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Original article

Comparison of endoscopic diagnosis and histopathological results of patients with a preliminary diagnosis of malignancy and the role of the nurse in planning

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Abstract. *Study Objectives:* Endoscopy has become a gold standard for the diagnosis. In these procedures, pathologic help is taken for a definite diagnosis. An appointment is made according to the priorities of the patients applying to the endoscopy. In this sense, the role of nurses is important in regulating appointments. *Methods:* In this study, it was aimed to compare endoscopy results with pathology results of patients who were sent to the endoscopy unit considering the suspicion of cancer in the digestive system. A retrospective study involving 570 patients completed endoscopy between January 2014 and December 2016 was approved. Changes in gastrointestinal system (GIS) hemorrhage, occult blood presence in the stool, Ca height, anemia of iron deficiency, malignancy, hematochezia, colon Ca, lamellar Ca stain, excess weight loss, change in bowel habit, wall thickening in the gastrointestinal tract or mass-indicating signs in radiological tests were considered criteria for cancer pre-diagnosis. *Results:* Of the 368 patients with upper gastrointestinal endoscopy, 18 (4.9%) were diagnosed with endoscopy, and 9 (2.4%) were diagnosed with cancer. Of the 411 patients undergoing gastrointestinal endoscopy, 25 (6.1%) had endoscopic findings and 17 (4.1%) had pathologic cancer diagnoses. *Conclusion:* The training of secretaries and nurses in the delivery of endoscopy appointments can be effective in making ensuring participation, ensuring patient safety, using time more efficiently, and most importantly, not being exposed to possible risks. It can also contribute to reducing unnecessary workload and providing more time for patients. Thus, patient satisfaction is expected to have a positive effect.

Keywords: Cancer, Malignancy, Gastrointestinal System Cancer.

Introduction

Gastrointestinal system (GIS), which means stomach and intestine, is the system that results in inclusion in the digestive system in the large intestine. Endoscopy allows direct visualization of the gastrointestinal tract, stomach, small intestine, and large intestine in GIS (1). Diagnosis, treatment, and screening procedures performed in endoscopes with GIS are called endoscopy. Endoscopy is the most effective method for pathology evaluation, histopathologic diagnosis, pathologic sampling (2).

Progress in the endoscopy procedure, which has become the gold standard in the last four decades to assess the gastrointestinal system, has become indispensable for surgery, with the establishment of criteria that yield very good results in the screening of colon cancer giving much better results (3).

Preliminary diagnosis in policlinics and malignancy which is diagnosed as endoscopy are utilized

in the pathology science for a definite diagnosis. The treatment of the patient begins with the pathologic outcome (4). Biopsies taken for histopathological diagnosis are examined under which cells are formed under a microscope. The cells that make up the tissues and organs multiply at a certain rate, while the cells that lose their function die and die. Cancer cells grow irregularly beyond this normal course. These uncontrolled cells can affect or inhibit the function of the organ in which they are present. Functional disorders caused by cancer adversely affect the quality of life of the individual (5).

Quality of life (QL) is a multi-faceted concept that encompasses many areas. It may even differ between individuals in the same community. The following are some of the things that should be included in the QL: functional adequacy, competence in psychological and social functions, complaints about disease, and treatment (6). Depending on the loss of a function, the effects on the normal functions of the individual can be defined as QL (7). Uncontrolled development of cancer cells can negatively affect an individual's quality of life and may also cause death.

Were caused by cancer in Turkey ranks second after the origin of death from circulatory diseases. In 2016, 80577 (19.7%) reported that 1 out of every 5 patients who died due to illness lost their lives due to cancer (8).

The fact that the number of deaths from cancer is so high is undoubtedly important for early diagnosis and treatment. Endoscopy procedures are also one of the methods that provide early diagnosis. It is known that endoscopy appointments are given at different time intervals according to the potentials of the hospitals. According to the potential of the hospitals, the appointment of endoscopy is given for an average of two months later. Short-term appointments of the patients who are diagnosed with cancer are important in terms of accelerating the diagnosis. Patient appointments requiring endoscopy with a cancer diagnosis are usually given one day for upper GIS endoscopy and two days for lower GIS endoscopy.

Clinical preconditioning a cancer diagnosis for GIS requires an immediate appointment of the endoscopy appointment. If patient safety is considered, there is a risk of increasing the medical error rate of each emergency appointment. An appointment is made to perform the procedures in the endoscopy units. While secretaries give an appointment in some units, this is often done by nurses in the endoscopy unit because it is a very complicated situation. The officer who gives the endoscopy appointment needs to evaluate the patient and make the appointment at the most appropriate time.

Patients to be treated are evaluated by endoscopist or endoscopy nurse before endoscopy and evaluation form is prepared before endoscopy when evaluation endoscopy appointment is given. With these forms, the patient is evaluated holistically. First of all, all illnesses of the patient are learned and patients are examined for necessary sections, and approval is given for the treatment.

Preexisting diseases of the patient may cause some problems for endoscopy. These diseases should be assessed in advance, and opinions of other disciplines should be requested when deemed necessary. The patient should be informed about how to make preparations within their illnesses, which is to be informed about the doses of the drugs (9).

Material and Method

This study aimed to compare the results of endoscopy and pathology of patients who underwent cancer pre-diagnosis in GIS and determine the factors to be considered when appointments are given as sensitive to priorities. In this study, the data from the endoscopy unit of a university hospital in Turkey, clinics and the preliminary diagnosis of cancer with biochemical tests, gastroscopy and colonoscopy completed patients were used throughout for January 2014 to December 2016, to compare the results of pathology with endoscopy results. It will also be determined how much of the pre-diagnosis of cancer patients in GIS is diagnosed as having definitive cancer. The study was designed as a retrospective study. The study population consisted of 570 patients (n = 570), of whom only malignancy pre-diagnosis of these patients, upper gastrointestinal

endoscopy, and lower GIS endoscopy were completed among the 5077 patients whose endoscopy was performed. Endoscopy reports were used as data collection tools, endoscopy and hospital archives were used for requests, hospital patient registration, and automation systems were used for pathology results.

To work as limitations of the research; blood clotting in the stool used in the literature to determine the pre-diagnosis of cancer in endoscopic request forms, first-degree relatives of upper or lower digestive system carcinoma story, bloody stool, oral or makoto blood donation, iron deficiency anemia, change in intestinal habit for more than two weeks, short such as excessive weight loss, hematochezia, malignancy, the elevation of Ca in laboratory tests, the involvement of positive findings such as wall thickening in the digestive system in radiological tests, and the inclusion of patients applying with other preliminary diagnoses.

Statistical Analysis

For statistical analysis of the data obtained in the study, the PASW-Statistics 18.0 program was used. The data were expressed as a frequency and mean. For comparisons of nonparametric data, the chi-square test was used. The p-value of less than 0.05 was considered to show statistical significance.

Before starting the study, the necessary permission was obtained from the institution, along with the approval of the Non-invasive Clinical Studies Ethics Committee of the Health Research (under number: 2017/111/11/11) and Implementation Centre.

Results

316 (55.4%) women and 254 (44.6%) men of the 570 patients who had undergone endoscopy for cancer diagnosis were treated. Patients were between 19 and 91 years old and the mean age of all patients was 57.10. The average age of women was 55.75 and the average age of men was 58.79.

Endoscopy results and pathology diagnoses of the patients who underwent pathology at the upper GIS endoscopy were given in (Table 1) below.

A statistically significant correlation was found between the patients who underwent upper gastrointestinal endoscopy and the diagnostic results of the patients who had pathology from these patients ($p < 0.05$). It was determined that 18 (4.9%) of 368 endoscopies completed upper gastrointestinal endoscopy had cancer diagnosis endoscopically and 9 (2.4%) of them had a cancer diagnosis.

According to Table 2, the upper gastrointestinal endoscopy was performed, and 36 of the patients who were biopsied were found to have received the placenta diagnosis from the pathology department. It was found that 33 (91.7%) of the patients who received a plasia diagnosis received metaplasia and 3 (8.3%) were diagnosed with dysplasia.

Table 1. Comparison of Upper GIS Endoscopy Diagnoses with Pathology Diagnoses-Tekirdag, Turkey, 2014-2016.

		Diagnosis of Pathology					Total
		Cancer	Gastritis	Duodenit	Plasia	No	
Diagnosis of Upper GIS Endoscopy	Cancer	7	5	0	6	0	18
	Gastritis	1	190	17	16	26	250
	Duodenit	0	16	26	5	2	49
	Ulcer	0	8	1	2	3	14
	Polyp	1	13	1	7	0	22
	Normal	0	1	0	0	14	15
Total		9	233	45	36	45	368

*Note: (n=368). Chi-Square test was used. ***p<0.001).*

411 of 570 patients had undergone lower GIS endoscopy. According to the endoscopy reports, 25 (6.1%) were diagnosed with cancer and 17 (4.1%) of the patients diagnosed with biopsy were diagnosed with a cancer diagnosis (Table 3).

In endoscopy diagnoses of 570 patients whose endoscopies were completed with malignancy prediagnosis, 43 (7.6%) were diagnosed with a cancer diagnosis.

It was determined that only upper GIS endoscopy was performed for 159 of endoscopically completed patients. And only 202 patients underwent lower GIS endoscopy. 209 patients were found to have completed upper GIS endoscopy together with lower GIS endoscopy.

When endoscopy reports of patients with upper GIS endoscopy and lower GIS endoscopy were taken into consideration, it was determined that there was not the patient who was diagnosed with cancer at the same time on both endoscopes.

The youngest patient who received a cancer diagnosis in the upper GIS endoscopy report was found to be pathologically incapable of a cancer diagnosis when she was 36 years old. The pathology department found that the youngest patient diagnosed with cancer was 48 years old. The lower GIS endoscopy was completed and the youngest patient who had an endoscopically diagnosed cancer was found to be 36 years old. The youngest patient in the Department of Pathology was diagnosed with cancer at the age of 49.

Endoscopy reports found that 6 (14%) of the 43 patients who were diagnosed with cancer were under 50 years of age. Twenty-two patients (7.7%) of the 26 patients evaluated as pathologic cancer was found to be under 50 years of age (Table 4).

Also besides, 31 (74.4%) of the 43 patients who were diagnosed with cancer were male and 12 (25.6%) were female. Twenty (76.9%) of the 26 patients with pathologically diagnosed cancer were male and 6 (23.1%) of them were female.

Table 2. Plasia Cells in Pathology Reports of Upper GIS Endoscopy Patients-Tekirdag, Turkey, 2014-2016.

		Pathology Plasia Cells	
		Metaplasia	**Dysplasia**
Upper GIS Endoscopy Reports	Cancer	3	3
	Polyp	7	0
	Ulcer	2	0
	Gastritis	16	0
	Duodenit	5	0

Note: (n=36).

Table 3. Comparison of Lower GIS Endoscopy Diagnosis and Pathology Tumor Cells-Tekirdag, Turkey, 2014-2016.

		Diagnosis of Lower GIS Endoscopy					Total
		Cancer	**Polyp**	**IBH**	**IBS**	**Normal**	
Diagnosis of Pathology	Cancer	17	0	0	0	0	17
	Neoplastic Polyp	5	29	0	0	0	64
	Non-Neoplastic Polyp	1	59	0	0	1	31
	IBH	1	0	1	0	0	2
	IBS	1	2	6	8	5	22
	No	0	2	1	0	272	275
Total		25	92	8	8	278	411

*Note: (n=411). Chi-Square test was used. ***p<0.001*

There was a statistically significant correlation between gender and upper GIS endoscopy ($p<0.05$). 13 (72.2%) of the male patients and 5 (27.8%) of the female patients were diagnosed with cancer in the upper gastrointestinal endoscopy reports. When the pathology reports of these patients were examined, it was observed that 8 (88.9%) of the males and 1 (11.1%) of the females were diagnosed with cancer.

There was a statistically significant relationship between the diagnosis of lower GIS endoscopy and gender ($p <0.05$). In the lower GIS endoscopy reports, 18 (72%) of males, and 5 (28%) of females were diagnosed with cancer. A statistically significant relationship was found between pathology diagnoses and gender ($p <0.05$). When pathology diagnoses were analyzed, 12 (70.6%) of the males and 5 (29.4%) of the females were diagnosed with cancer.

Discussion

In cancerous tissue, surgery and treatment are more difficult than early diagnosis. Although cancer has surgical or oncologic solutions, there is currently no known treatment for advanced cancer types. Therefore, endoscopy appointments of patients who have cancer pre-diagnosis are given as soon as possible. While normal appointments are given in the planned order, the appointment of patients with cancer pre-diagnosis is given within one week at the latest.

In Turkey, secretariat or nurse evaluate all appointments according to urgency. For this reason, the person evaluating the appointment must know the criteria for the early detection of cancer. No doubt, the best endoscopy and pathology results show that the appointment staff has chosen these criteria correctly.

In the university, 5077 endoscopy procedures were performed between January 2014 and December 2016. Endoscopies were completed with 570 (11.3%) patients who were diagnosed with cancer as soon as possible. Of the 368 patients who had undergone upper gastrointestinal endoscopy, 18 were diagnosed with cancer, 7 of them had cancer in pathology.

In similar studies, upper GIS endoscopy screening 449 patients and 9 (3.6%) cancer diagnosis, 5551 in the endoscopy scan with the patient 129 (2.3%) has been determined a diagnosis of patients with cancer (10,11). We think that the rates of cancer in these studies are lower than our study, and that other studies are normal screening and that our work is caused by the exclusion of patients outside cancer expectant. In another upper gastrointestinal endoscopy scan, 4763 patients were diagnosed with 508 (10.6%) indole cancer diagnoses (12). We think that the rate of cancer in this study is higher than ours because of the frequent consumption of smoked foods to the east of our country.

In our study, 25 of the 411 patients completed the lower GIS endoscopy were diagnosed as cancer endoscopically, whereas the pathology department found that 17 of these patients had a cancer diagnosis. Similar results were found in the lower gastrointestinal endoscopy studies performed in Turkey (11,13). In a study that was in agreement with our criteria for the

Table 4. Distribution of Patients Receiving Cancer Diagnosis in Endoscopy and Pathology Reports-Tekirdag, Turkey, 2014-2016.

	Patients under the age of 50	**Patients over 50 years old**	**Total**
Diagnosis of Upper GIS Endoscopy	3	15	18
Diagnosis of Upper GIS Endoscopy Pathology	1	8	9
Diagnosis of Lower GIS Endoscopy	3	22	25
Diagnosis of Lower GIS Endoscopy Pathology	1	16	17

study, the lower gastrointestinal endoscopy was 1% with a cancer result and the polyp ratio was 11.4% (14). While the criteria selected for endoscopy are the same, we think that the reason for the higher incidence of lower GIS cancer rates in our study may be due to dietary habits between western and eastern Turkey. We think that the high cancer rate in the lower GIS may also contribute to the consumption of frozen foods, which is also a consequence of the industrialization that develops in the west of our country.

Our country is well-maintained screening for early diagnosis of colon cancer as well as in the world. In this screening program, it is reported that colon screening after age 50 is a must for everyone. In a retrospective study of lower GIS cancers, 90% of cancer cases were reported to be over 50 years of age. The results of our study are similar to this study (15).

In the case of anemic iron deficiency anemia that has not been clinically proven in the American and British guidelines, both men and women recommend the coexistence of upper GIS endoscopy and lower GIS endoscopy. Iron deficiency should be clinically excluded except for the use of nonsteroidal anti-inflammatory drugs, menstruation in women, celiac disease, inadequate iron intake by diet, malabsorption causes are cancer criterion.

Cancer rates in women with upper GIS endoscopy were found to be higher than those in male patients. At the same time, it was determined that female patients with lower GIS endoscopy had more cancer rates than male patients. Iron deficiency anemia can occur in women due to menstruation and blood loss during pregnancy (16). We think that this difference between males and females may be due to anemia of iron deficiency, which is considered as a criterion for malignancy pre-diagnosis.

Conclusion

When endoscopy reports of patients with upper GIS endoscopy and lower GIS endoscopy were completed, it is seen that 7.6% of the patients were diagnosed with cancer. Clinical diagnosis is cancer gis upper endoscopy and lowers gastrointestinal expected high result of cancer rates in the endoscopy results, the outbreak at very low levels, and even the most important reason to make an appointment while triaging better the outbreak close to normal gastrointestinal screening results in Turkey.

Planning endoscopy appointments is a complicated process. The share of making mistakes is high when you are in the hands of inexperienced staff. This is the result that supports our thought. Personnel who give appointments for endoscopes, which is a complicated appointment system, should be educated on this issue or give nurses who have experience and knowledge on endoscopy appointments.

It is known that most of the endoscopic appointments in our country are made by secretaries. However, situations in which secretaries are inadequately informed, or where frequent tasks are replaced may result in their appointment system, such as endoscopy, not being able to learn a unit with a complex structure and giving incorrect appointments. For this reason, since secretaries do not have enough information, it is possible to make urgent appointments and appoint appointments that are not urgent. In this case, as high as 92%, they may have caused a faulty cancer pre-diagnosis appointment.

Therefore, the secretary of the endoscopy unit can be trained by the nurses working at the endoscopy, or the specialist training plans for the endoscopy department when the hospital quality units and the secretaries are making the training plans and the secretaries can be professionalized in their appointment task if not required. Thus, it may be possible to say that the secretaries' mistakes in appointment trials can be reduced to the minimum. The elimination of these possible faults in the triage is also very important in terms of patient safety.

Such appointments, which are assessed urgently and given within one week, add an extra patient besides the one planned for each treatment day. Every extra operation increases the workload for the patient and is known to increase the risk of medical error when the workload is too great. Appointments to be made during normal periods are also expected to reduce the risk of medical errors. Patients who are in an emergency or need to be given an early appointment are required to make an appointment naturally. However, the appointments that are noted here are cases

that can be made an emergency appointment if not urgent. In addition to patient safety, the absence of more patients on the plan may also allow more time for the illness.

Early appointments are given to the patient who is cancer expectant but it is difficult to determine the patient appointment time because of the appointment day as previously planned. The patient is asked to wait and wait for the most appropriate time. This can cause negativity in terms of patient satisfaction. Waiting times for patients who have an early appointment due to a cancer pre-diagnosis may sometimes be prolonged due to the prior appointment of the appointment day. If the situation of these patients is evaluated more effectively and elective appointments are given, the patient knows the operation time and can plan within those hours. This is thought to increase patient satisfaction.

Even if the secretaries receive planned training, the lack of adequate knowledge of medical issues can cause some appointments to fail. Preliminary nurses or doctoral counselors who do not know or are unsure of giving endoscopy appointments will reduce their chance of error so that they can be removed.

When given in an appointment scheduled, the duration of the endoscopy operations during the day can be long and the staff can be prevented from staying in unnecessary occupation. The unnecessary occupation of the staff will reduce both the cost of health and the extra workload.

Considering the endoscopies performed in our study, it was observed that patients with upper gastrointestinal endoscopy and lower GIS endoscopy did not have more than one cancer diagnosis in two endoscopes.

157 patients under the age of 50 were undergone upper and lower GIS endoscopy and endoscopy reports found that 43 of these patients were diagnosed with cancer. In the pathology reports, only 2 (1.3%) were diagnosed with a cancer diagnosis. If cancer screening programs begin to scan for cancer after age 50, it may be more appropriate to give early appointments as soon as possible, although not too late, rather than urgently assessing endoscopy appointments for patients under 50 years of age.

Taking all of these into consideration, it is important that the appointments are made as planned and sensitive to the priority as possible, and that the priority services of the patients are to receive the adequate health services, to be satisfied with the received health services, to protect the patient rights and confidentiality, to prevent time-wasting, they can be provided not to be exposed. Also besides, it can also help reduce the unnecessary workload and allocate more time to the patients in terms of the service personnel. This, in turn, is expected to have a positive effect on patient satisfaction, patient quality of life.

Conflicts of Interest

The authors declare that there is no conflict of interest in this manuscript.

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