中文題目：於低劑量電腦斷層掃描意外發現的惡性腹膜間皮瘤：個案報告

英文題目：Incidental Finding of Malignant Peritoneal Mesothelioma on Low-dose Computed Tomography: A Case Report

作　　者：林楷傑[1], 謝絜羽[2]

服務單位：[1]高雄醫學大學附設醫院內科部, [2]高雄市立小港醫院血液腫瘤內科

Introduction:

Mesothelioma is a rare malignancy which develops from the mesothelial surfaces of the pleural cavity, peritoneal cavity, tunica vaginalis, or pericardium. The majority of the disease is from the visceral pleura, and the malignant peritoneal mesothelioma (MPM) accounts for only 7-30% of cases. The most well-known carcinogen to cause mesothelioma is asbestos, as more than 80% cases are associated with asbestos exposure. We report a case of a 72-year-old female who was diagnosed with MPM during regular low-dose computed tomography (LDCT) follow-up of asbestosis, and received systemic chemotherapy thereafter due to high tumor burden.

Case Report:

This previously healthy 72-year-old female is a retired ship-breaking worker. During a health screen one and a half years ago, bilateral calcified pleural plaques were found on LDCT. Asbestosis was suspected, so she then received regular LDCT follow-up every six months at our outpatient clinic. During this period of time, asthma was also diagnosed and inhaled corticosteroids were prescribed for long-term control.

A year later, new-onset ascites was found on LDCT. Furthermore, she also developed progressive bloating sensation, general malaise, and poor appetite. Hence, after admission for ascites evaluation, abdominal computed tomography revealed thickening of peritoneum with ascites, and carcinomatosis was highly suspected. Further exams with panendoscopy, colonoscopy, and gynecological ultrasound for primary tumor origin were all unremarkable. Moreover, the cell block pathology from abdominal paracentesis also showed negative of malignancy. As a result, we consulted the surgeon for surgical biopsy of the peritoneum. Thus, surgical biopsy of the peritoneum was performed, and besides noticing a large amount of ascites with severe peritoneal adhesion, lots of nodules over the peritoneum and omentum were discovered. Excisional biopsies of the peritoneal and omental nodular tumors, along with adhesionolysis were done.

The pathology revealed adenocarcinoma arranged in a tubular pattern or solid nests infiltration with calcification. The immunohistochemical (IHC) stain showed negative for TTF-1 and CDX2, but positive for CK5/6 and HBME-1. The negative PAX8

immunostain ruled out the possibility of serous ovarian carcinoma. Therefore, the diagnosis of malignant mesothelioma was confirmed. On the positron emission tomography (PET) scan, multiple FDG-avid lesions in the peritoneum and mesentery were seen. The patient also received right pleural biopsy via video-assisted thoracoscopic surgery (VATS), and the pathology revealed negative of malignancy.

Due to the high tumor burden, we suggested systemic chemotherapy initially. After receiving 4 cycles of pemetrexed + cisplatin/carboplatin, persistent mild peritoneal thickenings and ascites were still found on the follow-up abdominal CT. Thus, we arranged management with cytoreductive surgery (CRS) for the patient subsequently.

Discussion:

MPM is an aggressive neoplasm which is difficult to diagnose at early stages due to its nonspecific symptoms. Common complaints include abdominal distention, diffuse abdominal pain, nausea, anorexia, and weight loss. Most patients present as widespread involvement of the peritoneal cavity initially at diagnosis, and the average time between initial symptoms and diagnosis was approximately 4–6 months.

As it is difficult to make the diagnosis sorely based on radiographic images, further tissue sampling must be performed if irregular margins of the peritoneum or new ascites are found. CT-guided core needle biopsy or laparoscopy shows much more diagnostic advantage than paracentesis for ascitic fluid cytology. Also, laparoscopy is also useful to help identify the extent of disease burden. IHC markers play the most important role of diagnosis. The current recommendation is to use two positive mesothelioma markers (EMA, calretinin, CK 5/6, WT-1, mesothelin, and antimesothelial cell antibody-1) and two negative carcinoma markers (CEA, Ber-EP4, LeuM1, and Bg8 thyroid transcription factor-1, and B72.3).

MPM tends to confined to the abdominal cavity due to the limited hematogenous and lymphatic metastatic potential. The novel TNM system uses peritoneal carcinomatosis index (PCI) scores to determine the T stages of MPM, and shows better prognostic stratification than the typical TNM staging system. Higher PCI scores or any N/M positive disease represent lower 5-year survivals.

Cytoreductive surgery (CRS) and intraperitoneal chemotherapy (either heated intraperitoneal chemotherapy [HIPEC] or early postoperative chemotherapy [EPIC]) remain the first-line therapy for MPM. The largest retrospective study shows the median overall survival to be 53 months and 47% in 5-year survival in 405 MPM patients across 29 centers treated with CRS-HIPEC. Systemic chemotherapy is the alternative treatment if the patient is ineligible for surgical treatment. Pemetrexed-based regimens are currently the first-line regimen as disease control

rate (stable + response) which was reported to be 71.2%. Additional target therapy of bevacizumab also showed progression-free survival and overall survival benefits from the phase III MAPS trial. The role of perioperative chemotherapy, other specific molecular therapy, or immunotherapy is still under investigation.

Conclusion:

MPM is a rare clinical disease that is difficult to detect at early stages, and is mostly already widespread in the peritoneal cavity upon diagnosis. Our patient, a 72-year-old female diagnosed as MPM during regular LDCT follow-up of asbestosis. The disease was further confirmed by diffuse peritoneal and omental nodular tumors found intraoperatively, and by IHC stains. Systemic chemotherapy was adopted initially due to huge tumor burden, and she is now referred to the surgery department for CRS evaluation.

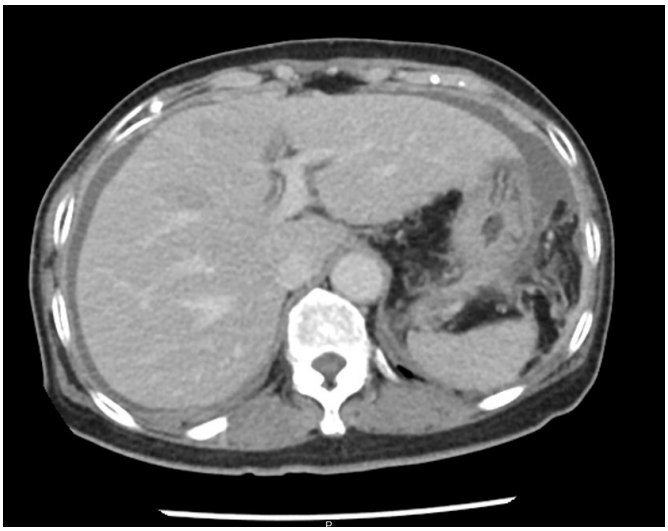

Figure 1. The abdominal CT findings of the patient upon diagnosis.
irregular thickening of the peritoneum with ascites accumulation

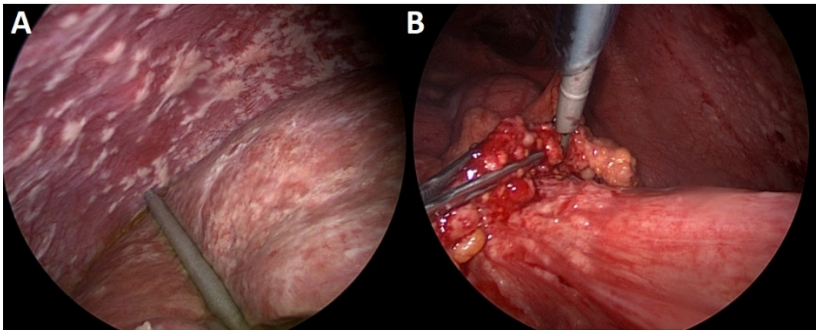

Figure 2. Intra-operative findings of the patient.
(A) right upper quadrant peritoneal nodular lesions; (B) omental nodular lesions