Pyometra refers to pus accumulation in the uterine cavity, which is usually seen in older women. Because most sufferers present non-specific symptoms, a correct diagnosis is usually not made until operation for a ruptured pyometra. Pyometra is seen as a fluid-distended uterus on computed tomography (CT). This report presents a case of pyometra with a unique appearance on computed tomography. It appears as mural air on the uterine wall, similar to that seen in emphysematous cystitis.

Pyometra, a condition of pus accumulation in the uterine cavity, is an uncommon gynecologic problem, which is mainly seen in postmenopausal women [1]. Patients with pyometra may have vaginal discharge or vaginal bleeding indicating a gynecologic problem. Others may have only non-specific symptoms, such as abdominal pain or fever of unknown origin [1]. For those cases with non-specific symptoms, abdominal radiography and computed tomography (CT) are the usual imaging studies of choice. Reported here is a case of pyometra with mural air on the uterine wall as seen on a CT. The case is similar to mural air on the bladder in emphysematous cystitis. Such an image has not previously been reported in human pyometra.

CASE REPORT

A 79-year-old female was admitted to the emergency room because of disturbed consciousness, shortness of breath, and poor digestion. Before entering the emergency room, she had suffered from intermittent abdominal pain for about three months. These symptoms were considered and treated as constipation. This patient had a more than 10-year history of diabetes mellitus and hypertension, which was kept under control by oral medication. She had no history of abdominal surgery or malignancy.

Her vital signs, checked on arrival at the emergency room, showed a normal heart and respiratory rate, and a normal body temperature. She had hypertension with a blood pressure reading of 163/127 mm Hg. Her blood sugar was at 322 mg/100 ml. Her lower abdomen exhibited mild tenderness. Laboratory results showed leukocytosis with a white blood cell count of 41380/mm³ and a left shift, anemia with a hemoglobin content of 9.6 g/100 ml, and marked elevated CRP. Her urinalysis revealed glucosuria, proteinuria, and bacteriuria. The emergent brain CT showed lacunar infarcts and brain atrophy. A plain abdominal film showed ileus and a curve of air in the pelvis (Fig. 1).
An abdominal CT without intravenous contrast media administration was performed. The CT scan revealed a markedly distended uterus with air and fluid in its cavity and mural air on its wall (Fig. 2, 3). Because of progressive dyspnea and hypotension, one day after admission, a total hysterectomy and bilateral salpingo-oophorectomy were performed to control the infection. A pathologic study showed pyometra, extensive endometrial necrotizing suppurative inflammation with variable myometrial involvement, and serosal inflammation of the bilateral ovaries and oviducts. The culture of blood sample taken in the emergency room yielded coagulase-negative Staphylococcus. The urine sample yielded Enterococcus faecalis. After surgery, pneumonia and a subcutaneous wound infection prolonged her admission. She was discharged in stable condition on the 19th day after surgery.

**DISCUSSION**

Pyometra is an uncommon gynecologic condition, which mainly occurs in postmenopausal women [1]. Pyometra is commonly idiopathic, and the sufferers are usually older and debilitated [1]. Only a few patients with pyometra present gynecologic symptoms such as vaginal discharge. Most patients only display non-specific symptoms such as abdominal pain, fever, and leukocytosis [1, 2]. For these patients, the correct diagnosis is usually not made until operation for the ruptured pyometra [2].

CT plays a role in evaluating patients with abdominal pain or a fever of unknown origin. Familiarity with the appearance of pyometra in a CT is helpful for early diagnosis and the reduction of mortality. Pyometra appears on the CT as a fluid-distended uterus, which should be carefully

![Figure 1. Plain Abdominal Film.](image1)

Plain abdominal film shows marked ileus and retained stool in the rectum. A curve of air in the pelvis is outlined with arrows (↑).

![Figure 2. Pelvic CT without Intravenous Contrast Media Administration.](image2)

These CT images were performed without intravenous contrast media administration. The rectum and distal colon were opacified by a water-soluble contrast media infused via the anus. The uterus, distended by air and fluid in its cavity and had mural air on its wall, is outlined with arrows (↑).

![Figure 3. Pelvic CT without Intravenous Contrast Media Administration.](image3)

A cranial view shows the urinary bladder with a rightward displacement, which is outlined with arrowheads (△). The dome of the uterine cavity with air bubbles on its wall is outlined with arrows (↑).
differentiated from a pelvic abscess [3]. Mural air in pyometra, just like that seen in emphysematous gastritis, cholecystitis, and cystitis, has not been previously reported. This condition is unique to pyometra. It can be differentiated from emphysematous cystitis by carefully checking the CT scan to determine which organs are involved.

REFERENCE

子宮蓄膿症表現出子宮壁上的氣體：病例報告

盧怡穎 范君凱

新竹國泰綜合醫院 放射科

子宮蓄膿症是指因嚴重的細菌感染，而導致膿液蓄積在子宮腔內的疾病。子宮蓄膿症通常發生在老年婦女。因為大部分的患者臨床症狀沒有特異性，在子宮蓄膿還沒有破掉造成腹膜炎而開刀之前，往往很難正確的診斷出來。以往的報告指出，此病症在電腦斷層影像的表現為一個漲大且充滿液體的子宮。現在我們在這裡報告的子宮蓄膿症的病例，在電腦斷層影像，除了漲大的子宮之外，還表現出了在子宮壁上的氣體，就像產氣性膀胱炎表現出在膀胱壁上的氣體一樣。這是一個在電腦斷層影像上有特異性，且以往沒有被報告過的特徵。