POLISH ARCHIVES OF
Internal Medicine
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Article type: Clinical image

Received: March 22, 2024.

Revision accepted: April 8, 2024.

Published online: April 24, 2024.

ISSN: 1897-9483

Pol Arch Intern Med.

doi:10.20452/pamw.16736

Abdominal actinomycosis as a rare cause of abdominal tumor mimicking incarcerated umbilical hernia

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A 35-year-old female patient was urgently admitted due to severe abdominal pain lasting for two days. Physical examination revealed an afflictive tumor localized within the umbilical region, mimicking incarcerated umbilical hernia. The patient underwent an abdominal ultrasound that demonstrated a 7.6cm x 4.3cm x 55cm heterogeneous hypoechogenic lesion, which may correspond with incarcerated abdominal hernia. Plain abdominal X-ray revealed no gas-fluid levels or free air beneath diaphragm (Figure 1A). Comprehensive blood test analysis showed an elevated CRP level (26.7 mg/l, reference range 0–5 mg/l) and WBC count

(10.77 x 10^3/µl, reference range 3.9–11 x 10^3/µl), while all other parameters fell within the normal range.

Anamnesis revealed a laser ablation of the uterine cervix. Patient had also undergone removal of an intrauterine contraceptive device (IUD) several months ago because of recurrent paronychia. She had no history of abdominal surgeries or any comorbidities.

The patient was qualified for urgent laparotomy. Intraoperatively, a tumor arising from the greater omentum was observed to infiltrate the parietal peritoneum in the umbilical region (Figure 1B). Resection of the omental tumor along with the adjacent parietal peritoneum was executed. Furthermore, examination of the abdominal cavity showed an enlarged uterus with a palpable tubercle. No other pathologies were detected, and no macroscopic abnormalities were noted in the liver. Due to nonspecific intraoperative findings, a postoperative computed tomography (CT) scan of the abdomen and pelvis was conducted to rule out any potential malignancies. The scan showed multiple enlarged lymph nodes along the right side of the uterus, within the pelvis, and in the small bowel mesentery. No other abnormalities were detected. The postoperative recovery was uneventful, and the patient was discharged three days after surgery. The histopathologic examination revealed abdominal actinomycosis (Figure 1C, D).

Actinomycosis is a rare, chronic disease caused by anaerobic Gram-positive bacteria [1]. The most common form of actinomycosis is orocervicofacial, comprising 50% of reported cases [2]. The abdominopelvic form represents up to 20% of actinomyces cases, usually as a result of complications associated with IUD use or previous gastrointestinal tract surgery [3]. Signs and symptoms of the disease are nonspecific, involving abdominal pain, fever, and weight loss. Consequently, its chronic progression may lead to infiltration of surrounding organs and the abdominal wall, mimicking the presence of a palpable tumor. In prolonged infections, painful tumors may be revealed, imitating inflammatory or neoplastic pathologies. Blood test

results often lack specificity, with mild anemia, leukocytosis, and other inflammatory markers being the main abnormalities typically ascertained. Similarly, there are no specific features for actinomycosis observed in imaging studies. Only 10% of abdominal actinomycosis is diagnosed preoperatively. Direct isolation of the pathogen is challenging and associated with over 50% of failure [2]. Histopathological examination of surgical specimens remains the most frequent source for reaching a final diagnosis. For the majority of symptomatic abdominopelvic actinomycosis cases, the recommended approach involves surgical removal of affected tissue in conjunction with long-term targeted antibiotic therapy, reflecting the management utilized in the presented case. This combined approach boasts a curative rate exceeding 90% [4].

Article information

Acknowledgments None.

Funding None.

Conflict of interest None.

How to cite Krokowicz L, Tomczak H, Majewski J, et al. Abdominal actinomycosis as a rare cause of abdominal tumor mimicking incarcerated umbilical hernia. Pol Arch Intern Med. 2024; XX: 16736. doi:10.20452/pamw.16736

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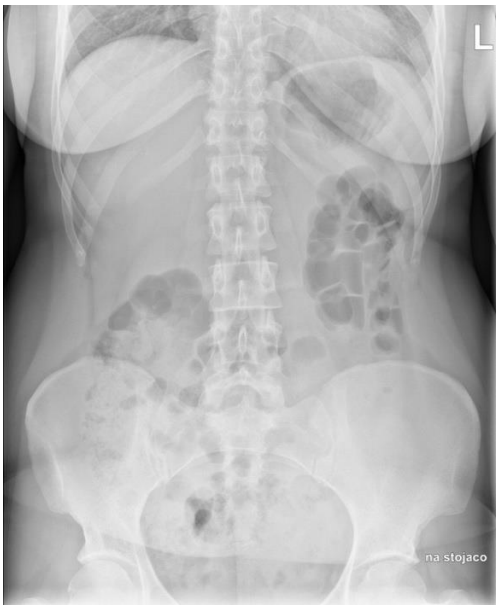

Figure 1A

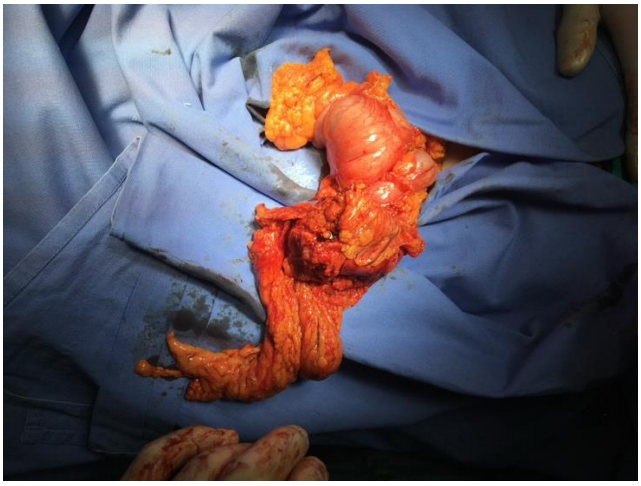

Figure 1B

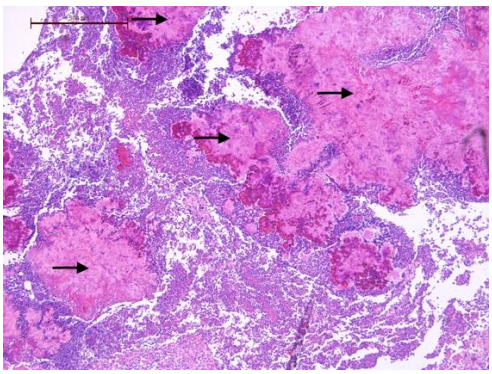

Figure 1C

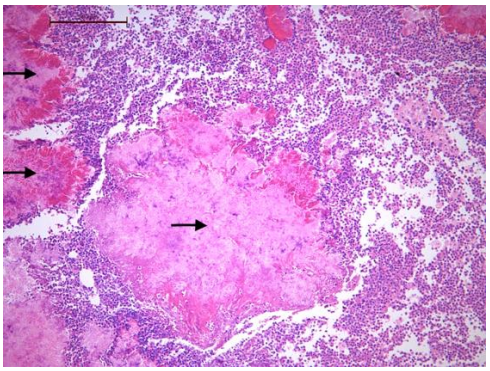

Figure 1D

Figure 1 A – Plain abdominal X-ray revealed no gas-fluid levels or free air beneath diaphragm; B – intraoperative photograph showing tumor arising from the greater omentum and infiltrating parietal peritoneum; C and D – microphotograph of actinomycosis; histopathological examination revealed actinomycosis colonies (Figure 1C, black arrow) (H&E, ×50) (Figure 1D, black arrow) (H&E, ×100)

Short title: Abdominal actinomycosis as an abdominal tumor