positive for *Helicobacter pylori*. This exceeds the recently published rate found in children from Iran of 64.2% (18) and far exceeds that found in the USA of only

2.4%.¹² This information is associated with estimated rates of *H. pylori* infection in children over 10 years of more than 60% in our population and confirms that infection occurs early in childhood. In developing countries, this infection is linked to socioeconomic status (70%-78%) and to the high rate of gastric cancer. In our study 11.5% of the upper gastrointestinal endoscopies were considered to be normal from the endoscopic point of view.¹³ This is a smaller percentage than those reported in the study from Jordan (38%) (22), a US study in 2005 (44%) and another 65.3% in 2013 (12-18) and Brazil (42%) (15), the frequency of peptic ulcer was 8% (duodenal and gastric ulcer) that is twice the findings of Brazil (4%).¹⁴ These findings are consistent with a higher rate of *H. pylori* infection in our population (which can be diagnosed by non-invasive methods with similar performance). Despite the higher frequency of *H. pylori* and gastritis in these children, no histological findings related to metaplasia or atrophy were found because these lesions require an extended development period.¹⁵ The current recommendation is that pediatric patients who undergo upper endoscopy should have routine biopsies. In our study, no complications related to the endoscopic procedure or anesthesia was reported. Nevertheless, it should be remembered that this is an invasive procedure, so the procedure itself could result in an emergency. In addition, complications related to this procedure may occur more readily in pediatric patients, so this is not an innocuous procedure.¹⁶⁻¹⁸

CONCLUSION

More screening endoscopies can be done for a large patient population to diagnose gastro diseases at an early stage if a painless endoscopy can be offered instead of regular endoscopy hereafter. But however, the endoscopy suite should have regular scope for therapeutic procedures. The highest prevalence of late-onset dyspepsia in the age group of 41-50 years. Most common presenting complaint was epigastric pain and discomfort. Dyspepsia was more common in males (59%) when compared to females. The most common endoscopic

finding was gastritis followed by GERD. Malignancy was diagnosed in 6.5% of patients with dyspepsia.

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