

Non-epithelial malignant tumors of GIT, our centre experience (Middle East).

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Abstract: Background and Aims: In countries like Saudi Arabia where multiple nationalities are present in the same place, the rare and uncommon diseases are to be considered. In this study we recorded the real incidence of different types of GIT tumors among 100 cases. **Patients and Methods:** From January 2014- January 2016, a retrospective study included one hundred patients suffering from GIT malignant tumors admitted to Hospital of Zagazig University, Cairo University and Saudi-German Hospital, Jeddah. We exclude esophagus and anal canal tumors. **Results:** Among 100 cases of different types and different sites of GIT malignant tumors, 42 cases (42%) were colorectal, 14 cases (14%) were gastric, 12 cases (12%) were pancreatic, 8 cases (8%) were hepato-biliary. Their ages were averaged 52 ± 13 years, ranged from 17-88 years old. The cases included both males and females in a ration of 1.7-1.0. The average duration of the presenting symptoms was 4 months. In nearly 87% of operated cases, the tumors were resected. The histopathology in 82% of operated cases showed a predominance of adenocarcinomas. **Conclusions:** This study underlines the existence, within the GIT malignant tumors, of many different entities with various clinical and pathological forms and prognosis, whose detection is essential for choosing suitable therapeutic approach.

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1. Introduction

Tumors in the digestive system mainly due to the presence of malignancy in the gastrointestinal (GIT) and their accessory glands and/or organs such as hepato-biliary system, pancreas, the stomach, esophagus, small and large intestine, rectum, and anus. The symptoms varied according the site of lesion or the affected organ or the degree of malignancy, which may appear in the form of obstruction (symptoms of difficulty during swallowing, or defecation), beside bleeding from upper or lower GIT and other accompanied illness. For distinguishing the symptoms due to tumors or due to other diseases it is essential to use endoscopy, and then a biopsy is taken. The diagnosis often requires endoscopy followed by biopsy from affected tissues. The accurate line of treatment related with many factors such as the site, type and degree of malignancy, metastasis of malignant cells to other organs and tissues or localized. The age of the patient in addition to the mentioned factors determine the prognosis and the line of treatment.

2. Patients and Methods

From January 2014 to January 2016, the cases of GIT malignant tumors with exclusion of esophageal and anal tumors, were collected in Zagazig university hospitals, Cairo university hospitals, and Saudi-German hospital, Jeddah. According to the study chart, data concerning clinical, biological and histological features, as well as the treatment applied and the clinical outcome, had to be recorded in a retrospective manner. Therapeutic guidelines were given and followed for each subtype and was registered. Furthermore, the follow-up data were collected.

Informed consent was obtained from all patients and the study was approved by local Ethical Committee.

Medical history and symptoms were recorded. Initial clinical symptoms were divided into five principal categories: abdominal pain, bloody stool, diarrhea, abdominal mass, and obstruction.

The infectious complications of these patients were assessed during their hospital stay. Culture and sensitivities were done to complicated patients and

isolated bacteria was identified by culture morphology, Gram staining. Biochemical reactions, MICROBACT 24E (Oxoid) and Staphytest Plus (Oxoid).

Statistical analysis was performed with the SPSS software. The Student's t test was applied to identify significant differences between two or more groups of data.

3. Results

Over 24 months, 100 cases of gastrointestinal malignancies had surgeries in Zagazig and Cairo university hospitals and Saudi-German hospital, Jeddah. Their ages were averaged 52 ± 13 years, ranged from 25- 88 years old. The ratio between male and females in the present study was 1.7: 1.0. The period of the presenting symptoms was around 4 months.

Of all cases 82% of them were adenocarcinoma. From those, 58% were of colorectal carcinoma, 8% were of pancreatico-biliary carcinoma, and 16% were gastric carcinoma. As shown in table (1), the demographic distribution of all patients is illustrated in table 1. Depending on the histopathological examination, the results revealed that there are five types of tumors were recorded: (1) adenocarcinoma, 82 cases (82%), (2) gastrointestinal stromal tumor (GIST), 9 cases (9%), (3) lymphomas, 7 cases (7%), (4) squamous cell carcinoma, 1 case, (1%), and (5) metastatic, 1 case (1%). In nearly 83% of operated cases, the tumors were resected. Of these, (79%) were progressive cases, while about 21% were cancers in the early stages. The histopathological examination pointed to the elevation in the cases suffering from adenocarcinoma (82/100 cases) An overall postoperative in-hospital mortality rate was 0%. Follow up of 3-12 months postoperatively in most cases. Few cases were followed longer.

Table (1): Demographic data of all the patients

Tumor type	NO	M/F	Age median, (range)
Adenocarcinoma	82	53/29	57(21-88)
Gastrointestinal stromal tumors	9	6/3	66(49-74)
Lymphoma	7	5/2	31(25-41)
Squamous cell carcinoma	1	1/0	34
Secondaries	1	0/1	52

Regarding to the symptoms in the present study, the more predominant symptoms was abdominal pain which represent 57% (range 33-60%) of the patients participating in the study, the abdominal pain was apparent in cases of squamous cell carcinoma. During the routine procedures for diagnosis specially in cases

of dyspepsia by using endoscopy, the cases of cancers were discovered accidentally. Other symptoms was recorded in this study, 18% Initial bleeding, (17%) complain from diarrhea which were fairly common in case of lymphoma. The diagnosis by using the endoscope was the base in elective cases, however, some are diagnosed during surgery (32%) performed for initial complication; (obstruction or perforation).

During hospital stay period the patients were assessed for nosocomial infections. hospital stay period was from 10 days to one month. 80 patient (90%) complicated with nosocomial infections. 10 patient (10%) not complicated with nosocomial infections.

Table 2: Types of nosocomial infections

Type of nosocomial infections	Complicated patients No (90%)
UTI	40(32%)
Bacteremia	30(27%)
Candideamia	10(9%)
Surgical site infection	5(4.5%)
Pneumonia	5(4.5%)

Complicated patients develop these types of nosocomial infections (Table 2). 40 patients (32%) complicated with UTI, 30(24%) complicated with bacteremia, 5 patients (4%) complicated with surgical site infection, 5 patients (4%) develop pneumonia.

Bacteria isolated from complicated patients (Table 3). *Acinetobacter baumani* isolated from 30 patients (24%), *E. coli* isolated from 25 patients (20%), *Stenotrophomonas maltophilia* isolated from 15 patients (12%), *Staphylococcus aureus* isolated from 5 patients (4%), Methicillin Sensitive *Staphylococcus aureus* from 2 patients (1.6%), Methicillin Resistant *Staphylococcus aureus* from 3 patients (2.4%). *Candida albicans* isolated from 6 patients (5.4%), *Candida not albicans* isolated from 4 patients (3.6%).

Table 3): Bacteria isolated from complicated patients.

Bacteria isolated	No of complicated patients (90 %)
<i>Acinetobacterbaumani</i>	30 (24%)
<i>Stenotrophomonasmaltophilia</i>	15 (12%)
<i>Staphylococcusepidermidis</i>	5 (4%)
<i>Methicillin Sensitive Staphylococcus aureus</i>	2 (1.6%)
<i>Methicillin Resistant Staphylococcus aureus (MRSA).</i>	3 (2.4%).
<i>Candida albicans</i>	6(5.4%)
<i>Candida not albicans</i>	4(3.6%).

Statistical analysis:

Table (4) summarizes the clinical and morphological features of each histological type of bowel cancer. Age showed a normal distribution. Patients with lymphoma, squamous cell carcinoma, and metastatic tumors were significantly younger than those with adenocarcinoma (student's t test, $P = 0.019$). The location of the tumor in GIT was not related to the histological type ($P = 0.93$). Nonetheless, the histological type was related to macroscopic appearance and size; lymphoma were more frequently flat and small, and were more

frequently limited to the mucosa than were the other types ($P = 0.008$). Deep infiltration through the colonic wall to the subserosal fat tissue was seen in significantly more with squamous cell tumor ($P = 0.003$). Deep infiltration through the gastric wall to the subserosal fat tissue was seen more significantly with malignant gastrointestinal stromal tumors (GIST), ($P = 0.003$). Focal narrowing of the transverse colon with multiple polyp-like lesions, which were biopsied, upon pathological evaluation of the tissue and immunohistochemical staining, metastatic lobular breast carcinoma was diagnosed, ($P = 0.003$).

Table (4): statistical analysis.

variable	Adenocarcinoma	GIST	Lymphoma	SCC	Metastatic
No of cases	82($p=0.0004$)	9($p=0.002$)	7($p=0.003$)	1($p=0.004$)	1($p=0.004$)
age	Ns	Ns	$P=0.019$	$P=0.019$	$P=0.019$
Macroscopic type	Ns	$P=0.003$	$P=0.008$	$P=0.03$	$P=0.003$
Size	Ns	Ns	Ns	ns	Ns
Sex	Ns	Ns	Ns	ns	Ns
stage	Ns	Ns	Ns	ns	Ns
Type of resection	Ns	Ns	Ns	ns	Ns
Surgical margin	Ns	Ns	Ns	ns	Ns



Figure (1): Malignant GIST (intraoperative)

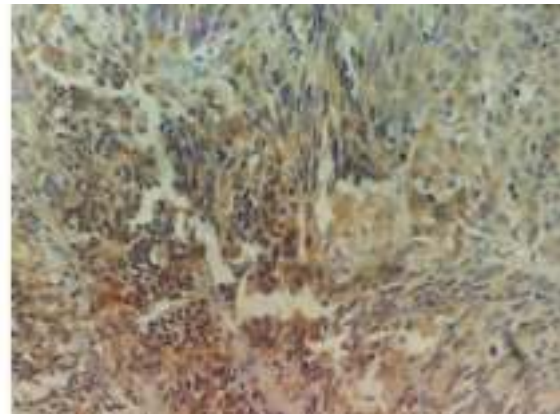


Figure (2) Immunohistochemistry of GIST

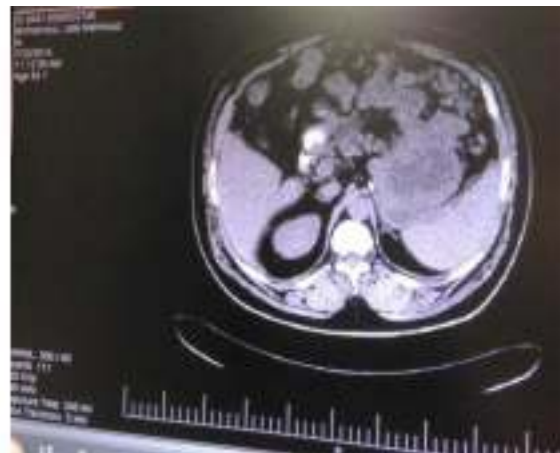


Figure (3) CT of malignant GIST (before treatment)

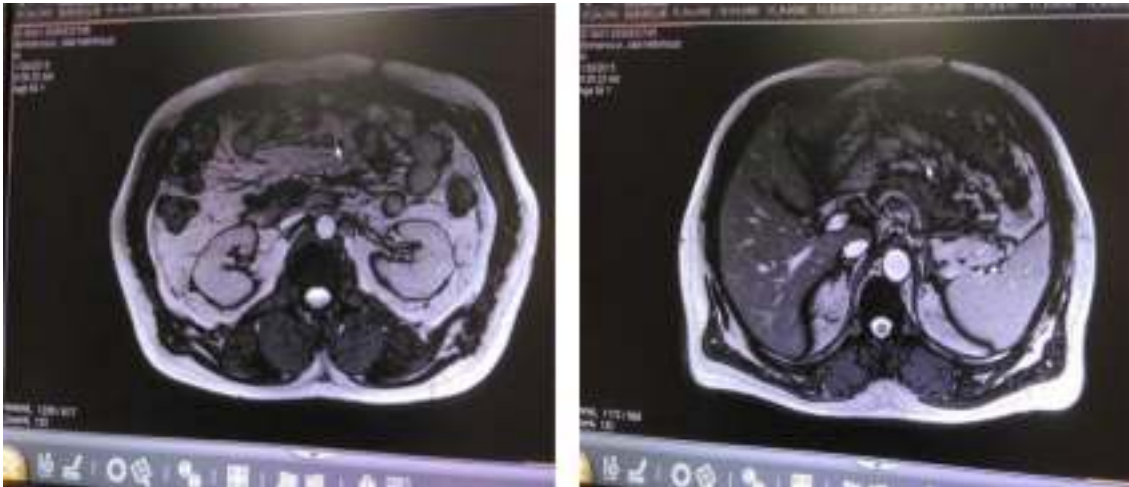


Figure (4) MRI GIST after treatment



Figure (5): CT showed a large heterogeneous mass involving the colon at the transvers colon and multiple lymph nodes, (primary SCC of the colon)



Figure (6): Macroscopic appearance. The resected SCC of the colon was a huge mass of 8.0×12.0 cm. penetrating the stomach

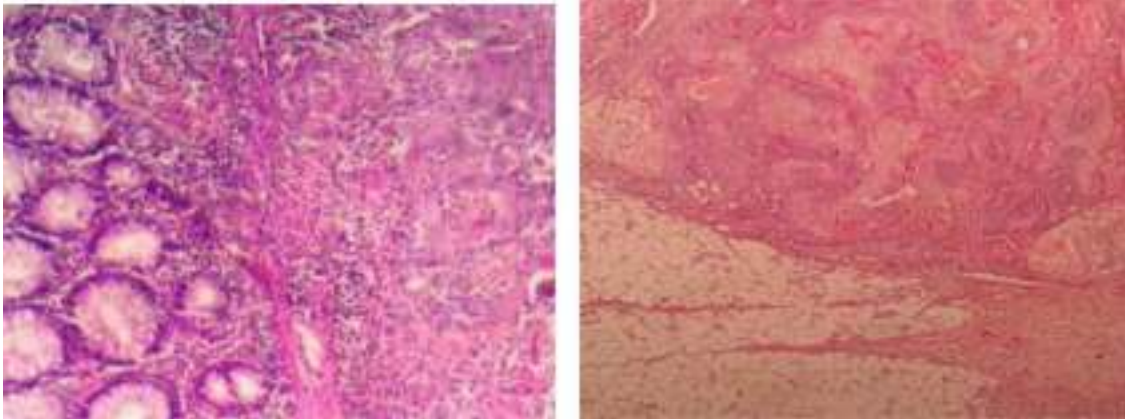


Figure (7): Histopathological examination demonstrating moderately differentiated SCC. Original magnification $\times 40$. HE stain.

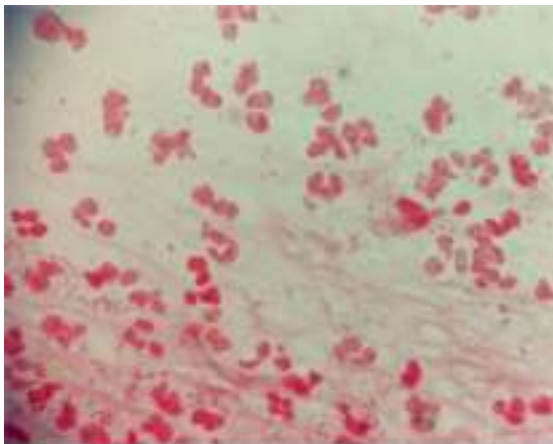


Figure (8) Sputum Gram stain showing *Acinetobacter* bacteria

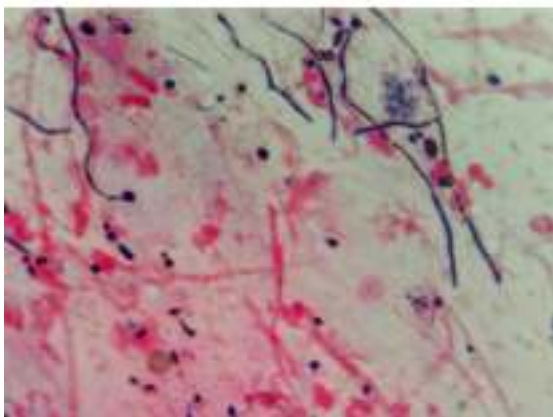


Figure (9): Sputum Gram stain showing budding yeast cells with pseudohyphae.

4. Discussion

In our study we compared the clinico-pathological feature of primary malignant tumors of GIT, which were subjected for surgical treatment, were divided into 5 groups depending on the histopathological examination. The age of patients

which complain from lymphomas, GIST, and SCC was younger than those in the remaining two groups. The more characteristic features of patients with lymphomas, the lesion was small in size, frequently flat in shape, while the patients survive for long time. In addition, it discovered at early stages with a low rate of proliferation. Patients with SCC of the colon has short and aggressive course with the infiltration of the serosa and pericolic fat. Patients with malignant GIST had marked regression of the tumors after chemotherapy. In contrast, there were only minor differences in patients with adenocarcinoma.

In the present study, the more predominant symptoms of the patients were abdominal pain and diarrhea, with progressing of the condition, stools mixed with blood and complain from abdominal mass was recorded. The aggravation of condition depending on the tumor localization, size and stage of proliferation. The diagnosis of most kinds of GIT tumors depending mainly on the endoscopic diagnosis, particularly when the colon was affected. Radiological diagnosis was done to assess operability. Conversely, The diagnosis can be performed during surgical operation, particularly for ulcerative or obstructive cancers which usually done during the surgery.

In this work, 69% of patients suffering from GIT tumors were diagnosed in the early stage (I-II) of the disease, whereas, 31% of patients were diagnosed at late stage, representing a known higher aggressiveness of their tumors. [7, 8].

Bowel tumor occupies the third most common cancer all over the world, which represent 13% of all recently discovered cases. Both males and females were affected by GIT tumors in a ratio of 14% and 11%, respectively. [9, 10].

Some studies indicated that colon cancer represent about 66% of all abdominal cancers, while the cancer of rectum represent about 34% of all abdominal cancers [11].

In Europe, bowel cancers occupy the second among the most predominated cancers in European countries, which reached during 2012 to about 447,000 new cases and represent about 13% of the total cases. The survey which carried out in Europe of patients with GIT cancer, they reported that the highest incidence rates world age-standardized was among men in Slovakia, while it was high in women of Norway, while the incidence rate was low in Albania among men and women. The survey also reported that bowl cancer incidence in United Kingdom represent 20th highest in males in Europe, and 17th highest in females [9]. Globally, the GIT cancer occupy about the third most common cancer in the world, the newly diagnosed cases yearly were more than 1,360,000, discovered during 2012, which represent about 10% of the total cases. Study was carried out in Australia, New Zealand and West Africa by some investigators, they found that the incidence of bowl cancer rates was high in both Australia and New Zealand and was low in Western Africa [10]. Another study for determining the incidence of adenocarcinoma in GIT cancer, they found that more than 90% of bowel cancer cases are adenocarcinoma, which arises mainly from adenomatous polyps (adenomas). In Europe and United States of America, the benign tumors, which arise from normal colonic mucosa, are found in a 1/3 of their populations [12]. Only about 1-10% of polyps can develop cancer forming large masses in the bowel, indicators for development from adenomas to cancer includes large size, villous type and sever dysplasia [13]. In our study we had a significant higher incidence of GIST and lymphoma, in comparison to adenocarcinoma, we had also two rare cases; SCC of the colon and metastatic infiltrating lobular carcinoma of the breast.

Conclusion

The Gastrointestinal tract (GIT) and their accessory organs (liver, pancreas and gall bladder) are accountable for the high incidence of cancers and high rates of mortality among patients than any other body organs or system. The geographic distribution of GIT cancers have a significant differences in the rates of different GIT tumors. Early diagnosis of suspected cases in all age group, can improve the quality of life and improved the survival rate.

References

1. Yang, S; Wu, S; Huang, Y; Shao, Y; Chen, XY; Xian, L; Zheng, J; Wen, Y; Chen, X; Li, H; Yang, C (Dec 12, 2012). "Screening for

- oesophageal cancer." The Cochrane database of systematic reviews (12).
2. Bjelakovic, G; Nikolova, D; Simonetti, RG; Gluud, C (Jul 16, 2008). "Antioxidant supplements for preventing gastrointestinal cancers.". The Cochrane database of systematic reviews (3).
3. O'Connor, A; McNamara, D; O'Moráin, CA (Sep 23, 2013). "Surveillance of gastric intestinal metaplasia for the prevention of gastric cancer". The Cochrane database of systematic reviews(9).
4. Arcidiacono, PG; Calori, G; Carrara, S; McNicol, ED; Testoni, PA (Mar 16, 2011). "Celiac plexus block for pancreatic cancer pain in adults.". The Cochrane database of systematic reviews (3).
5. Yamada T, Alpers DH, et al. (2009). Textbook of gastroenterology (5th ed.). Chichester, West Sussex: Blackwell Pub. pp. 603, 1028.
6. Robbins basic pathology (8th ed. ed.). Philadelphia: Saunders/Elsevier. 2007. ISBN. 978-1-4160-2973-1.
7. T. Kodama, K. Ohshima, K. Nomura, et al. Lymphomatous polyposis of the gastrointestinal tract, including mantle cell lymphoma, follicular lymphoma and mucosa-associated lymphoid tissue lymphoma. *Histopathology*. 2005;47:467-478.
8. A. Salar, N. Juanpere, B. Bellosillo, et al. Gastrointestinal involvement in mantle cell lymphoma: a prospective clinic, endoscopic, and pathologic study. *Am J Surg Pathol*. 2006; 30:1274-1280.
9. Ferlay J, Soerjomataram I, Ervik M, et al. GLOBOCAN 2012 v1.0, Incidence and Mortality Worldwide: IARC Cancer Base No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013.
10. Ferlay J, Steliarova-Foucher E, Lortet-Tieulent J, et al. Cancer incidence and mortality patterns in Europe: Estimates for 40 countries in 2012. *European Journal of Cancer* (2013) 49,1374-1403.
11. Donnelly DW, Gavin AT, Comber H. Cancer in Ireland 1994-2004: A comprehensive report. Belfast: Northern Ireland Cancer Registry/National Cancer Registry Ireland; 2009.
12. Midgley R, Kerr D. Colorectal cancer. *Lancet* 1999;353:391-399.
13. Terry MB, Neugut AI, Bostick RM, et al. Risk factors for advanced colorectal adenomas: A pooled analysis. *Cancer Epidemiol Biomarkers Prev* 2002;11:622-629.