

MISDIAGNOSIS OF COLORECTAL CANCER IN ELDERLY PATIENTS – A REAL CAUSE OF MALPRACTICE LAWSUITS

Mugurel-George Paunescu¹, Olimpia Ghidrai²

REZUMAT

Cancerul colorectal are o mare prevalență în cadrul proceselor de malpraxis în Statele Unite. În plus, despăgubirile reprezintă sume importante de bani. În România nu există încă date oficiale legate de acest aspect, deși un raport este așteptat în curând (2008-2009). Scopul acestei revizuirii a literaturii de specialitate este de a prezenta abordarea medicală corespunzătoare, la pacienții cu risc mediu de a dezvolta cancer colorectal, în special la cei vârstnici, pentru că afecțiunea este în mod caracteristic legată de vârstă. Pentru a pătrunde mai adânc în dedesubturile acestei probleme am arătat și posibilele greșeli medicale responsabile de procesele de malpraxis. Aspectele juridice legate de acest subiect nu reprezintă scopul acestei lucrări.

Cuvinte cheie: cancer colorectal, diagnostic greșit, vârstnic, malpraxis, screening

ABSTRACT

Colorectal cancer has a greater prevalence of malpractice lawsuits in United States. In addition, the indemnification represents highest amounts of money. In Romania there are still no official data regarding this aspect, although an official report is expected soon (2008-2009). The purpose of this review is the emphasis of the recommended medical approach, in average risk patients, for colorectal cancer, especially in elderly ones, because cancer is a condition particularly related with age. In order to articulate the insights of the process we also underlined the possible medical pitfalls regarding this circumstance. The legal aspects, related with this topic are beyond the aim of this paper.

Key words: colorectal cancer, misdiagnosis, elderly, malpractice, age, screening

INTRODUCTION

Colorectal cancer (CRC) and other bowel disorders are between the first diseases with malpractice lawsuits in United States. Even more, these lawsuits are ending with damages of highest amount of money after judiciary decisions.¹ In Romania, there are still no official statistical data regarding the prevalence of this subject, but an official report is expected in 2008-2009. In 2006, the Romanian Parliament has emitted a law (No. 95/2006), which specifies that all medical personnel have a civil or penal responsibility, in accordance with the case for which is judged. This fact has contributed to the specialization of the lawyers firms in this field.

Age is considered an important risk factor for cancer, because of the high incidence among old people. Seventy-one percent of cancer deaths are happening at patients who are 65 years or older.² Among these cancer deaths, the second place in United States, and the third place in Japan is attributed to CRC.^{3,4} In United Kingdom, 83% of new cases with CRC are detected in patients who are older than 60 years.⁵⁻⁷ This statistical data, underlines the fact that CRC is strongly related with age.⁴

The incidence of CRC is different in Europe, from country to country. A statistics from 2006 has shown that every year are 307,432 new cases of CRC in European Union.⁸ Keighley suggests that CRC is the most common malignancy in Europe overpassing the total cases of lung and breast cancer.⁹ Other statistical data indicate that CRC is still in the third place, but with increasing incidence, especially in developing countries.¹⁰ A high incidence is documented in the following countries Norway, Denmark, Netherlands, Sweden, Luxemburg, and Germany.⁹

Romania has a low incidence of colorectal cancer, with approximately 5.900 new cases/year and 3.400 deaths/year.⁹ In Timis County there were 1938 new cases with CRC from 1998 until 2007. The statistical data was obtained from the archive of the Clinic of Oncology Timisoara.

¹ Ana Aslan Geriatric and Gerontologic Institute, Bucuresti, ² Municipal Hospital, 5th Medical Clinic, Cluj Napoca

Correspondence to:
Mugurel-George Paunescu, Ana Aslan Geriatric and Gerontologic Institute, 9 Caldarusani Str., Bucuresti, Tel. +40-723-483636
E-mail: mugurelpaunescu@yahoo.com

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CHARACTERISTICS OF COLORECTAL CANCER IN ELDERLY

A typical elderly cancer patient presents with the following features: 65 years or older, which takes various medications at the same time, and has other medical problems.

A characteristic feature of CRC at elderly is the typical localization of the tumor in the proximal part of the colon (up to the splenic flexures), founded in approximately one-half of patients.¹¹⁻¹³ This feature is more frequently encountered in elderly females as compared with elderly men.¹⁴

In addition, the behavior of malignancies is considered to be more “silent” in elderly patients, because of reasons such as: the good differentiation of the tumor with a lower grade of malignancy and slower growth; and a scant potential for metastasis.¹⁵ Despite this „silent” behavior, this group of patients has an advanced stage of cancer at the first consultation, because of the late presentation to the doctor, usually due to some shameful symptoms.^{11,16}

It is important to remind that in early stages, CRC usually has no symptoms and thus it can be under-diagnosed. When symptoms occur, it is usually too late for a curable treatment. The lack of medical culture, symptoms and diagnostic tests that are considered embarrassing by many, are all leading to delayed diagnosis. This is the reason why it is crucial to find the cancer in early stages.

It is generally believed that life style and dietary habits (*the occidental diet type*) during youth and middle age represent the main predisposing factors for older age malignancies, especially related with colon and rectum.^{17,18} Numerous factors determine the carcinogenesis process. This process increases with age.

Existing information suggests the role of the nuclear and mitochondrial DNA damage, induced by endogenous (oxygen free radicals) and exogenous agents (smoking, ultraviolet radiations, pollution).¹⁹

Other factors implicated in this process are: the alteration in metabolism and in the neuroendocrine systems; alterations in DNA repair, the presence of hypermethylation of genes, apoptosis, immunosenescence, telomere shortening and telomere dysfunctions.²⁰ An interesting observation regarding the association of carcinogenesis with age has revealed that the presence of apoptosis in the malignant tissue leads to a slower tumor growth,²¹ which explains, in part, the “silent” behavior of the colorectal cancer in the elderly.

MISDIAGNOSIS OF COLORECTAL CANCER

Medical mistakes associated with CRC represent the subject of many expensive malpractice lawsuits each year. In 2000, Davenport listed the top five conditions at risk for malpractice lawsuits.²² The order was as follows: myocardial infarction, breast cancer, appendicitis, lung cancer and CRC. The subject of these lawsuits was misdiagnosis (over-diagnosis/under-diagnosis) or mismanaged diagnostic tests with the result of postponed accurate and quick treatment.

After reviewing articles related with the studied topic, the first impression was dominated by the feeling that, in Romania, a misdiagnosis or a medical mistake is a taboo issue. The lack of information and the absence of some relevant studies contributed to this personal impact.

Even the fact that the international medical literature offers few prospective studies related to medical errors, important information about contributory and also preventive factors were reported.²³

The causes of the most frequent mistakes in CRC diagnosis are directly related with the following elements: *physician* (general practitioner, specialist), *patient* and *diagnostic tests* (laboratory and histopathology). (Fig. 1) In order to provide a better comprehensive perception of the process, the origin of every element in part will be exposed briefly. Firstly, the origin of the medical errors is primordially related with the level of knowledge such as a wrong diagnosis, or more often a delayed diagnosis. (Table 1) Also, a presumptuous behavior from the doctor’s part, when he/she does not ask for an interdisciplinary advice or intervention, could lead to a misdiagnosis.

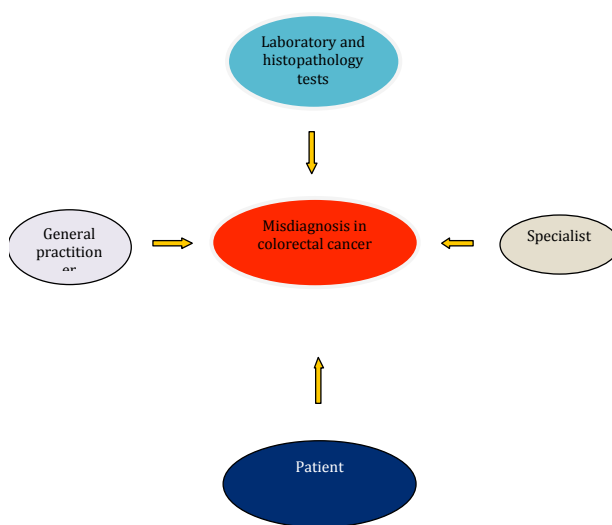


Figure 1. Contributory elements in colorectal cancer misdiagnosis.

Another important argument for lawsuits is the wrong laboratory or histopathology tests results. Human errors and medical equipment errors are rare, but always possible. For example, a wrong assessment when the doctor analyses a microscope slide, if he/she does not have a high experience or if the sample is done improperly, contaminated or even more mixed up. The result will be either a false negative or false positive diagnosis. In such cases, it is better to recall the limitations of every test in part to avoid these errors. In a study, analyzing 6,171 slides from patients diagnosed with cancer, only 1.4% of all performed biopsies had shown misdiagnosis.²⁴

Table 1. Common errors in diagnosing colorectal cancer.

Cause of errors	Possible errors
Doctor (general practitioner or specialist)	<ul style="list-style-type: none"> - Level of knowledge (wrong diagnosis, delayed diagnosis, wrong subtype of disease); - Interdisciplinary advice not asked for; - Not informing about the screening methods; - Lack of time.
Patient	<ul style="list-style-type: none"> - Self diagnosis; - Not reporting symptoms (if the doctor does not ask the patient); - Failure to accomplish ordered tests (if the patient does not want to pay extra or due to complacency, indolence, embarrassment, or inadvertence); - Lack of medical culture.
Diagnostic tests (laboratory/histopathology tests)	<ul style="list-style-type: none"> - Human errors; - Medical equipment errors.

Although the guilt is usually attributed to the doctor in malpractice lawsuits, the patient can also contribute to misdiagnosis. Sometimes, he/she does not ask for a medical advice, because the *self diagnosis* is common nowadays.

In other cases, the patient does not report symptoms, if the doctor does not ask for them. This fact is happening usually because of some embarrassing symptoms.

Another patient-related guilt for misdiagnosis is attributed to the fact that some diagnostic tests, ordered by the doctor are not accomplished, due to complacency, indolence, embarrassment, or inadvertence. We have to recognize that in Romania, the cost of some investigations is not reimbursed by the National Health Insurance House and thus plays an important role as the patient refuses to pay an extra diagnostic test.

To summarize, we enumerate every possible cause who can lead to a lawsuit because of the medical pitfalls:

- Error in symptom recognition indicating a CRC;
- Errors in ordering the correct laboratory and histopathology tests, to identify the presence of CRC;
- Errors regarding the absence of an intense encouraging attitude from the doctor side, to perform a colonoscopy or sigmoidoscopy;
- Errors in correctly interpreting these laboratory or histopathology tests.
- Errors regarding the patients with abnormal laboratory tests results who are not reevaluated.

In order to avoid all these medical mistakes, especially in elderly patients, the doctor has to take into account all the alternative diagnosis and to recommend and to encourage the CRC screening tests, for early cancer detection:²⁵⁻²⁷ (Table 2)

- Fecal occult blood test (FOBT) every year or
- Fecal immunochemical test (FIT) every year or
- Stool DNA test (sDNA) at uncertain repeating period, or
- Flexible sigmoidoscopy (FSIG) every 5 year, or
- Double-contrast barium enema (DCBE), every 5 years or
- Computed tomographic colonography (CTC) every 5 year or
- Colonoscopy, every 10 years.

The benefit of all these tests was worldwide accepted, making possible an increased used of them since 2000.^{28,29} Every assay in part has intrinsic features associated with prevention potential, costs, accuracy, and also potential injury. The patient has to be informed about all these intrinsic characteristics. Furthermore, the medical approach must be directly dependent on these screening tests, because it represents a possible way to avoid a malpractice lawsuit.

Every year, starting with 1980, the American Cancer Society (ACS) with US Multi-Society Task Force on Colorectal Cancer (USMSTF) and the American College of Radiology publishes the updated guidelines for screening in average-risk adults.

There are two kinds of screening tests. Some are for the detection of CRC (g-FOBT, FIT, sDNA) and the others for both CRC and adenomatous polyps (FSIG, colonoscopy, DCBE, CTC).

The *fecal occult blood test (FOBT)*, also called guaiac-based stool test (g-FOBT) is one of the most used stool blood test for CRC screening. It detects blood in the stool through the pseudoperoxidase activity of heme or hemoglobin. Individuals should be informed to avoid nonsteroidal anti-inflammatory drugs, red meat, vitamin C and some raw vegetables, prior testing.

g-FOBT does not need a bowel preparation, thus it is more accepted by general population. Colonoscopy should be performed if the test is positive.³⁰

Table 2. Differential diagnosis in colorectal cancer

Digestive disorders or directly related with the digestive tract	Non – digestive disorders or indirectly related with the digestive tract
Irritable bowel syndrome	Diabetic gastroparesis
Benign tumors (polyps, lipoma)	Diabetic diarrhea
Hemorrhoids	Ovarian cancer
Celiac disease	Endometriosis
Crohn's disease	Other chronic diseases such as lupus erythematosus, chronic fatigue syndrome, multiple sclerosis, hypothyroidism etc.
Ulcerative colitis	
Diverticulosis and diverticulitis	
Hemorrhoids	
Ischemic colitis	
Intestinal tuberculosis	
Lymphoma	
Volvulus	
Kaposi's sarcoma	
Giardia, amebiasis	
Fecaloma	

Immunochemical-based stool test (FIT) detects human globin. It does not need a bowel preparation or a restricted diet. Like in g-FOBT, if the test is positive, colonoscopy must be performed.

Another test with high sensitivity is the *stool DNA test*. This assay detects the presence of carcinogenesis by DNA alterations. The abnormal cells from the CRC are released into the large bowel lumen and will be encountered in the feces. Other positive characteristic of this test consist in the fact that malignant cells DNA can be differentiated from bacterial DNA because of the multitarget DNA feature of the assay.³¹ Compared with gFOBT or FIT, the test requires an adequate sample of stool, minimum 30g to obtain a veridical result. The cost of this procedure is still higher, even in United States, but the sensitivity and specificity are higher, from 52% to 91%, respectively from 93% to 97%.^{32,33} Like the others two (gFOBT or FIT), if the test is positive, colonoscopy must be performed.

Flexible sigmoidoscopy (FSIG) is an endoscopic procedure with a sensitivity ranging from 60% to 70% for advanced adenoma and colon cancer.^{34,35} The exam has some disadvantages. The first is referring to the fact that only the rectum, sigmoid and descending

colon is analyzed.

As an invasive exam, FSIG has a fearful complication, the colonic perforation. In addition, the procedure could be perceived painful by the patient because sedation is usually not required. Every doctor must explain to his patients that a positive result of the FSID must be followed by colonoscopy.

Colonoscopy still remains the “gold standard” for CRC screening. It detects both adenomatous polyps and CRC by directly inspecting the entire bowel mucosa. Biopsies and polypectomy can be done through colonoscopy. It needs a very good bowel preparation and in most cases sedation, for minimizing the discomfort.

Colonoscopy is performed when the other screening tests are positive. Common risks involving colonoscopy are hemorrhage and perforation, especially after polypectomy.

The *double-contrast barium enema (DCBE)* evaluates the whole colon and needs a complete bowel preparation prior to the procedure. It detects polyps and cancer, but the disadvantage is that the doctor cannot perform a biopsy or polypectomy. In cases with polyps larger than 6 mm, the assay must be followed by colonoscopy, which requires another bowel preparation. The test should be performed in the patients where colonoscopy has failed or is contraindicated. The advantage of this method consists also in the fact that complications (ex perforation) are extremely rare.³⁶

The *computed tomographic colonography (CTC)*, also called virtual colonoscopy has a high sensitivity (from 85% to 93%) and specificity (97%) for large polyps (≥ 10 mm). For invasive CRC the sensitivity is 96%.^{37,38} The test needs complete bowel preparation for a high accuracy of the results. However, the biopsy and polypectomy cannot be performed and the procedure must be followed by colonoscopy, preferable in the same day, if polyps larger 6 mm are identified.

CONCLUSIONS

CRC represents one of the most frequent forms of cancer and the prevalence increases with age. In this context, every physician (general practitioner and specialist) has to be more vigilant with elderly patients and to promote and urge the CRC screening tests like fecal occult blood test, fecal immunochemical test, stool DNA test, flexible sigmoidoscopy, double-barium enema, computed tomographic colonography, or colonoscopy. The goal is to detect CRC in early stages and adenomatous polyps, especially in the average-risk adults.

Misdiagnosis in CRC represents a real cause of malpractice lawsuits in United States. However, in Romania the subject is still considered taboo and the authorized information are not available for the moment.

Further studies are needed in order to establish, to what extent every contributory element in the CRC misdiagnosis is present in the Romanian medical system.

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