



Pattern of Upper GI polyps among Sudanese Patients: A Single Centre Experience Study (Eyes Study)

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ABSTRACT

A gastrointestinal polyp is an abnormal protrusion from the mucosal surface of the gastrointestinal lumen and can be considered to indicate protuberant growth, which can be benign or malignant. The objectives of the present study were to evaluate the clinical features, possible risk factors, endoscopic features, and histopathological patterns of upper gastrointestinal polyps among adult Sudanese patients.

Patients and methods: This was a retrospective, descriptive, cross-sectional hospital-based study. The study was conducted at the Soba University Hospital Department of Endoscopy from March 2017 to March 2020. The present study was also conducted on patients with gastrointestinal polyps found upon OGD (esophagogastroduodenoscopy).

Results: We revised 2003 endoscopy reports, and 105 patients had upper GI polyps. The mean age was 51 years \pm 15 years (the more affected age group was 34 years-48 years, 31.4%). Male sex was the predominant sex. The main clinical presentation was epigastric pain (40%), followed by portal hypertension (21%) (22) and anaemia and dyspepsia (13.3%) (n14). The main site of polyps was the stomach (64%), while the duodenum and oesophagus were 21% (n22) and 13% (n14), respectively. Most polyps were small and sessile. The predominant histopathological type was inflammatory (33.3%), followed by adenomatous (10.5%) (n11) and hyperplastic (7.6%) (n7).

Conclusion: From this research, we found that the frequency of upper GI polyps was 5.6%, while that of gastric polyps was 3.4%. The main presentation was epigastric pain. A small size >0.5 cm and a sessile shape were the dominant endoscopic features; however, inflammatory polyps were the most common type of polyp.

Keywords: Upper GI polyps; Dyspepsia; Anaemia; OGD; Fundic gland polyps

INTRODUCTION

Polyp is a Greek word for a morbid lump that may arise from any organ, such as the gastrointestinal, respiratory, or genitourinary tract, that contains the mucosal lumen. Gastrointestinal polyps are abnormal protrusions from the mucosal surface of the gastrointestinal lumen. The upper GI tract is considered to extend to the 2nd part of the duodenum and is assessed by OGD and colorectal polyps *via* colonoscopy and/or flexible sigmoidoscopy [1].

Upper GI Polyp Classification

Gastrointestinal polyps can be classified macroscopically and/or

histologically. Polyps cannot be distinguished macroscopically by endoscopy only due to their similar appearance. The polyps were histologically classified as epithelial, hamartomata, or mesenchymal. Additionally, polyps can be classified as fundic gland polyps or hyperplastic or adenomatous polyps. Duodenal polyps are like either gastric or colon polyps according to their histopathological pattern [2,3].

Prevalence and Pattern of Upper GI Polyps

Oesophageal polyps are very rare. Many case reports have discussed giant oesophageal polyps as benign neoplasms, the prevalence of which is 0.03%. Oesophageal polyps mainly

Received:	21-March-2024	Manuscript No:	IPJCGH-24-19279
Editor assigned:	25-March-2024	PreQC No:	IPJCGH-24-19279 (PQ)
Reviewed:	08-April-2024	QC No:	IPJCGH-24-19279
Revised:	15-April-2024	Manuscript No:	IPJCGH-24-19279 (R)
Published:	22-April-2024	DOI:	10.36648/2575-7733.8.2.12

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Citation Adam YA, Attaalmanan EM, Azhary W (2024) Pattern of Upper GI polyps among Sudanese Patients: A Single Centre Experience Study (Eyes Study). J Clin Gastroenterol Hepatol. 8:12.

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contain fibrous tissues, adipose tissues, and blood vessels, and the major site of growth is the upper region [4]. In a review conducted by Dr. Islam and Dr. Patel at the Mayo Clinic, regarding gastric polyps, the authors discussed the lack of published literature to support management and decisions for endoscopists despite 90% of patients being asymptomatic. A subcategory of gastric polyps requires additional intervention, and the histological type should be considered [3]. The importance of investigating gastric polyps was potentiated in a meta-analysis conducted by Zhen-Jie Wue, et al., who found a direct relationship between gastric polyps and the presence of colorectal polyps; the incidence was greater than that in the normal population (OR=1.15, 95% CI=1.04-1.26) [5]. In a cross-sectional study conducted by Fu-Wei Wang, et al. in Taiwan, more than 400 participants were asymptomatic; 29.8% of those who underwent OGD had a mean age of 50 years-59 years; 66% of the men were affected; and 59.4%, 18.2%, and 3.5% had fundic gland, hyperplastic, and adenomatous polyps, respectively [6]. The duodenum is a rare site of polyps in the gastrointestinal tract. According to a review conducted by Peter John Basford and Pradeep Bhandari, duodenal polyps are prevalent in 0.3%-4.6% of patients who underwent gastroscopy. Most patients are asymptomatic, and duodenal adenoma can be partial or sporadic [7,8].

Risk Factors for Gastric Polyp

Active smoking and lack of regular exercise were found to be the main risk factors ($p=0.016$, 0.009 , and 0.045 , respectively). Other risk factors with fewer effects were high BMI, alcohol consumption, excessive coffee consumption, and tea consumption, in addition to spicy food consumption, education level, family history of gastric cancer, and sex distribution [6].

Diagnosis of Upper GI Polyps

Most patients with upper GI polyps are asymptomatic. Some patients may present with dyspepsia, symptoms of UGI bleeding, and symptoms of anaemia or obstruction. The finding of upper GI polyps remains an incidental finding. Recently, regular endoscopy has led to a greater prevalence of polyps; unlike for lower GI polyps, for which the macroscopic appearance of gastric polyps is difficult to distinguish, polyp biopsy is mandatory. Kenan Buyukasik and Mert Mahsuni Sevinc conducted a retrospective analysis of 55,987 upper gastrointestinal endoscopy reports, and dyspepsia was the most common symptom (43%). The most common site was the antrum (43.9%), the corpus (22.7%), the cardia (16.7%), the fundus (4.54%), the second portion of the duodenum (4.54%), the bulbous (3.03%) and the lower end of the oesophagus (4.54%). The histopathological types of polyps included hyperplastic polyps (66.7%), fundic gland polyps (6.06%), squamous cell polyps (6.06%), Hematomata polyps (4.54%), and pyloric gland adenomas (4.54%). Histopathological analysis of the gastric mucosa revealed chronic atrophic gastritis (50.84%), *Helicobacter pylori* infection (55.9%), and intestinal metaplasia (32.20%) [9]. The prevalence of gastric polyps among anaemic patients was studied by Alhaddad, Eric M. Ward, and others. Over nine hindered anaemic patients underwent OGD; 14 (1.4) patients had hyperplastic polyps in the gastric antrum, seven had multiple polyps, and nine had IDA. In conclusion,

hyperplastic polyps of the stomach with gastrointestinal blood loss and iron deficiency anaemia should be considered [10].

METHODS

This was a descriptive observational study conducted in the endoscopy department of Soba University Hospital from March 2017 to March 2020. Soba University Hospital is considered one of the tertiary institutions in Sudan. The endoscopy unit at Soba Hospital is considered one of the well-equipped units in Khartoum state, with consultant physicians and surgeons performing the endoscopy lists.

Inclusion and Exclusion Criteria

We included all patients older than 18 years of age who were admitted to the endoscopy unit during the study period and who had OGDs with upper GI polyps. Patients under the surveillance program for upper GI polyps were also included. Our study variables included age, sex, presenting complaints, comorbidities such as diabetes and hypertension, smoking status, alcohol consumption, family history, regular use of certain medications, endoscopic findings, and histopathology reports. Along with endoscopic and histopathology reports, data were collected *via* structured questionnaires *via* phone calls and direct interviews. The data were analysed with the Statistical Package for the Social Sciences (SPSS) version 24. Qualitative data were analysed using correlation tests and simple linear regression, and a P value less than 0.05 was considered to indicate statistical significance. Written informed consent was obtained from each participant, and ethical clearance was obtained from the ethical committee of the Sudan Medical Specialization Board.

RESULTS

Male patients accounted for 55.2% ($n=58$) of the population, while females represented 44.8% ($n=47$) (Figure 1). The prevalence of upper Gastrointestinal (GI) polyps among the Sudanese population was 5.6%. The patients selected for the study ranged in age from 18 to 94 years, with a mean age of 51 years \pm 15.8 years. The most affected age group was 34 years-48 years, comprising 31.4% of the sample (Figure 2).

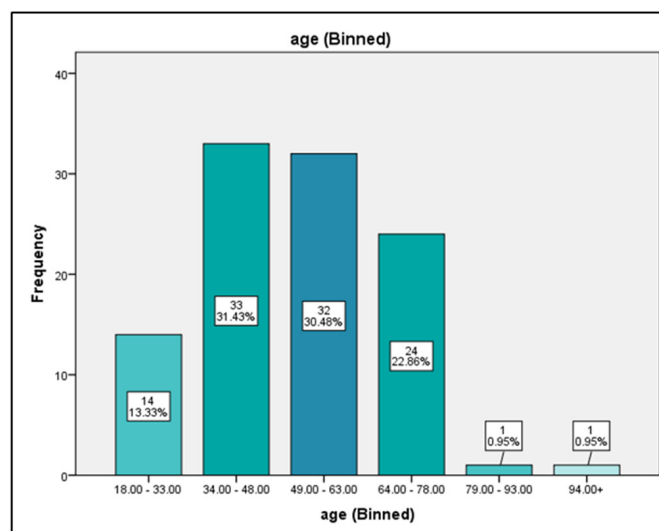


Figure 1: Age distribution of patients included in the study

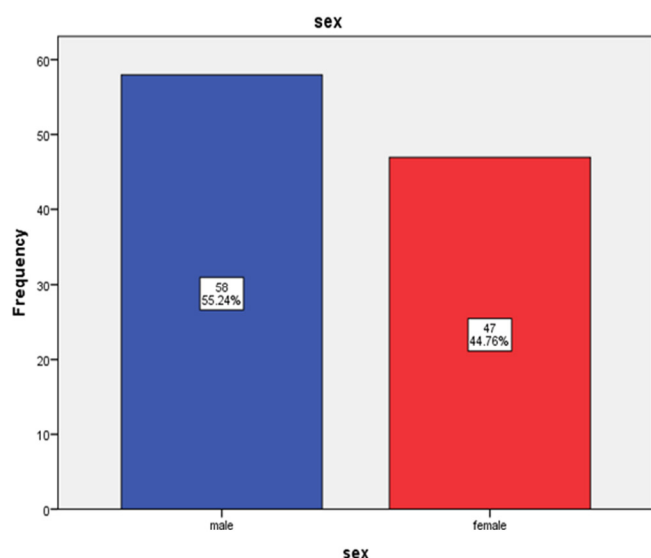


Figure 2: Sex distribution of patients included in the study

The main complaints were epigastric pain (40%, n=42), anaemia (13.3%, n=14), dyspepsia (13.3%, n=14), hematemesis (12.4%, n=13), melena (9.5%, n=10), vomiting (8.6%, n=9), and weight loss/dysphagia (4.8%, n=5). Additionally, 21% of patients underwent follow-up for oesophageal varices, and 5.7% underwent surveillance endoscopy (Table 1).

Table 1: Indications for OGD in patients with UGI polyps (n=105)

Clinical Presentation	Frequency	Percent (%)
Epigastric Pain	42	40
Oesophageal Varices	22	21
Dyspepsia	14	13.3
Anemia	14	13.3
Hematemesis	13	12.4
Melena	10	9.5
Vomiting	9	8.6
Loss of Weight	5	4.8
Ascites	5	4.8
Dysphagia	5	4.8
Surveillance	6	5.7

A smoking history was reported for 11.4% of the participants (n=12), while alcohol consumption was noted for 4.8% (n=5). Chronic NSAID use was found in 13.3% (n=14), prolonged PPI use was found in 8.6% (n=9), and both were found in 6.7% (n=7). The comorbidities among patients with polyps included diabetes alone in 3.8% (n=4), hypertension alone in 5.7% (n=6), and both diabetes and hypertension in 6.7% (n=7). A family history of polyps was identified in 3.8% of the patients, while a family history of cancer was found in 10.4% of the patients (colorectal: 2.9%, uterine: 3.8%, oesophageal: 1.9%, stomach: 1%, and combined breast and uterine: 1%). Anatomically, oesophageal polyps accounted for 13.3% (n=14), gastric polyps for 64% (n=68), duodenal polyps for 21% (n=22), and multiple gastric and duodenal polyps for 1% (n=1). The polyps were predominantly less than 0.5 cm (49.8%, n=52), with 30% (n=32) larger than 1 cm (Figure 3). The polyp shapes included sessile (37.1%, n=39), flat (14.3%, n=15), pedunculated (7.6%, n=8),

and 38.1% (n=40) without endoscopic description (Figure 4).

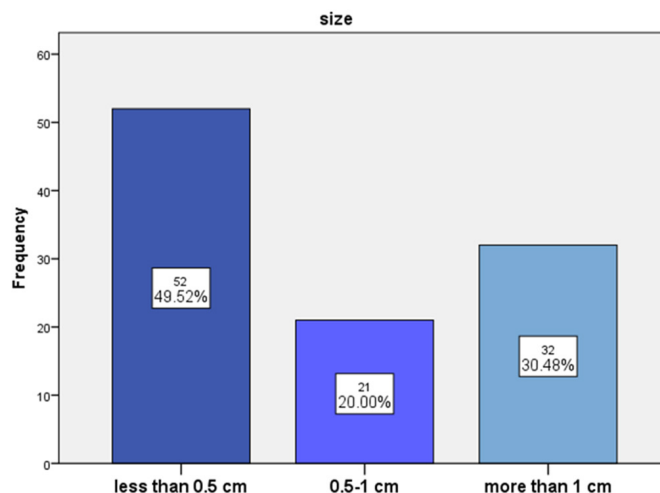


Figure 3: Differences in the sizes of UGI polyps among the study sample

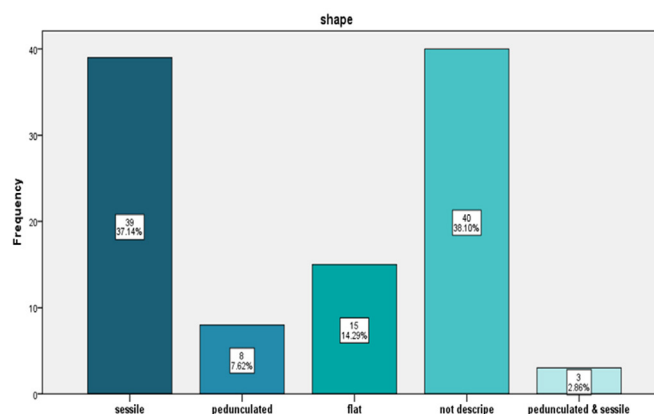


Figure 4: Differences in the shape of UGI polyps among the study sample

The mucosal background was normal in 29.5% (n=31), inflamed in 28.6% (n=30), and not described in 41.9% (n=44). Among the 105 patients with upper GI polyps, 62% (n=65) underwent histopathology, revealing inflammatory polyps (33.3%, n=35), adenomatous polyps (10.5%, n=11), hyperplastic polyps (7.6%, n=8), and fundic gland polyps (5.7%, n=6). Adenocarcinoma was found in 1.9% (n=2) of the patients (Table 2). High-grade dysplasia was detected in 6.7% (n=7) of the histopathology samples, with 36% (n=4) of the adenomatous polyps exhibiting high-grade dysplasia. No significant correlation was found between smoking status, alcohol consumption, NSAID or PPI use, family history of polyps or cancer, or site of polyps (P value <0.05).

Table 2: Different histological types of UGI polyps (n=65)

UPPER GI	Frequency	Percent (%)
Fundic gland	6	5.7
Hyperplastic	8	7.6
Adenomatous	11	10.5
Inflammatory	35	33.3
Adenocarcinoma	2	1.9
Oesophageal web	1	1
Carcinoid tumour	1	1

Benign lipomatous 1 1

DISCUSSION

To our knowledge, there are limited published data on the prevalence and characteristics of gastric polyps in our country. Our study, based on a review of 2003 OGD reports, revealed an upper GI polyp prevalence of 5.6% (n=105). Gastric polyps accounted for 3.4% (68) of the population; this figure is close to the international rate (5%) and lower than that reported by Wei Wang, et al. (29.8%, n=39) [6,11]. There were more males (55.2%) than females (44.8%). These findings contrast with those from Saudi Arabia, where females were more common [12,13]. The mean age in our study was 51 years \pm 15 years, consistent with global trends [9,11,12].

The mean age in our study was 51 years \pm 15 years, consistent with global trends. Most upper GI polyps are incidentally

Table 3: Correlations between size and type of upper GI polyp

		less than 0.5 cm	0.5 cm-1 cm	more than 1 cm	Total
Histopathology	Fundic gland	2	2	2	6
	Hyperplastic	1	2	5	8
	Adenomatous	4	1	6	11
	Inflammatory	17	9	9	35
	Adenocarcinoma	0	0	2	2
	None	27	6	7	40
	Oesophageal web	0	1	0	1
	Carcinoid tumor	0	0	1	1
	Benign lipomatous	1	0	0	1
	Total	52	21	32	105
		Correlations			
Pearson Correlation					-.262**
Sig. (2-tailed)					0.007

needed to explore the implications of these findings [17,18] (Table 3).

CONCLUSION

- The prevalence of upper GI polyps was 5.6%, with gastric polyps accounting for 3.4%.
- Epigastric pain was the primary presentation.
- The dominant endoscopic features were small size (>0.5 cm) and a sessile shape.
- Inflammatory polyps were the most common type, constituting 33.3% of the polyps.

RECOMMENDATION

- Upper GI polyps are not uncommon in our country; therefore, further studies are warranted.

LIMITATION

The limitations of this study were that it was a single-center study. Additional centers need to be involved in future studies. Another limitation is the gap between the number of patients

discovered during endoscopy, with epigastric pain being the most common symptom (40%, n=42). Other symptoms included dyspepsia (13.3%, n=14) and anaemia [9,14]. Risk factors such as NSAID use, PPIs, smoking, alcohol consumption, family history of polyps, cancer, DM, and HTN were not significantly correlated with polyps (p-value <0.05) [6]. Esophageal polyps accounted for 13.3% (n=14) of the cases, with inflammatory polyps being the most common (33.3%). Small polyps were prevalent (49.8%), consistent with the findings of previous studies. In terms of histopathology, inflammatory polyps were most common (33.3%), followed by adenomatous (10.5%) and hyperplastic (7%). Oesophageal polyps are rare in the literature and necessitate further investigation [14-16]. Additionally, 21% of patients with upper GI polyps were found to have esophageal varices due to portal hypertension, reflecting the high prevalence of portal hypertension in our country due to schistosomal periportal fibrosis. However, further research is

and the histopathology samples; some of them were lost, while others were not performed by the patients themselves. Additionally, several reports contained missing data that impacted our results. The correlation between GI polyps and risk factors was difficult to determine, and case-control studies need to be conducted in the future.

AUTHORS CONTRIBUTION

EMA, YAA, and SEM conceived the idea for the study. EMA, YAA, and WA contributed equally to the data collection and data analysis. EMA, YAA, and SEM contributed to the writing and review of the manuscript. All the authors approved the manuscript.

ACKNOWLEDGEMENT

None.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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