# Replacement of the uterus by malignant mesothelioma of the periteneum: A case report.

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**Summary**

Malignant mesothelioma of the peritoneum is a rare tumor that must be distinguished from the more common primary peritoneal serous epithelial neoplasms. We report a case of a 66-year-old female presenting with weight loss, anemia, and a large pelvic mass on ultrasound. At laparotomy a large (9x6.5x3.5 cm) mass in the anatomical position of the uterus was found in the minor pelvis. The uterus, tubes and ovaries could not be identified. Palpable paraaortic lymph nodes and liver nodules were found.

Immunohistochemically the tumor cells were positive for cytokeratin, epithelial membrane antigen and vimentin-CEA, but S-100 protein and Leu-M1 were negative.

Remnants of the uterine corpus, fallopian tubes and ovaries could not be identified. The overall features were best regarded as malignant peritoneal mesothelioma.

There have been reports of mesotheliomas involving the uterus. However, this is the first reported case of mesothelioma causing total replacement of the uterus.

*Key words:* Mesothelioma, peritoneum, uterus, female genital tract.

## Introduction

Mesothelioma is an uncommon mesenchymatic tumor of the serous membranes, especially the pleura. Its appearance in the peritoneum is relatively rare. Histological types range from solitary benign lesions to diffuse malignant tumors. The latter have to be distinguished from the more common serous epithelial neoplasms also arising from the peritoneum, which have a clinical behaviour similar to that of ovarian serous epithelial neoplasms. Cases of malignant mesothelioma affecting the uterus and the female genital tract in general have been reported, but they usually have the appearance of nodules of various sizes [1, 2]. This is the first reported case of malignant mesothelioma causing total replacement of the uterus.

## Case Report

A 66-year-old nulliparous female presented with weight loss, malaise and a two-year history of anemia in the gynecologic outpatient clinic. Her past medical history included non insulin-dependent diabetes mellitus, but no history of asbestos exposure. Her last menstrual period was 12 years before. Bimanual examination revealed a large, firm uterus. A departmental ultrasound scan showed a 6.5x6.5X7 cm mass in the place of the uterus (Figure 1). The patient was admitted to the gynecology ward for investigation.

Sigmoidoscopy, intravenous pyelography, and chest, skull and pelvic X-rays did not reveal any abnormalities. The Pap test findings were also normal. There was a slight elevation of CA 125 tumor marker (48 U/I) and CRP was clearly raised (99 mg/I). At laparotomy a large (9x6.5x3.5 cm) mass in the anatomical position of the uterus was found in the minor pelvis. The uterus, tubes and ovaries could not be identified. Palpable paraaortic lymph nodes and liver nodules were found. Frozen biopsy showed a malignant tumor but histological typing was not possible. The tumor from the pelvis was removed, and multiple biopsies from the pouch of Douglas, bladder, rectum, peritoneum and the omentum were taken.

Histologically the tumor had a solid growth pattern composed of large epithelioid round or polygonal cells with abundant eosinophilic cytoplasm. Mitoses were present. Edematous or hyalinized connective tissue with a mild mixed inflammatory infiltrate was seen within the tumor cells as well as rare asbestosis. The PAS reaction was negative and no epithelial mucin was demonstrated. Immunohistochemically the cells were positive for cytokeratin, epithelial membrane antigen (EMA) and vimentin-CEA, but S-100 protein and Leu-M1 were negative. Remnants of the uterine corpus, fallopian tubes and ovaries could not be identified. The overall features were best regarded as malignant peritoneal mesothelioma (Figure 2).

The postoperative period was uncomplicated, and the patient received five pulses of adriamycin. The patient died 16 months following the diagnosis.

## Discussion

Mesothelioma is an uncommon tumor of the serous membranes, pleura, peritoneum and pericardium and has been related to asbestos exposure. Peritoneal mesotheliomas account for 10-20% of mesotheliomas and involvement of the genital tract is rare. They range from benign asymptomatic solitary nodules to clinically malignant mesotheliomas, which involve multiple sites. The latter macroscopically consists of multiple nodules of varying sizes. The patients with malignant mesothelioma of the

Revised manuscript accepted for publication April 8, 2001

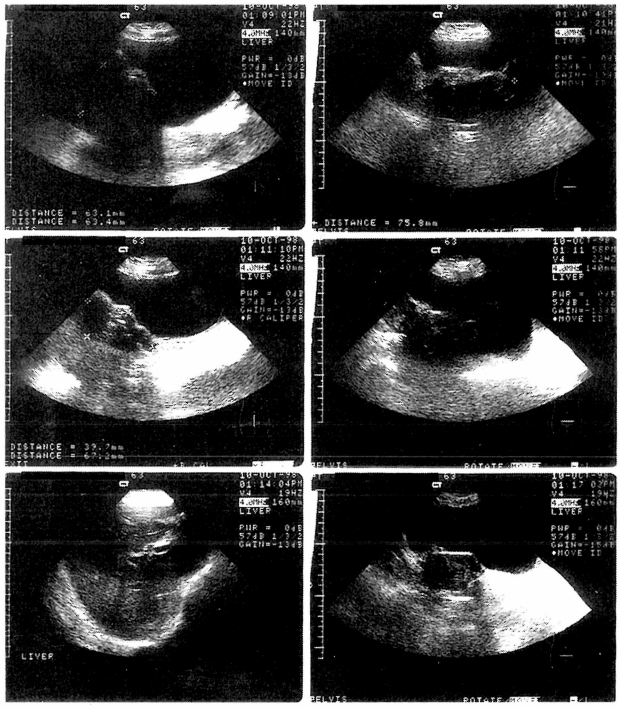


Figure 1. — Ultrasound scan showing a 6.5x6.5x7 cm mass in the place of the uterus.

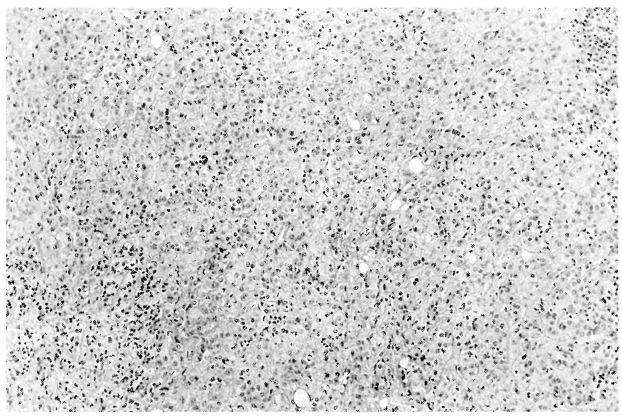

Figure 2. — Solid sheets of oval or polygonal epithelial cells with abundant eosinophilic cytoplasm (H+E x 120).

genital tract usually present with abdominal distention, ascites, weight loss and pain.

Peritoneal mesotheliomas are often confused with the more common primary peritoneal serous epithelial tumors (malignant or borderline) which are thought to arise within the secondary Mullerian system and have a clinical behaviour similar to serous epithelial ovarian malignant or borderline tumors [3]. Although malignant mesothelioma is considered to be of mesenchymal origin only 20% of them have sarcomatous features.

The majority has an epithelial histologic type making the distinction between mesotheliomas and primary peritoneal serous epithelial tumors difficult. Therefore the use of immunocytochemistry is necessary and a variety of markers are used for the diagnosis of mesothelioma. Placental alkaline phosphatase, S-100, Leu M1, CEA, B72.3 and BerEP4 usually stain negative in mesotheliomas and positive in serous epithelial tumors. However mesotheliomas are usually positive for cytokeratin and EMA [4, 5]. In this case S-100 and Leu M1 were negative, strongly suggesting mesothelioma.

Although CA-125 is a sensitive marker for serous carcinoma, it is not effective in distinguishing it from mesothelioma. In our case CA 125 in the serum was indeed mildly elevated.

There have been reports of mesotheliomas involving the uterus [1, 2]. However, this is the first reported case of mesothelioma causing total replacement of the uterus (MEDLINE search 2001-1967, key words: mesothelioma, peritoneum, female genital tract, uterus). Our case was also unusual in that the patient presented with a large pelvic mass, without ascites or any gynecological symptoms. The patient had not been occupationally exposed to asbestos.

There are no worldwide accepted guidelines regarding the management of peritoneal mesothelioma because of the lack of large series. A treatment protocol proposed by Averbach *et al.* recommend diagnostic laparoscopy with multiple biopsies in the clinical suspicion of diffuse malignant peritoneal mesothelioma. The value of cytologic examination of ascitic fluid is disputed by these authors. CT of chest, abdomen, and pelvis is needed for staging. After histologic diagnosis and staging have been achieved, and if no symptoms of intestinal obstruction are present, two to three courses of induction intraperitoneal chemotherapy are recommended followed by cytoreductive surgery approximately two months after completion of induction chemotherapy in patients with a response or stable disease. Surgery consists of peritonectomy and must be aimed at achieving complete or near-complete cytoreduction. Additional intraperitoneal chemotherapy should be administered intraoperatively and in the early postopertive period [6]. Chemotherapy with anthracyclines or a cisplatin-based combination has been shown to be active [7].

Survival has been reported to be better in patients with good performance status, longer duration of symptoms, early stage of disease, epithelial histological type, and treatment with combined surgery and chemotherapy [7].

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