Peritoneal (Paraovarian) Malignant Mesothelioma

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Abstract

Peritoneal Malignant Mesothelioma (PMM) is uncommon disease, but increasing in frequency nowadays. This highly aggressive malignancy occurs most commonly in older men and has a strong association with asbestos exposure. It manifests most often as diffuse sheet-like or nodular thickening of the peritoneal surfaces, but it may occasionally be a localized mass. The very large variations of its clinical features and its histological appearance mimicking adenocarcinoma make this tumor is difficult to diagnose.

We report a case of PMM that previously diagnose as adenocarcinoma of the ovary. A 29 year-old female came to gynecology clinic with para-ovarian mass. She had no history of asbestos exposure. The mass was oval 9x6x6 cm in size, whitish and firm. Microscopic features showed papillary dense structure with desmoplastic stroma, covered by a layer of cuboidal to columnar cells. The cells with mild pleomorphism and hyperchromatic nuclei, mitotic figures were minimal. The immunohistochemistry tests revealed positive for D2-40, Calretinin, CK8 and CK 18, weakly positive for Inhibin and EMA, and negative for CEA and AFP. Patient had been received chemotherapy, there were no metastasis.

Keywords: malignant mesothelioma, adenocarcinoma, paraovarian, immunohistochemistry.
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Introduction

Malignant Mesothelioma is uncommon disease, but increasing in frequency nowadays.[1] This highly aggressive malignancy occurs most commonly in older men and has a strong association with asbestos exposure.[2] It manifests most often as diffuse sheet-like or nodular thickening of the peritoneal surfaces, but it may occasionally be a localized mass. The very large variations of its clinical features and its histological appearance mimicking adenocarcinoma make this tumor difficult to diagnose.[3]

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Case Ilustration

We report a case of Paraovarian malignant mesothelioma that previously diagnose as Adenocarcinoma of the ovary. A 29 year-old female came to gynecology clinic with para-ovarian mass. She had no history of asbestos exposure. The mass was oval 9x6x6 cm in size, whitish and firm. Patient had been received chemotherapy, there were no metastasis.

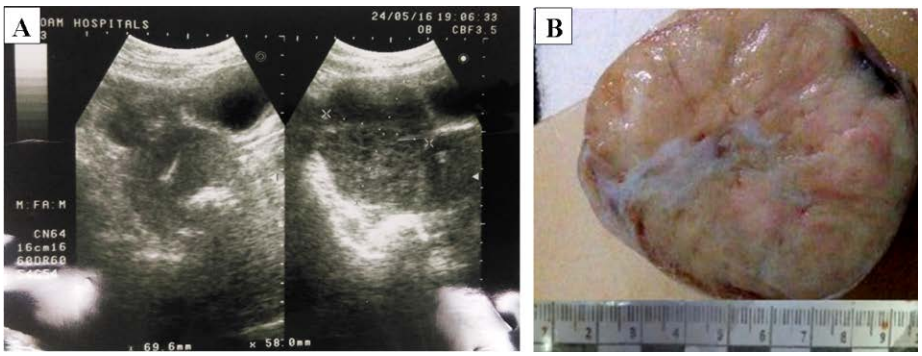

Figure 1. (A) Abdominal USG ; (B) Gross macroscopic.

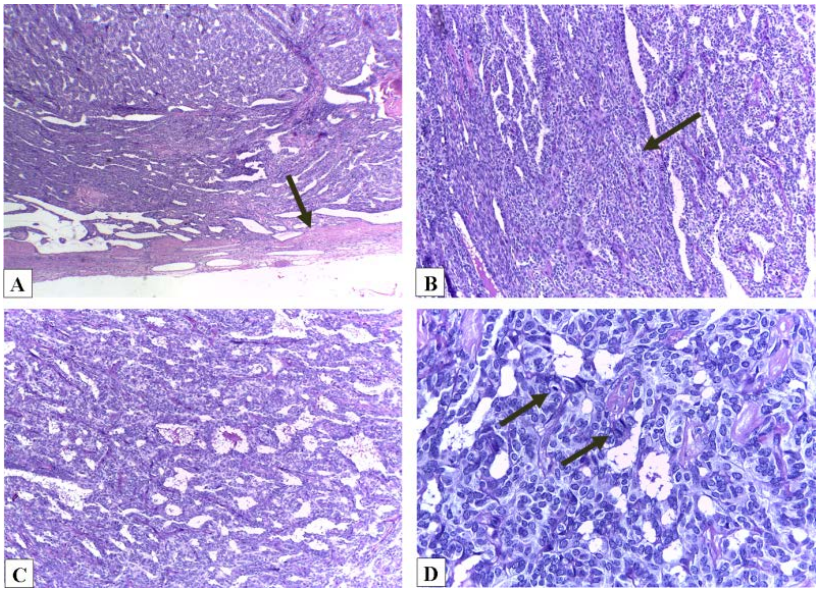

Figure 2. Morphological appearances, Hematoxylin Eosin (HE) staining, (A) Fibrous capsule (arrow), 40X; (B) Solid area (arrow), 100X; (C) Glandular pattern, 100X; (D) Mild nuclear atypia and mitotic figure (arrow), 400X.

Immunohistochemistry

The immunohistochemistry test revealed positive results for D2-40, Calretinin, CK8 and CK 18; weakly positive for Inhibin and EMA; and negative for CEA and AFP.

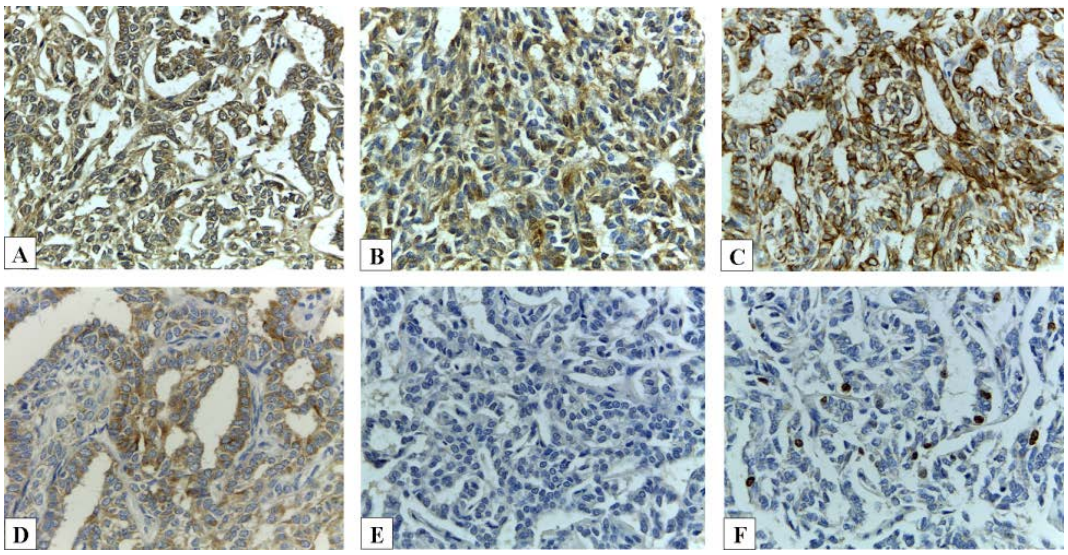

Figure 3. Immunohistochemistry (IHC) staining, (A) D2-40 positivity; (B) Calretinin positivity; (C) CK18 positivity; (D) Inhibin positivity; (E) CEA negativity; (F) Ki-67 proliferation index, 400X.

Discussion

Malignant mesothelioma (MM) is a highly invasive and invariably fatal tumor arising from the mesothelial cells that form the serosal lining of the pleural space (80-85%), peritoneal cavity (10-15%), pericardium and the tunica vaginalis (<5%).[4] Our case was in paraovarian area. The relation between asbestos exposure and the development of mesothelioma in pleura, peritoneum, and pericardium has been determined previously and cumulative asbestos exposure has been reported to be directly proportional to risk of cancer. Only 33% of MM

patients have a history of asbestos exposure.[5,6] In addition, simian virus 40 has been named among etiological factors in carcinogenesis of mesothelioma.[5] There was no history of asbestos exposure in our patient.

Patients with mesotheliomas do not present with distinctive symptoms and this causes difficulties in diagnosis and treatment. Imaging is important in diagnosis, and ultrasonography and CT scan of the abdomen are useful. However, pathological examination of biopsy or resection material is essential for confirmation of the definitive diagnosis.[5] Clinically, symptoms in these patients include the following: ascites (77%), abdominal pain (69%), asthenia (43%), weight loss (32%), anorexia (30%), abdominal mass (30%), fever (22%), diarrhea (17%), vomiting (15%), and inguinal or umbilical hernia (5-10%) in various associations.[6] Our patient had ascites, abdomen enlargement, and abdominal pain.

There are three major histological types which are the epithelioid, sarcomatoid, and mixed (biphasic) types.[2,4] The most frequent histologic type of MM, such in our case is epithelioid with growth patterns of tubulo-papillary, acinar (glandular), adenomatoid (also termed microglandular), and solid. Solid epithelioid MM consists of nests, cords, or sheets of round, oval, or polygonal cells with abundant eosinophilic cytoplasm and round, vesicular nuclei with prominent nucleoli. These cells resemble non-neoplastic, reactive mesothelial cells and the differential diagnosis may include reactive mesothelial hyperplasia, solid adenocarcinoma, and even squamous cell carcinoma owing to the abundant pink cytoplasm.[3]

MM is characterized by positive staining for epithelial membrane antigen (EMA), calretinin, Wilm tumour 1 antigen (WT1), cytokeratin (CK) 5/6, antimesothelial cell antibody-1, and mesothelin, D2-40 (podoplanin).[1,7] In combination with negative epithelial markers (Carcinoembryonic antigen (CEA), CK 20, Thyroid transcription factor (TTF)-1) were used to distinguish mesotheliomas from the metastatic carcinoma to the peritoneum.[4]

Summary

Malignant peritoneal mesothelioma is a rare but highly malignant abdominal tumor. It is important to consider the diagnosis when solid peritoneal masses are present. Pathologist should be aware of this entity since its morphological features can mimics to adenocarcinoma, despite its rare location.

References

1. Sugarbaker PH, Acherman YZ, Gonzales-Moreno S, Ortega-Perez G, Stuart OA, Marchettini P, et al. Diagnosis and treatment of peritoneal mesothelioma: The Washington Cancer Institute experience. Semin Oncol. 2002;29:51-61.

2. Shavelle R, Musser KV, Lee J, Brooks J. Life expectancy in pleural and peritoneal mesothelioma. Lung Cancer Int. 2017;1-8

3. Husain AN, Colby T, Ordonez N, Krausz T, Attanoos R, Beasley MB, et al. Guidelines for pathologic diagnosis of malignant mesothelioma. Arch Pathol Lab Med. 2013;137:647-67.

4. Siow SL, Mahendran HA. Malignant peritoneal mesothelioma presenting as ascites of unknown origin. Am J Case Rep. 2015;3:98-101.

5. Algin MC, Yaylak F, Bayhan Z, Aslan F, Bayhan NA. Malignant peritoneal mesothelioma: clinicopathological characteristics of two cases. Case Rep Surg. 2014:1-3.

6. Shih CA, Ho SP, Tsay FW, Lai KH, His PI. Diffuse malignant peritoneal mesothelioma. Kaohsiung J Med Sci. 2013;29:642-5.

7. Bollinger DJ, Wick MR, Dehner LP, Mills SE, Swanson PE, Clarke RE. Peritoneal Malignant Mesothelioma versus Serous Papillary Adenocarcinoma: A Histochemical and Immunohistochemical Comparison. American Journal of Surg Pathol. 1989;13:659-70.