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Malignant Deciduoid Mesothelioma
– A Case Report –

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Malignant deciduoid mesothelioma is a rare malignant neoplasm occurring in the peritoneum of young women. We report a case of malignant deciduoid mesothelioma that occurred in the omentum of a 47-year-old woman. The patient had never exposed to asbestos and had no history of cesarean section. The lesions were multiple infiltrative nodules affected the peritoneal cavity, omentum, and surface of the uterus with both ovaries. Microscopically, the nodules were composed of mesothelial cells similar to decidual cells

Key Words : Malignant mesothelioma; Omentum

Malignant mesothelioma usually affects the pleura of adult males who have been exposed to asbestos.[1] A malignant deciduoid mesothelioma is an unusual morphologic variant of an epithelial mesothelioma that closely simulates exuberant ectopic decidual reaction. The tumor arises more commonly from the peritoneum but also the disease has been reported to occur in the pleura. The cause of this lesion is unknown. Considering the young age of patients and the failure to demonstrate hormone receptors in the neoplastic cells, it is unlikely that asbestos exposure or hormonal imbalance has plays any role in the development of the disease. Malignant deciduoid mesotheliomas are extremely rare and only 30 cases have been reported in the clinical literatures.[2] We reported here on a case of malignant deciduoid mesothelioma occurring in the omentum.

CASE REPORT

A 47-year-old woman came to our hospital with a month history of generalized abdominal pain and distension. The patient had two children, and all were delivered vaginally. There was no history of asbestos exposure in the patient or her family. The patient had never smoked. On physical examination, a generalized abdominal tenderness and distension were noted. An ultrasound scan showed a large amount of ascites and a normal uterus with both ovaries. The chest X-ray was unremarkable. Abdominal and pelvic computer tomography showed a large amount of ascites and a thickened omentum with omental cakes; peritoneal carcinomatosis from an unknown origin was suspected (Fig. 1). Paracentesis was performed. On a cytological examination, the peritoneal fluid contained a few mesothelial cells and inflammatory cells. Laboratory investigations showed an elevated CA125 level (168.0 U/mL), but the level of other tumor markers were within the reference ranges. The patient underwent a total abdominal hysterectomy with bilateral salpingo-oophorectomy and omentectomy. At surgery, there were numerous micronodules that affected the peritoneal cavity, omentum, and surface of the uterus with both ovaries. The omentum measured 20.0×16.0 cm in size. The consistency was rubbery and the surface showed multiple white, firm nodules (Fig. 2A). On

microscopic examination, these nodules were composed of large polygonal or ovoid cells with abundant eosinophilic glassy cytoplasm with a sharp outline. The nuclei were a pleomorphic and vesicular, with a single prominent nucleolus. Mitoses were inconspicuous (Fig. 2C). The tumor cells were arranged in solid sheets and separated by a fibrous, loose edematous stroma, sometimes hyalinized (Fig. 2B). There were foci of tumor necrosis. Immunohistochemical staining showed diffuse and strong positive for cytokeratin and epithelial membrane antigen and partial positive for vimentin and calretinin (Fig. 2D), but negative for S-100 protein, carcinoembryonic antigen, LCA, desmin, and chromogranin.

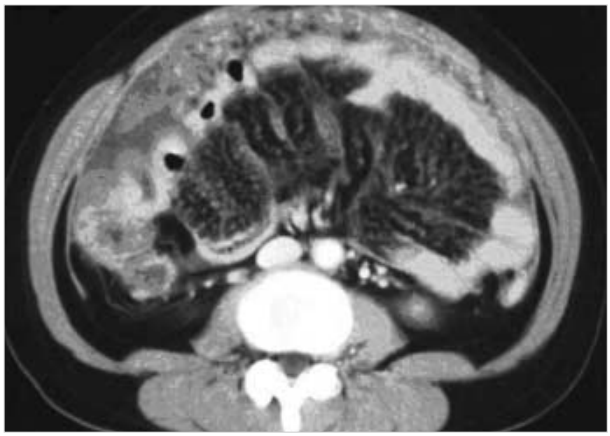

Fig. 1. Abdominal and pelvic CT showed large amount ascites and thickened omentum with omental cakes.

An examination of the uterus with ovaries and fallopian tubes showed malignant cells on the surface. Electron microscopy showed tumor cells lying within an electron-dense matrix. Glycogen lakes, lipid droplets, lamellar bodies and a considerable amount of tonofilaments were seen within the cytoplasm. A moderate number of slender microvilli was also present (Fig. 3). These features are consistent with a mesothelioma.[3-5] The pathological diagnosis was a malignant deciduoid mesothelioma.

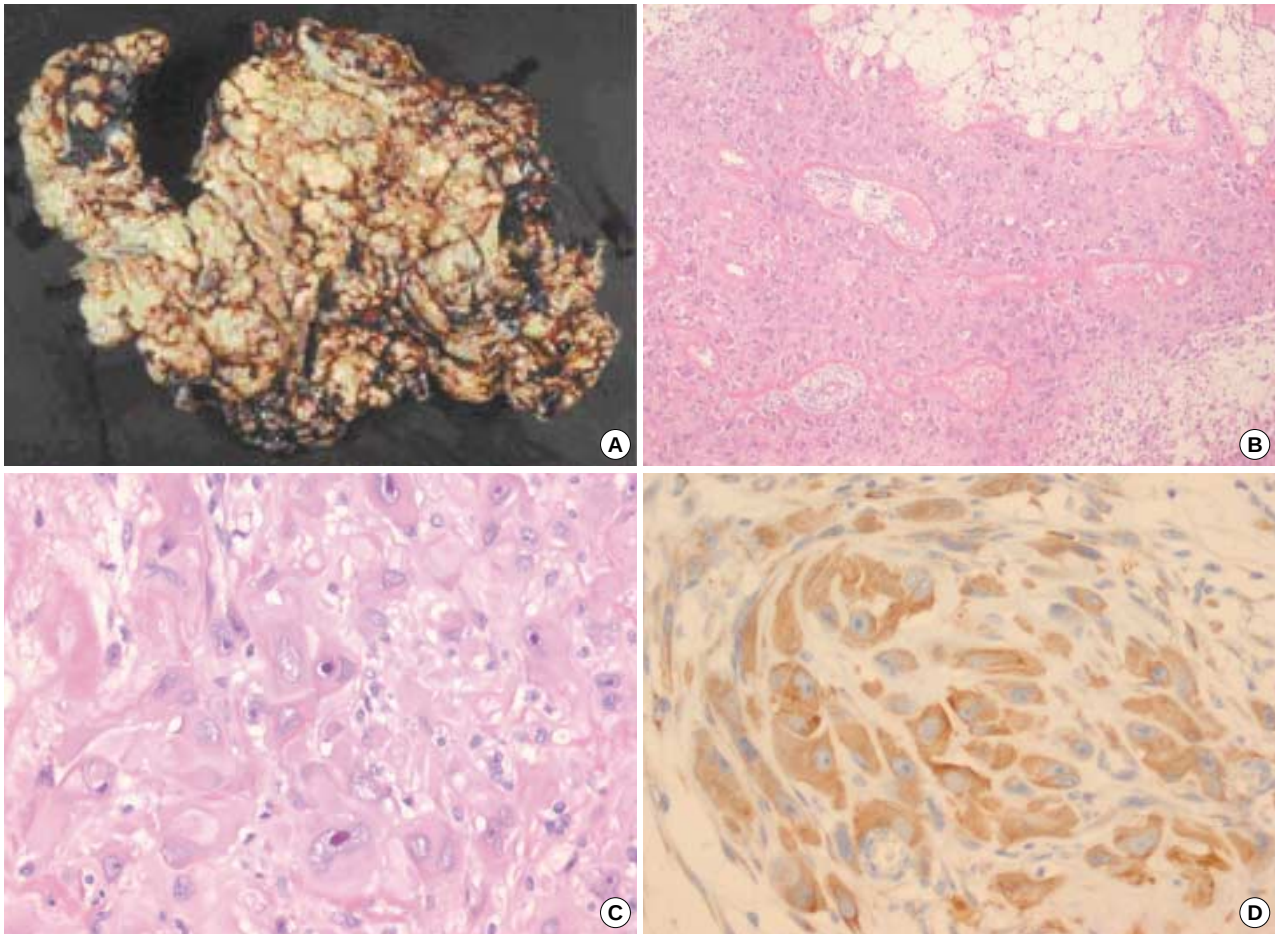

Fig. 2. (A) The surface of omentum showed multiple white, firm nodules. (B) Tumor cells were arranged in solid sheets and separated by a fibrous or loose edematous stroma, sometimes with hyalinized areas (H&E). (C) The tumor was composed of large polygonal or ovoid cells with an abundant eosinophilic glassy cytoplasm with a sharp outline. The nuclei were a pleomorphic and vesicular with a single prominent nucleolus (H&E). (D) Immunohistochemical staining for calretinin. Tumor cells show positive immunoreactivity.

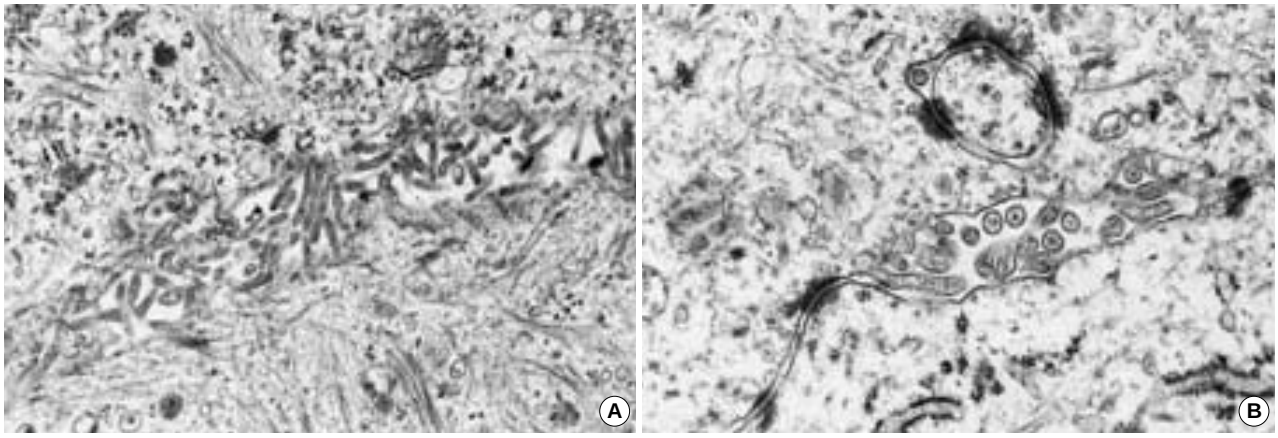

Fig. 3. (A) A moderate number of slender microvilli was present. Glycogen lakes, and a considerable amount of tonofilaments were seen within the cytoplasm (EM, ×10,000). (B) Desmosomes were present (EM, ×40,000).

Four weeks later, the patient complained of recurrent abdominal pain and distension. The condition of the patient gradually deteriorated, and the patient died six months later.

DISCUSSION

A malignant deciduoid mesothelioma is a rare malignant neoplasm accounting for less than 5% of mesotheliomas. In 1994, Nascimento *et al*. first reported a case of malignant deciduoid mesothelioma in the peritoneum of young women.[4] The disease has no etiologic correlation with asbestos and has a highly aggressive behavior with a poor prognosis. In contrast to a classic mesothelioma, several characteristic features has been noted in patients with a malignant deciduoid mesothelioma. It has a predilection to the peritoneal location, the female gender, and young age, which makes the relation with asbestos exposure unlikely[6] since usually a latent period of 20 to 40 years is needed between the initial exposure to asbestos and the development of mesothelioma. Recently, however, malignant deciduoid mesothelioma has been reported in males with a history of asbestos exposure, in postmenopausal women, and in the pleura.[2,7,8]

A malignant deciduoid mesothelioma is histologically composed of a proliferation of large, round, ovoid, and polygonal cells with sharp cellular outlines, abundant glassy eosinophilic cytoplasm, and round vesicular nuclei with prominent eosinophilic nucleoli. Cellular atypia and anaplasia are noted, but mitotic figures are infrequent.[2,3,7] The cytoplasm is often more dense and darker around the nucleus and lighter at the periphery.[6] The cells are arraged in anastomosing sheets or in small clusters, separated by a fibrous or loose edematous stroma. In 1994, Cho *et al*. reported a case of diffuse anaplastic malignant mesothelioma of the peritoneum in a 50-year-old Korean woman.[9] In this case, tumor cells were described to have a highly anaplastic appearance with sheet-like arrangements. Considering the description and figures of the tumor, we assume that this case was actually a case of malignant deciduoid mesothelioma.

Immunohistochemical staining should indicate positive expression of low molecular weight cytokeratin (CAM 5.2), vimentin, and calretinin in mesothelioma cells. Cytokeratin 5/6 has recently been reported as a sensitive and relatively specific positive finding in the diagnosis of a mesothlioma.[2] If doubt persists, ultrastructural finding helps to diagnose the disease. From electron microscopy, malignant deciduoid mesothelioma shows an electron-dense matrix and tumor cells having glycogen lakes, lipid droplets, lamellar bodies and a considerable amount of tonofilaments. A moderate number of slender microvilli are also present.[3-5] The differential diagnosis between a pseudotumoral deciduosis and a malignant deciduoid mesothelioma is important as a malignant deciduoid mesothlioma is highly malignant and seems to run a rapidly fatal clinical course. Pseudotumoral deciduosis frequently has been described in pregnancy but is also observed in the perimenarchal and postmenopausal periods. Grossly, it manifests as small discrete nodules or excrescences on the peritoneal surface. The extensive involvement of the peritoneal cavity and the presence of ascites militate against the diagnosis of pseudotumoral deciduosis. Microscopically, the decidual cells of pseudotumoral deciduosis are present within the connective tissue, but tumor cells of mesothelioma affect its surface. The nuclei of the decidual cells are smaller and have dark clumped chromatin, whereas the nuclei of mesothelioma cells are vesicular with fine chromatin and prominent nucleoli.

In summary, we report a case of malignant deciduoid mesothelioma of the peritoneum in a 47-year-old woman, manifesting an aggressive progression leading to the death of the patient.

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