

What is the consistency between the diagnoses of endoscopists and pathologists concerning malignant lesions of the gastrointestinal tract?

Gastrointestinal sistem lezyonlarının değerlendirilmesinde gastroenterolog ve patolog uyumluluğu ne orandadır?

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Background and Aims: To examine the association between endoscopic and histological diagnoses concerning malignancies of the gastrointestinal tract.

Material and Methods: Two hundred thirty one patients who underwent upper or lower gastrointestinal system endoscopy and had endoscopic biopsy were recruited retrospectively from the files of our center between the years of 2010 and 2012. The study was based on four types of endoscopic lesions including: mucosal irregularity, ulcerovegetating mass, ulcer and polyp, and four histopathologic diagnoses including polyps, ulcer, gastritis and adenocarcinoma.

Results: In all, 199 of 213 (86.1%) patients had gastric and duodenal biopsies and the remaining 32 (13.9%) had colonic and rectal biopsies. The mean age of the patients was 63.5 years and the mean microscopic size of the lesions was 12 mm. Fifty four (23.4%) patients had histopathologic diagnosis of malignancy. Of all the lower gastrointestinal system biopsies, 59.4% were diagnosed as malignant whereas the rate was only 17.7% for upper gastrointestinal system biopsies. **Conclusions:** The rate of compatibility for diagnosing the malignant lesions of the gastrointestinal system between gastroenterologists and pathologists is low and the probable reasons for this discrepancy may be attributed to the experience of the endoscopist and the endoscopy tool used.

Key words: Gastrointestinal lesion, endoscopy, histopathology

INTRODUCTION

Gastrointestinal malignancies continue to be the second leading cause of cancer-related deaths in developed countries. The early detection and treatment of gastrointestinal pre-neoplastic lesions have been demonstrated to significantly improve patient survival. Unfortunately, when patients present with symptoms of obstruction, pain, or bleeding due to cancer, the lesion is usually large, and is likely to be at an advanced stage, reducing the chance for a cure. Endoscopy of the gastrointestinal system is a technique used for direct visualization of the gastrointestinal tract (1,2). Gastroenterologists who perform gastrointestinal endoscopies make a provisional diagnosis after the procedure and then perform a biopsy to histopathologically evaluate the patient. There are a few studies focused on evaluating the concordance between endoscopic and histopathological diagnoses; however, these have generally focused on specific subjects, i.e., the endoscopic and histopathological evaluation of gastritis, or just a

Giriş ve Amaç: Çalışmadaki amacımız gastrointestinal sistem lezyonlarının gastroenterolog ve patoloğlar arasındaki tanısal uyumluluk oranını değerlendirmektir. **Gereç ve Yöntem:** Merkezimizde 2010-2012 Nisan tarihleri arasında üst ve alt gastrointestinal sistem endoskopisi yapılan ve biyopsi alınan 231 hasta çalışmaya dahil edilmiştir. Çalışma mukozal irregülarite, ülserovejetan kitle, ülser ve polip olmak üzere 4 endoskopik lezyon ve polip, ülser, gastrit ve adenokarsinom olmak üzere 4 histopatolojik tanı üzerine kurulmuştur. **Bulgular:** Tüm hastaların 199'una (%86.1) gastrik ve duodenal, 32'sine (%13.9) ise kolonik ve rektal biyopsi yapılmıştı. Hastaların yaş ortalaması 63.5 yıl olup, lezyonların mikroskopik boyut ortalaması 12 mm idi. Hastaların 54'ü (%23.4) histopatolojik olarak malignite tanısına sahip olup bunların %59.4'ü alt, %17.7 si üst gastrointestinal sisteme aitti. **Sonuç:** Çalışmada merkezimizdeki patolog ve endoskopistler arasındaki tanısal uyumun düşük olduğu saptandı. Uyumsuzluğun muhtemel nedenleri endoskopi deneyimi ve kullanılan endoskopik aletler olarak yorumlandı.

Anahtar Kelimeler: Gastrointestinal lezyon, endoskopi, histoloji

specific part of the gastrointestinal mucosa such as the upper gastrointestinal system (3,4). A correlation between the endoscopic and histopathological diagnoses were mentioned in some of these studies, while others suggested that it is not possible demonstrate such a correlation (3-6).

This study aimed to investigate the compatibility rate of gastroenterologists and pathologists in diagnosing gastrointestinal malignant lesions.

MATERIALS AND METHODS

We performed a retrospective study of patients seen at our Center, Department of Pathology, between 2010-2012. During this period, 937 upper and lower gastrointestinal endoscopies were performed. The endoscopy reports of the patients were reviewed retrospectively and 231 patients who had suspicious lesions for malignancy were included in the

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study. Signed consents were obtained from the subjects in the endoscopy unit before the endoscopic procedure. After 8-12 hours of fasting, local oropharyngeal sedation was administered, using 2% Xylocaine spray for upper gastrointestinal system biopsies and intravenous midazolam (0.07-0.1 mg/kg) for lower gastrointestinal system biopsies.

The biopsy specimens were taken from the areas which were suspicious for malignancy. For the upper gastrointestinal system, biopsy sites were corpus- antrum transition, corpus, antrum, pylorus, cardia and duodenum, and for lower gastrointestinal system, ascending colon, descending colon, transverse colon, sigmoid colon, caecum and rectum. Biopsy specimens were fixed in formalin, embedded in paraffin, and stained with hematoxylin and eosin.

Statistical tests were performed using the Statistical Package for the Social Sciences (SPSS) version 15.0. The chi-square

test, Mann-Whitney U test, Post Hoc tests and Kruskal- Wallis tests were used to analyze categorical variables, and a value of $p < 0.05$ was regarded as significant.

RESULTS

Among 937 patients who underwent upper or lower gastrointestinal endoscopy for various gastrointestinal complaints, 231 patients who had suspicious lesions for malignancy were included in the study. The study group was comprised of 107 (46.3%) females and 124 (53.7%) males. The mean patient age was 63.5 years (range, 25-89); mean microscopic size of the lesions was 12 mm (range, 2-50 mm). Gastric and duodenal biopsies were obtained on 199 patients, 99 (49.7%) females and 100 (50.3%) males; colonic biopsies were performed on 32 patients, 8 (25%) female and 24 (75%) male ($p < 0.01$). Both sexes had similar rates for endoscopically sus-

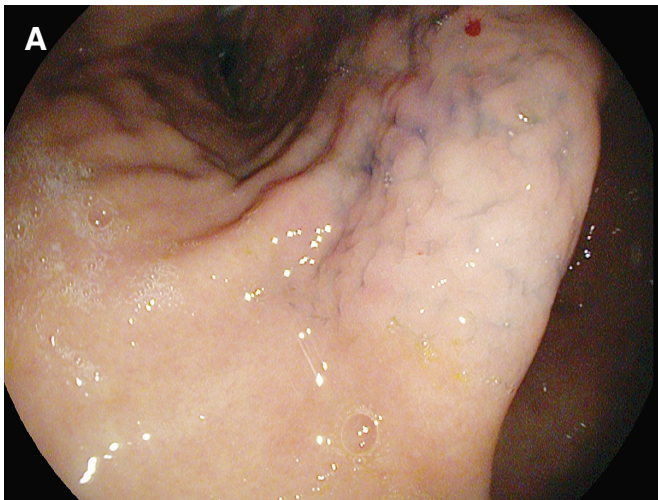


Figure 1A. Mucosal irregularity in antrum.

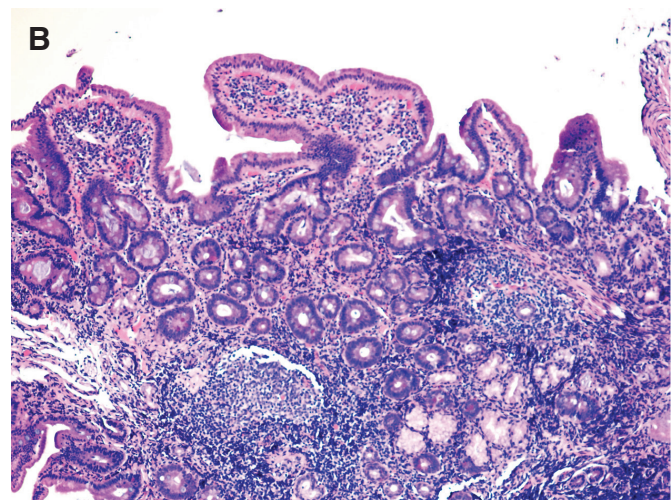


Figure 1B. Chronic active gastritis with regenerative changes in antral mucosa (H&E,x100).



Figure 2A. Ulcer in transvers colon.

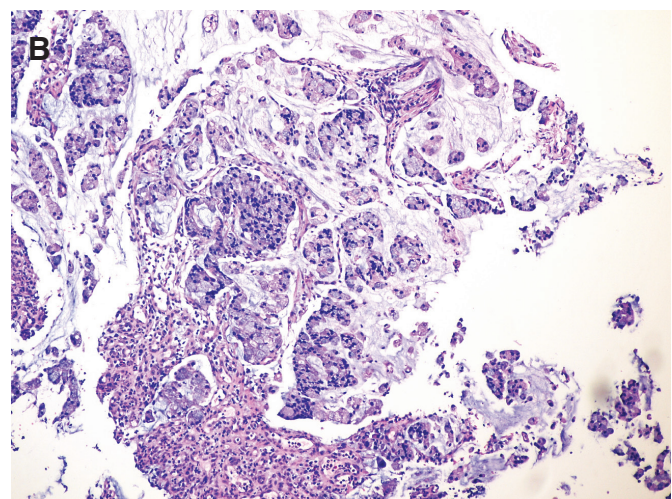


Figure 2B. Mucinous adenocarcinoma (H&E,x100).

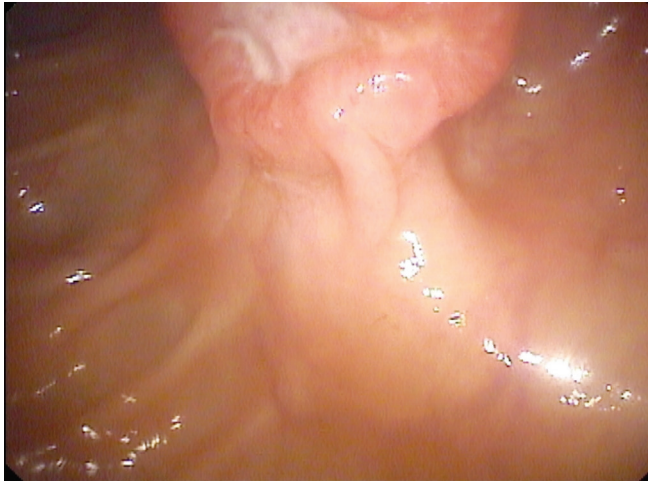


Figure 3. Polyp in ascendat colon.

picious lesions of the upper gastrointestinal system. Fifty-four (23.4%) patients had a histopathologic diagnosis of malignancy. The rate of malignancy was 59.4% for lower gastrointestinal system biopsies and 17.7% for upper gastrointestinal system biopsies ($p < 0.001$). The lesions, which were suspicious for malignancy endoscopically were mucosal irregularity (19%) (Figure 1A, 1B); ulserovegetan mass (18.2%); ulcer (46.8%) (Figure 2A, 2B); and, polyps (16%) (Figure 3). The most suspected lesion of the upper gastrointestinal system was ulcer (53.3%), while ulserovegetan mass (54.9%) was the most suspected lesion for lower gastrointestinal system

($p < 0.01$) (Table 1). In terms of the size of the lesions, there was a significant difference between the polyps (15 ± 9.5 mm) and mucosal irregularity (8.6 ± 3.8 mm) ($p < 0.01$). Among these, 44 lesions, which were described as mucosal irregularity by the endoscopist, were diagnosed as adenocarcinoma (13.6%), polyp (4.5%), or *Helicobacter Pylori* (HP) gastritis (81.8%) by histopathologic examination. Forty-two lesions, which were described as ulserovegetan mass by the endoscopist, were diagnosed as adenocarcinoma (90.5%), polyp (7.1%), or ulcer (2.4%) in histopathologic examination. 108 lesions, which were described as an ulcer by the endoscopist, were diagnosed as adenocarcinoma (5.6%), polyp (1.9%), HP gastritis (69.4%), or ulcer (23.1%) upon histopathologic examination. Thirty seven lesions, which were described as polyp by the endoscopist, were diagnosed as adenocarcinoma (10.8%), polyp (45.9%), or HP gastritis (43.2%) upon histopathologic examination (Table 2). The patients who had the histopathologic diagnosis of adenocarcinoma were older than the patients from other histopathological diagnostic groups.

DISCUSSION

Diagnostic endoscopy of the gastrointestinal tract is a well-developed procedure that has led to a decline in gastric cancer rate, as shown by epidemiological studies. (7). Gastroenterologists have the major role in determining malignant lesions by endoscopic examination; however, histopathologic confirmation of malignancies is still needed for a definite diagno-

Table 1. Summary of the results in relation to the localization of the lesions

Localization	Gender (f/m)	Mean age (year)	Size of the lesion (mm)	Endoscopic Findings				Histopathologic Diagnosis			
				Mucosal irregularity	Ulcerevegetan mass	Ulcer	Polyp	Malign	Gastritis	Ulcer	Polyp
Upper GIS (n=199)	99/100	63.1	1.7	43 (21.6%)	23 (11.6%)	106 (53.3%)	27 (13.6%)	35 (17.6%)	127 (63.8%)	25 (12.6%)	12 (6%)
Lower GIS (n=32)	8/24	65.9	13.8	1 (3.1%)	19 (59.4%)	2 (6.2%)	10 (31.2%)	19 (59.4%)	0 (0%)	1 (3.1%)	12 (37.5%)
Total (n=231)	107/124	63.5	12	44 (19%)	42 (18.2%)	108 (46.8%)	37 (16%)	54 (23.4%)	127 (55%)	26 (11.3%)	24 (10.4%)

Table 2. Correlation of the endoscopic findings and histopathologic diagnosis

Endoscopic Findings	Histopathologic Diagnosis			
	Malign	Gastritis	Ulcer	Polyp
Mucosal irregularity (n=44)	6 (13.6%)	36 (81.8%)	0 (0%)	2 (4.5%)
Ulcerevegetan mass (n=42)	38 (90.5%)	0 (0%)	1 (2.4%)	3 (7.1%)
Ulcer (n=108)	6 (5.6%)	75 (69.4%)	25 (23.1%)	2 (1.9%)
Polyp (n=37)	4 (10.8%)	16 (43.2%)	0 (0%)	17 (45.9%)
Total (n=231)	54 (23.4%)	127 (55%)	26 (11.3%)	24 (10.4%)

sis. In our study, 199 of the 231 subjects were suspected of having a gastric malignancy and the remaining 32 subjects were suspected of having a colonic malignancy following endoscopic evaluation. The biopsy diagnosis for 54 of those patients were reported as positive for malignancy - 35 of which were gastric and 19 colonic malignancies. The remaining 177 subjects were diagnosed as follows: gastritis in 127 cases, ulcer in 26 cases and polyp in 24 cases. Overall, 59.4% of the lower gastrointestinal system biopsies and 17.7% of the upper gastrointestinal system biopsies were malignant but we cannot claim that endoscopy is a better tool for determining colonic malignancies due to the small number of cases in the second group. There are only a few studies focused on evaluating the concordance between endoscopic and histopathological diagnoses, but these have generally focused on gastric mucosa (8,9). Amano et al. claimed that the sensitivity and concordance of endoscopic diagnosis of gastric and duodenal ulcer scars are not satisfactory for the usage of endoscopy as a sole diagnostic modality for previous ulcer disease (10). Fernando et al. stated that endoscopic accuracy for colorectal cancer localization was very high and significantly better than that of computerized tomography (11). They claimed that obstructive tumors and those located in the descending colon or cecum were associated with a significant increase in error risk of endoscopic colorectal cancer localization (11). In the present study, we examined 32 lower gastrointestinal

system biopsies and only 2 of them were from cecum and 3 were from descending colon and any of them had histopathologic features of malignancy. With a study performed on large number of patients, Loffeld et al. indicated that the diagnostic yield of colonoscopy is high for upper and lower GI tract cancers (12). They also indicated that there was an increase in the endoscopic diagnosis of polyps, which they claim will lead to a decrease in the number of colorectal cancer rate. (12). In our study, nine of the 37 colorectal polypoid biopsy specimens that were suspicious for malignancy were diagnosed as malignant and 6 had dysplastic foci.

A recent study from Turkey showed that 54 of 56 subjects who were suspected of having a gastric malignancy after being examined endoscopically were reported to have gastric malignancies histopathologically (4). The different results obtained from 2 studies performed in 2 different centers can be attributed to the experience of the endoscopists or the endoscopy tool used. Since conventional endoscopy was used in both centers, we suggest that the experience of the endoscopist may have been the leading factor in this discrepancy. In conclusion, the compatibility in our Center between the pathologist and gastroenterologist for evaluating gastrointestinal malign lesions is low; the most likely reason for the discrepancy is the experience of the gastroenterologist performing the endoscopic procedure.

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