ADENOCARCINOMA AND TUBERCULOSIS OF THE SIGMOID COLON AND FALLOPIAN TUBE – A RARE ASSOCIATION. A CASE REPORT AND REVIEW OF THE LITERATURE

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ADENOCARCINOMA AND TUBERCULOSIS OF THE SIGMOID COLON AND FALLOPIAN TUBE – A RARE ASSOCIATION. A CASE REPORT AND REVIEW OF THE LITERATURE (Abstract) Association of adenocarcinoma and tuberculosis (TB) of the sigmoid colon is a rare clinical condition even in an endemic country as Romania, with challenging diagnosis and treatment. Case report. We present the case of a 57-year-old female patient who was admitted on emergency basis for a diagnosis of obstructive sigmoid adenocarcinoma. The patient was operated on and it an obstructive sigmoid tumor with serosal invasion, adherent (invading) to the body of uterus and left adnexa and urinary bladder serosa, no liver or peritoneal metastases. A sigmoidectomy was performed “en bloc” with subtotal hysterectomy, left adnexectomy and extramucosal cistectomy. The histopathological exam showed a moderately differentiated, ulcerated adenocarcinoma, widely infiltrating the colon wall invading the myometrium. Ziehl Neelsen (ZN) stain identified the presence of metachromatic bacillary structures in the colonic wall, lymph nodes and adnexal areas. Postoperative course was uneventful and the patient was discharged 10 days postoperatively in good clinical condition. After one year when the patient completed the full course of antitubercular drugs, a thorough work-up was performed. Colonoscopy, CT of the thorax, abdomen, pelvis showed no signs of recurrence while tumoral marker CEA (1,62 ng/ml – n<3,4) and QFT (Quantiferon-TB Gold) test were within normal range. Discussion and conclusion. Although digestive tuberculosis is included in differential diagnosis for those patients presenting abdominal pain or obstructive digestive symptoms in endemic regions, in this case the absence of TB infection criteria and positive endoscopic biopsy for colonic adenocarcinoma did not allow a complete pre- or perioperative diagnosis. Keywords: ADENOCARCINOMA, TUBERCULOSIS, SIGMOID, FALLOPIAN TUBE.

Association of adenocarcinoma and tuberculosis (TB) of the sigmoid colon is a rare clinical condition even in an endemic country as Romania. As preoperative diagnosis of colon cancer routinely poses no difficulties, the association of malignancy and TB may be challenging, both in term of diagnosis and treatment. Due to the intricate presentation of these two disorders, in most of the cases pathology examination of
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the surgical specimens ultimately reveals the accurate diagnosis in most of these cases. It is to be elucidated if the association of these lesions is a coincidence or there is an etiological relationship, as ulcerative colitis and Crohn’s disease are proved to be a premalignant condition for colon cancer.

CASE REPORT
We present the case of a 57-year-old female patient who was transferred in our department on emergency basis from the gastroenterology department. The patient had no personal or collateral relevant history (including TB) and was initially admitted in the gastroenterology unit for persistent lower quadrants abdominal pain, change in bowel habit (diarrhea followed by constipation) fatigue and altered general status. A diagnosis of sigmoid carcinoma was established by colonoscopy that revealed a tumor at 40 cm from the anal verge, with macroscopic and microscopic features of an adenocarcinoma (fig. 1).

Fig. 1. Colonoscopy aspect

The thorax radiography was normal whereas ultrasound examination of the abdomen revealed no liver or peritoneal deposits. Shortly after colonoscopy the patient developed symptoms of lower intestinal obstruction and was referred to surgery. The physical examination at admittance in our unit revealed a distended abdomen, tenderness in the left lower quadrant where an imprecisely defined mass was palpable and exaggerated bowel sound; rectal touch and vaginal examination were inconclusive. Except for a mild microcytic anemia, the lab tests were within normal range. Hydroaeric levels were present on plain abdominal X-ray.

Following a swift preoperative preparation, the patient was operated on through a median laparotomy; the exploration of the peritoneal cavity revealed an obstructive sigmoid tumor with serosal invasion, adherent (invading) to the body of uterus and left adnexa and urinary bladder serosa, no liver or peritoneal metastases. Under these circumstances, a sigmoidectomy was performed “en bloc” with subtotal hysterectomy, left adnexectomy and extramucosal cistectomy. Postoperative course was uneventful and the patient was discharged 10 days postoperatively in good clinical condition.

Resection pieces were examined at the Pathology Department of “Sf. Spiridon” Hospital. The anatomic and pathological examination consisted in the macroscopic evaluation of the colonic tumor and subsequently the fragments were fixed in 10% neutral formalin and processed for histological techniques including the classic paraffin, cutting on microtome 4μm sections and stained with Hematoxylin-Eosin (HE) and Ziehl Neelsen (ZN) for tuberculous bacillary identification.

The histopathological exam showed a moderately differentiated, ulcerated adenocarcinoma, widely infiltrating the colon wall (fig. 2) complicated with parietal fis-
tula and granulation tissue (in which also found food debris). The infiltrative tumor interested the external myometrium about 2 mm (fig. 3). In the lymph nodes, the adherent colon and the omentum numerous granulomatous lesions, with central caseous necrosis and tendency to confluence were identified (fig. 4). The tuberculous lesions were also found in the left fallopian tube with second involvement of the ovary. Ziehl Neelsen (ZN) stain identified the presence of metachromatic bacillary structures in the colonic wall, lymph nodes and adnexal areas (fig. 5).

Fig. 2. Moderately differentiated, ulcerated adenocarcinoma, HE, x 4

Fig. 3. Infiltration of the uterus, HE, x 4

DISCUSSION
Since the initial mentioning almost 200 years ago by Bayle, association of tuberculosis and carcinoma is well documented in

ommended anti TB treatment and reassessing the patient on regular basis. After one year when the patient completed the full course of anti-tubercular drugs, a thorough work-up was performed. Colonoscopy, CT of the thorax, abdomen, pelvis showed no signs of recurrence while tumoral marker CEA (1,62 ng/ml – n<3,4) and QFT (Quantiferon-TB Gold) test were within normal range.

Fig. 4. Tuberculous granulomas in colonic wall, HE, x 4

Fig. 5. Koch bacillus, ZN, x 100
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lungs, skin and larynx (1). However, the coexistence of carcinoma and tuberculosis is rare, especially when located on the same site on the colon. Less than 70 cases are reported in the literature and to our knowledge this is the first to be mentioned in Romania. In an extensive review, Falagas and col established three different types of association between malignancy and TB: (i) the development of cancer on a background of a previous tuberculous infection; (ii) the concurrent existence of TB and malignancy in the same patient(s) or clinical specimen(s); and (iii) the diagnostic challenges due to multi-faceted presentations of these two disorders (2).

Experimental research found that Mycobacterium tuberculosis can induce DNA damage and increased ant apoptotic activity, which along with prolonged chronic inflammation may facilitate carcinogenesis (3-7).

As demonstrated that pulmonary scarring of TB etiology may generate lung cancers, chronic inflammatory mucosal changes from GERD and H. pylori gastritis are initiating a sequence of metaplasia and dysplasia results in neoplastic change. It is also universally accepted that severe weight loss or malnutrition related to an advanced neoplastic disease disturbs host immunity and increase susceptibility to activate tubercular infection, possibly by tumor peptides or antigens. On the other hand, according to some Indian authors, the association of carcinoma and tuberculosis is coincidental, the argument being that compared to the high incidence of abdominal tuberculosis in India, the cases of coexisting tuberculosis and carcinoma are very few (8,9).

A particular aspect of the case we report is the association with genital tuberculosis and a question to be asked is if TB lesions originated from the uterus or fallopian tube and subsequently involved the sigmoid or vice versa. Genital TB is almost always secondary to TB elsewhere in the body and the mode of spread is usually hematogenous or lymphatic and occasionally occurs by way of direct contiguity with an intraabdominal or peritoneal focus (10). Although only one tube appears infected, in more than 90% of patients with genital TB, the tubes are involved bilaterally.

CONCLUSIONS
In our study, although digestive tuberculosis is included in differential diagnosis for those patients presenting abdominal pain or obstructive digestive symptoms in endemic regions, in this case the absence of TB infection criteria and positive endoscopic biopsy for colonic adenocarcinoma did not allow a complete pre- or perioperative diagnosis.

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**THE EFFECTS OF CHLORHEXIDINE AND SODIUM HYPOCHLORITE ON THE SETTING TIME OF CALCIUM-ENRICHED MIXTURE CEMENT**

The aim of a study realized by a group of Iranian researchers was to evaluate whether adding 2% chlorhexidine and 2.6% sodium hypochlorite to calcium-enriched mixture cement would affect its setting time or not. The setting time of calcium-enriched mixture cement was evaluated in three groups (n=9) as follows: group 1; calcium-enriched mixture cement, group 2; calcium-enriched mixture cement+2% chlorhexidine and group 3; calcium-enriched mixture cement+2.6% sodium hypochlorite. Then the mean values of setting time were calculated and the Kolmogorov-Smirnov test was used to evaluate the normal distribution of data. The Kruskal-Wallis and Mann-Whitney U tests were used for statistical analysis. Statistical significance was set at 0.05. The obtained data show that the mean setting time for groups 1, 2 and 3 were 105, 120 and 220 min, respectively. There was a significant increase in the duration of setting time in group 3 (sodium hypochlorite) in comparison with the two other groups (P<0.05). In conclusion, the researchers showed that the sodium hypochlorite significantly increase the setting time of calcium-enriched mixture cement, whereas chlorhexidine did not alter the setting time (Frough Reyhani M, Ghasemi N, Shakouie S, Rahimi S, Salem Milani A, Ranjbar B. Effects of Chlorhexidine and Sodium Hypochlorite on the Setting Time of Calcium-Enriched Mixture Cement. *Iran Endod J*. 2015;10(3):162-164).

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