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Research Article

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

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Abstract

Gastrointestinal polyp is an abnormal protrusion from the mucosal surface of the gastrointestinal lumen, it can be taken to mean a protuberant growth which can be either benign or malignant. The objectives of the study were to study the clinical feature, possible risk factors, endoscopic features, and histopathological pattern of Upper gastrointestinal polyps among adult Sudanese patients.

Patients and methods: The study was a retro prospective, descriptive, cross-sectional hospital-based study. Conducted at Soba University Hospital department of endoscopy, in the period from March 2017 to March 2020.The study was conducted on patients with gastrointestinal polyps found upon OGD (Esophago-Gastro-Duodenoscopy).

Result: We revised 2003 endoscopy reports, 105 patients had upper GI polyps. The mean age was 51 ± 15 SD (the more affected age group is 34–48-year-old 31.4%). Male sex was the predominant. The main clinical presentation was epigastric pain 40% followed by portal hypertension 21% (22) while anemia and dyspepsia were 13.3%(n14) .The main site of polyps was the stomach 64%, while duodenum and esophagus were 21%(n22),13%3(n14) respectively, most polyps were small and sessile. The predominant histopathological type is 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% with gastric polyps being 3.4%. The main presentation was epigastric pain. Small size> 0.5cm and sessile shape was the dominant endoscopic features however inflammatory polyps were the most common type of polyps.

Keywords: Upper GI Polyps; Dyspepsia; Anemia; OGD; Fundic Gland Polyps

Introduction

Polyp is a Greek word mean morbid lump it may arise from any organ contains mucosal lumen like gastrointestinal, respiratory, or genitourinary tract. Gastrointestinal polyps are an abnormal protrusion from the mucosal surface of the gastrointestinal lumen [1]. Upper GI is considered up to the second part of duodenum, assessed by OGD and colorectal polyp by colonoscopy and/or flexible sigmoidoscopy.

Upper GI polyps' classification

Gastrointestinal polyps can be classified macroscopically and/or histologically. Polyps can't be distinguished macroscopically by endoscopy only, due to the similarity in appearance. Polyps classified histologically into: Epithelial, Hamartomata's, Mesenchymal [3]. Also Polyps can be classified into: Fundic gland polyp, Hyperplastic and Adenomatous polyp. Duodenal polyps are like either gastric or colon polyps in their Histopathological pattern [2].

Prevalence and pattern of upper GI polyps

Esophageal polyps are very rare. Many case reports discussed the giant esophageal polyps as a benign neoplasm with prevalence of (0.03%). Esophageal polyps mainly contain fibrous tissues, adipose tissues and blood vessels, the major site of growth is the upper part [4].

In a review conduct by Dr Islam and Dr Patel at Mayo Clinic, regarding the gastric polyp they discussed the lack of literature to support management, decisions for endoscopists despite of 90% of patient are asymptomatic. A subcategory of gastric polyps need more intervention and histology should be considered [3]. The importance of investigating gastric polyps were potentiated in a meta-analysis conduct by Zhen-Jie Wue., *et al*, through there finding of direct relation between gastric polyp and present of colorectal polyp the prevalence was higher than 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, over four hindered participants were asymptomatic, underwent OGD 29.8% had gastric polyps mean age was 50–59-year-old, men were more affection 66%," fundic gland, hyperplastic, and adenomatous polyps were 59.4%, 18.2%, and 3.5%, respectively [6].

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 cases presented to gastroscopy. Most of the patient are asymptomatic and duodenal adenoma can be part of FAP or sporadic [7,8].

Risk factors of 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 less effect were high BMI, alcohol consumption, excessive coffee, and tea consumption, In addition to spicy food, education level, family history of gastric cancer and gender distribution [6].

Diagnosis of upper GI polyps

Most of the patients with Upper GI polyp are Asymptomatic. Some may present with dyspepsia, symptoms of UGI bleeding and symptoms of anemia or obstruction. The finding of upper GI polyps remains an incidental finding. Recently regular practice of endoscopy led to more prevalence of polyp, unlike the lower GI polyp the macroscopic appearance of gastric polyp is difficult to differentiate the type or subclass, hence polyp biopsy is mandatory suspicion situations.

Kenan Buyukasik, Mert Mahsuni Sevinc conducted a retrospective analysis on (55,987) upper gastrointestinal endoscopy reports, dyspepsia was the most common symptom in (43%). The most common site was, the antrum in (43.9%), the corpus in (22.7%), cardia was in (16.7%), fundus in (4.54%), the second portion of the duodenum in (4.54%), the bulbus in (3.03%) and lower end of the esophagus in (4.54%). Histopathological types of polyps include, hyperplastic polyps (66.7%), fundic gland polyps (6.06%), squamous cell polyps (6.06%), hamartomata's polyps (4.54%), and pyloric gland adenoma (4.54%). Histopathological analysis of the gastric mucosa showed chronic atrophic gastritis in (50.84%), Helicobacter pylori infection identified in (55.9%) and intestinal metaplasia (32.20%) [9].

Prevalence of gastric polyp among anemic patient was studied by al haddad, Eric m. ward and., *et al.* Over than nine hindered anemic patients underwent OGD, 14 (1.4) patients had hyperplastic polyp in the gastric antrum, seven of them had multiple polyps, and nine patients had iron deficiency anemia. The conclusion is to consider hyperplastic polyps of the stomach in gastrointestinal blood loss and iron deficiency anemia [10].

Methods

This is a descriptive observational study that conducted in the endoscopy department at Soba university hospital, in the period from March 2017 to Marach 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 include all patients over 18 years of age, attending the endoscopy unit during the study period and had a OGD with finding of Upper GI polyp. Patients under surveillance program for upper GI polyps were included too. Our study variable includes Age, sex, presenting complains, co morbidities such as diabetes and hypertension**,** smoking, alcohol consumption, family history, regular use of certain medication, endoscopic finding, and histopathology re-

ports. Data were collected via structure questionnaire from phone calls and direct interviewing of the patients along with endoscopic and histopathology reports.

Data were analysed with Statistical Package for the Social Sciences (SPSS) version 24. Qualitative data were analysed using correlation test and simple linear regression, and the P-value was considered significant if less than 0.05. Written informed consent obtained from each participant, and ethical clearance was obtained from the ethical committee of Sudan Medical Specialization Board, as well as hospital administration approval.

Results

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

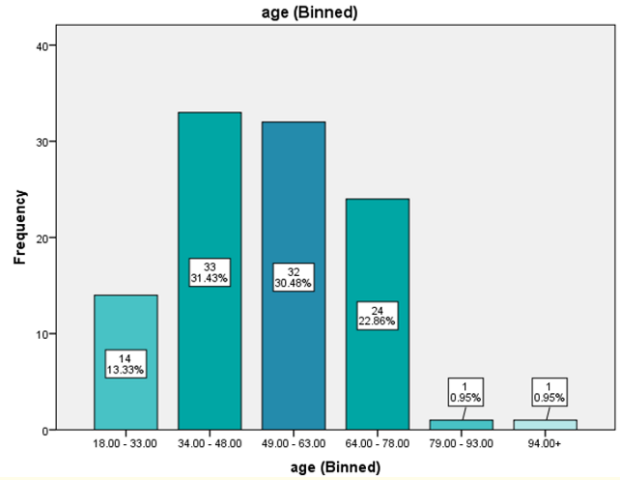

Figure 1: Showing age distribution of patients included in the study.

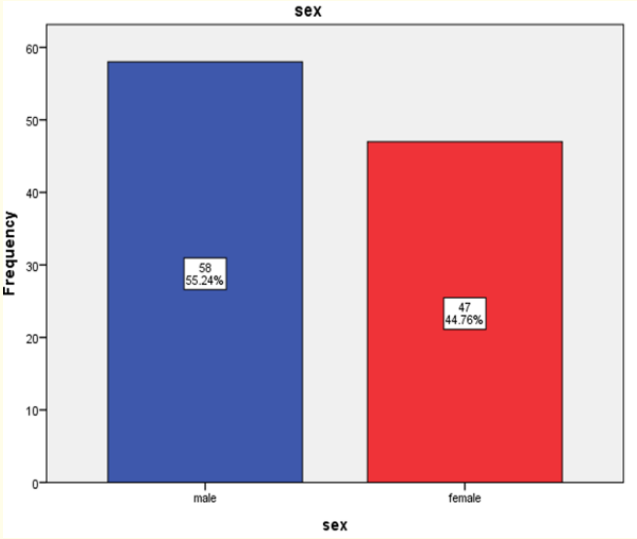

Figure 2: Showing sex distribution of patients included in the study

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 oesophageal varices follow-up, and 5.7% came for surveillance endoscopy (Table 1).

Smoking history was reported in 11.4% (n = 12), while alcohol consumption was noted in 4.8% (n = 5). Chronic NSAID use was found in 13.3% (n = 14), prolonged PPI use in 8.6% (n = 9), and both in 6.7% (n = 7). 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). Family history of polyps was identified in 3.8%, while family history of cancer was found in 10.4% (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).

Clinical Presentation	Frequency	Percent %
Epigastric pain	42	40
Esophageal 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

Table 1: Indication for OGD in patients with upper GI Polyps.

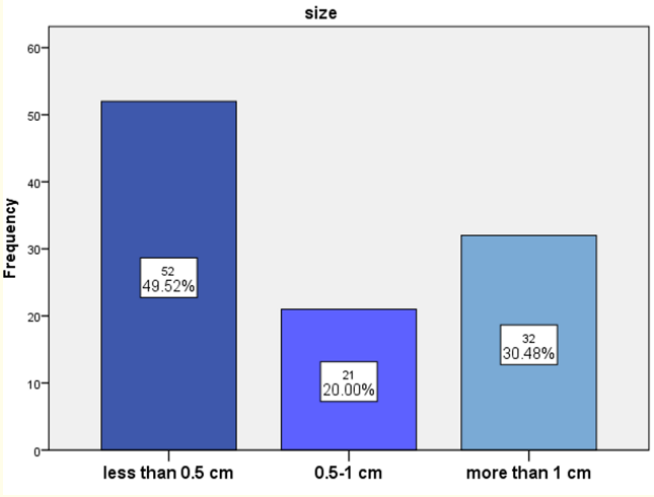

Figure 3: Showing difference in sizes of UGI polyps among study sample.

Polyps were predominantly less than 0.5cm (49.8%, n = 52), with 30% (n = 32) larger than 1cm (Figure 3). 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).

Mucosal background was normal in 29.5% (n = 31), inflamed in 28.6% (n = 30), and not described in 41.9% (n=44). Out of 105 patients with upper GI polyps, 62% (n = 65) underwent histopathology, revealing inflammatory polyps (33.3%, n =3 5), 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 cases (Table 2). High-grade dysplasia was detected in 6.7% (n = 7) of histopathology samples, with 36% (n = 4) of adenomatous polyps exhibiting high-grade dysplasia. No significant correlation was found between smoking, alcohol consumption, NSAID or PPI use, family history of polyps or cancer, and the site of polyps (P value < 0.05).

Discussion

To our knowledge, there is 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), a figure close to international rates (5%) and lower than that reported by Wei Wang., *et al.* (29.8%, n = 39) [6,11].

Males were more affected, comprising 55.2%, while females represented 44.8%, contrasting with findings from Saudi Arabia where females were more dominant [12,13]. The mean age in our study was 51 ± 15 SD, consistent with global trends [9,11,12].

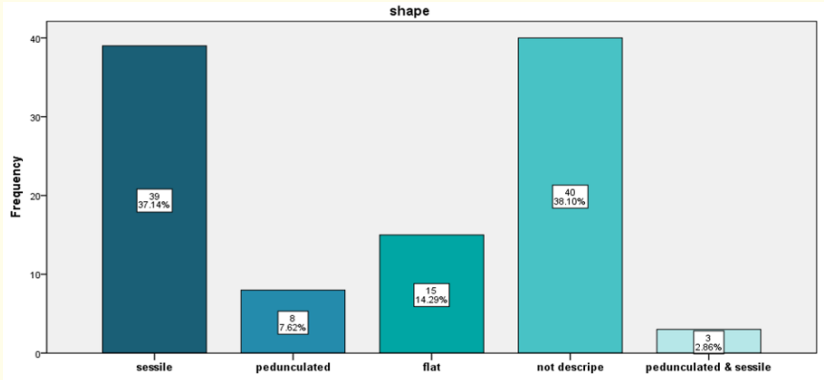

Figure 4: Showing difference in shape of UGI polyps among study sample.

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	1.0
Carcinoid Tumour	1	1.0
Benign lipomatous	1	1.0

Table 2: Different histology types of UGI polyps n = 65.

		Size			Total
		Less than 0.5 cm	0.5-1 cm	More than 1 cm	
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
	Oesphageal 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)	.007			

Table 3: Correlation between size and type of upper GI polyp n = 105.

Esophageal polyps accounted for 13.3% (n = 14) of cases, with inflammatory polyps being the most common (33.3%). Small-sized polyps were prevalent (49.8%), consistent with previous studies. In terms of histopathology, inflammatory polyps were most common (33.3%), followed by adenomatous (10.5%) and hyperplastic (7%). The presence of esophageal polyps is rare in the literature, necessitating 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. Further research is needed to explore the implications of these findings [17,18].

The mean age in our study was 51 ± 15 SD, consistent with global trends. Most upper GI polyps are incidentally discovered during endoscopy, with epigastric pain being the most common symptom (40%, n = 42). Other symptoms included dyspepsia (13.3%, n = 14) and anemia [9,14].

Risk factors such as NSAID use, PPI, smoking, alcohol consumption, family history of polyps, cancer, DM, and HTN showed no significant correlation with polyps (p value <0.05) [6].

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 (>0.5cm) and a sessile shape.
- Inflammatory polyps were the most common type, constituting 33.3%.

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. More centers needed to be involved in future studies, other limitation was the gap between the number of patient and the histopathology samples, some of them were lost while some were not done by the patients themselves, more over some reports contain missing data which impacted on our results. The correlation between the GI polyps and risk factors were difficult to determine, case control study need to be conducted in the future.

Competing Interests

None.

Authors' Contributions

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

Acknowledgements

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