THE IMPACT OF ACCESS TO UPPER ENDOSCOPY ON THE DIAGNOSIS AND MANAGEMENT OF ENDEMIC GASTROINTESTINAL DISEASES OF EASTERN UGANDA

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BACKGROUND:

- Access to endoscopy is limited in many rural communities in low-and middle-income countries (LMIC), such as Uganda
- Few studies have evaluated the effectiveness of using elective upper endoscopies to address both benign and malignant esophago-gastric diseases in remote Eastern Uganda





METHODS:

- Retrospective, cross-sectional, single center study
- Evaluated patients who received an elective upper endoscopy from Kyabirwa Surgical Center, an ambulatory facility, between February 2020 and June 2022
- Primary variables were presenting symptoms and endoscopic diagnosis, in addition to age, sex, and subsequent intervention

RESULTS & CONCLUSIONS:

A total of 350 endoscopies were performed for 333 patients, with a 1:1 male-to-female ratio and an average age of 48

- Abnormalities were found on endoscopy in 73% of patients, revealing diagnoses, including but not limited to:
  - esophageal cancer (16.4%, N=64)
  - gastritis (16.7%, N=65)
  - hiatal hernia (8.7%, N=34)
  - esophagitis (7.4%, N=29)
  - ulcer (6.1%, N=24)
  - candidiasis (5.1%, N=20)

			Post Procedural Treatment (not mutually exclusive)										
Diagnoses (not mutually exclusive)	N	%N	PPI/antacid	lifestyle modifcaiton	analgesic	antibiotic	antifungal	triple therapy	palliative stent	US/CT	subspecialty referral	close outpatient follow-up	other***
normal endoscopy + persistent symptoms	104	27%	34	14	8	4	0	3	0	28	7	17	0
gastritis	65	17%	52	11	1	4	4	6	0	4	0	11	0
esophageal cancer	64	16%	2	2	15	9	2	0	18	0	0	29	0
hiatal hernia	34	9%	23	14	3	0	1	0	0	1	0	5	2
esophagitis	29	7%	23	2	1	1	4	1	0	2	0	2	0
ulcer	24	6%	18	5	0	0	1	5	0	0	0	5	0
candidiasis	20	5%	1	1	1	0	18	1	0	0	0	2	0
duodenitis	9	2%	4	1	0	0	0	1	0	2	0	3	0
esophageal varices	5	1%	1	0	0	1	0	0	0	0	0	0	3
achalasia	5	1%	0	0	0	0	0	0	0	0	0	5	0
gastric cancer	5	1%	1	0	0	0	0	0	2	0	0	3	0
other**	26	7%	6	2	4	2	2	1	0	4	4	7	0
Total	390	100%											

Abbreviations: US for ultrasound. CT for computed tomography.
** other endoscopic diagnoses: organo-axial volvulus (4), foreign object (4), duodenal mass/obstruction (2), laryngeal tumor (2), enlarged adenoid (2), helminth (1), Gastric Outlet Obstruction (1), gastric varices (1), bleeding duodenal papilla (1), pancreatic mass (1), PEG placement (1), Schatzki's ring (1), Mallory Weiss tear (1), incomplete scope (1), missing repots (3)
***other treatments: additional medications: propranolol (3), fundoplication (2)

					Diagnoses (not mutually exclusive)												
Presenting Problem	N	N %	# Biopsies	Biopies %	Gastric Ca	Eso Ca	Candidiasis	Esophogitis	Gastritis	Ulcer	Duodenitis	Hiatal hernia	Eso varices	Achalasia	Normal	Other**	
epigastric pain (alone)	133	40%	28	25%	1	0	6	14	29	11	5	17	0	0	68	7	
dysphagia (alone)	58	17%	35	31%	2	30	4	2	8	2	0	5	0	2	7	2	
dysphagia + alarm symptom	27	8%	22	19%	0	22	2	2	2	0	0	2	0	1	0	1	
odynophasia w/wo epigastric pain/dysphagia	24	7%	6	5%	0	3	2	3	5	0	0	2	0	1	6	4	
epigastric pain + dyspepsia	23	7%	4	4%	0	0	4	2	9	1	1	4	0	0	7	0	
epigastric pain + dysphagia	17	5%	9	8%	0	5	0	1	3	2	2	1	0	0	6	1	
epigastric pain + alarm symptom	15	5%	1	1%	1	0	0	1	2	4	0	0	2	1	4	2	
dyspepsia (alone)	8	2%	5	4%	0	0	1	1	5	2	0	1	0	0	2	0	
alarm symptom (alone)	7	2%	0	0%	0	0	0	2	0	1	0	0	3	0	1	0	
epigastric pain + dysphagia + alarm symptom	4	1%	3	3%	1	2	0	0	0	0	0	0	0	0	0	1	
previously known cancer	2	1%	0	0%	0	2	0	0	0	0	0	1	0	0	0	0	
other*	15	5%	1	1%	0	0	1	1	2	1	1	1	0	0	3	8	
Total	333	100%	114	100%	5	64	20	29	65	24	9	34	5	5	104	26	390
Percentage					1%	16%	5%	7%	17%	6%	2%	9%	1%	1%	27%	7%	100%

The diagnoses in Table 2 were not mutually exclusive (see description in table). Some patients with epigastric pain may have had 2 concurrent diagnoses. Abbreviations: Ca for cancer. Eso for esophagus. Alarm symptoms are defined as weight loss, hematemesis, or melena.
* Other presenting problem: foreign body (6), emesis (4), hiccups (1), Gastric Outlet Obstruction (1), varices (1), nausea (1), other (1)
** Other endoscopic diagnoses: organo-axial volvulus who went onto receive a barium swallow for further characterization (4), foreign object (4), duodenal mass/obstruction (3), laryngeal tumor (2), enlarged adenoid (2), helminth (1), GOO (1), gastric varices (1), bleeding duo papilla (1), PEG placement (1), Schatzki's ring (1), Mallory Weiss tear (1), incomplete scope (1), missing repots (3)

- Most patients presented with epigastric pain alone (40%, N=133) or dysphagia (39%, N=130)
- Dysphagia was an alarming symptom, as 51% of patients had esophageal cancer on endoscopy
- Biopsies were performed in 1/3 of all endoscopies, 55% of which confirmed malignancy, 26% to test for H.pylori gastritis and 10% to further characterize an ulcer
- For patients diagnosed with esophageal cancer, 28.1% had an interval stent placed
- A normal upper endoscopy changed clinical management in 24% of patients, with 28 (27%) subsequently sent for ultrasound or CT and 7 patients (7%) referred for subspecialty services

The introduction of upper endoscopy into a rural community in LMIC can verify baseline prevalence of upper gastrointestinal diseases endemic to its population. Confirmation of diagnosis by endoscopy can subsequently direct medical management and interventional therapy.