Tuberculosis Peritonitis-Related Ascites and Malign Ascites: How Can We Discrimate Them with A Simplier Way?

Tüberküloz Peritonitle İlişkili Asit ve Malign Asit: Ayırımını Basit Bir Yolla Nasıl Yapabiliriz?

Ascites

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To the editor:

Ascites is free fluid within the peritoneal cavity and is diagnosed by physical examination, ultrasonography as well as computerized tomography. Serum-ascites albumin gradient should always be calculated to detect the etiology of ascites. A gradient lower than 1.1 g per deciliter suggests that ascites is mostly related to peritoneal carcinomatosis (PC) and tuberculous peritonitis (TP) [1].

Tuberculosis is less frequently seen in developed countries, compared to less developed regions including the rural areas of the Middle East [2]. Two years ago, nearly 9 million new cases were detected worldwide, 0.023 % of whom were from the Turkey [3,4]. Extrapulmonary tuberculosis including TP is seen in 10 to 42% of patients and mimics many diseases such as PC [5].

In addition, TP, which mimics advanced ovarian cancer, should be included in the differential diagnosis of ascites particularly in female cases. Therefore, a high index of clinical suspicion is needed to reach a correct diagnosis.

Malignant ascites is a potential long-term complication of PC and the presence of malignancy-related ascites is considered to be a poor prognostic sign. The cardinal features of malignant ascites are positive cytology, elevated total protein concentrations and a low gradient serum-ascites albumin gradient which may also be seen in TP-related ascites [6].

Therefore, we aimed to determine the major and simple differences between TP-related ascites and PC-caused ascites.

In the current trial, a retrospective evaluation was performed using the clinical data from the hospital records of twenty-eight TP cases (23 female) and thirty-six PC cases (16 female cases 14 of whom were diagnosed with advanced ovarian cancer) over 17 years of age, who had been treated in the Gastroenterology Department of the hospital between January 2004 and October 2014

Laparoscopic biopsy in connection with pathological examination was conducted to diagnose all cases. Patients with hepatocellular carcinoma and hematologic malignancies were excluded from the study. All the patients were examined with CT of the abdomen and pelvis. Unguided or ultrasound-guided diagnostic paracentesis was performed in all cases. Patients were also evaluated in terms of laboratory findings. Data was entered into Microsoft Excel and analyzed using the chi-square test.

The mean age of PC cases was significantly higher than that of TP cases (60.75±16.45 versus 30.8±12.65 years; $p<0.001$). There was a female predominance in the TP group compared to the PC group (82% versus 43%; $p<0.001$). Compared with the PC group, the mean serum globulin level differed significantly and was found higher in the TP group (3.42±0.96 versus 4.38±1.59; $p<0.001$). We also demonstrated that the mean serum albumin level in the TP group was higher than that of the PC group (3.41±1.55 versus 2.87±0.67, $p<0.005$). Detailed data is presented in Table I.

In female patients, TP is frequently misdiagnosed as ovarian cancer due to the presence of exudative (low-gradient) ascites as well as higher levels of CA-125. Furthermore, biochemical features of serum and ascites have been investigated in recent years; however they have not been reported useful in discriminating between TP and PC [7,8].

In the current study, hyperglobulinemia, normoalbuminemia and being at a younger age are factors in favor of a TP diagnosis and the presented findings can help to distinguish between TP and PC cases.

In summary, peritoneal tuberculosis should be considered in the differential diagnosis of exudative ascites. A high level of clinical suspicion is required, especially in high-risk populations living in rural areas. This study may help to clarify the nature of ascites and to develop diagnostic strategies in the field of peritoneal diseases.

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Table I. The detailed data of cases

	Disease	n	mean±Standart deviation
Age(years)	TP	28	30.81±12.65 (17-90)
	PC	36	60,75±16,45 (31-88)
Serum albumin	TP	28	3.41±1.55(2.2-4.5)
	PC	36	2,87 ±0.67(1.56-4.16)
Serum Globulin	TP	28	4.38±1,59(2.6-6.4)
	PC	36	3,42±0.96(1.73-6.3)
Ascites- albumin	TP	28	2.68±1.14(1.5-3.7)
	PC	36	2.16 ±0.61(0.97-3.6)
Serum-ascites albumin gradient (SAAG)(mg/dl)	TP	28	0.73±0.61(1.39-3.76)
	PC	36	0,72±0,28 (0.08-1.06)

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