Minimally Invasive Techniques for Pre-Operative Diagnosis in Pelvic Actinomycosis

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Background

Pelvic actinomycosis is a rare, insidious chronic granulomatous disease that can be indistinguishable from abdominopelvic malignancies. Aggressive surgical resections are often undertaken with the presumption of a neoplastic process.

We present a case wherein the diagnosis of actinomycosis was established during workup for suspected peritoneal carcinomatosis, with subsequent successful treatment with antibiotics hence avoiding unnecessary extensive surgical resection.

Case Presentation

53-year-old Chinese lady with large bilateral pelvic masses presumed to arise from the right adnexae associated with extensive peritoneal disease demonstrated – a 12 cm omental mass in the left lower abdomen, peritoneal nodules in the pelvis and paracolic gutters. (Figure A) Coupled with an elevated CA-125 of 39.3 U/ml, the initial impression a possible ovarian or appendiceal neoplasm with peritoneal metastases.

Diagnostic laparoscopy was performed to assess the extent of disease and obtain histological confirmation of the diagnosis with a view for neoadjuvant systemic chemotherapy. Intraoperative findings were that of extensive omental caking over the left lower abdomen and midline, with the omental mass adherent to the anterior abdominal wall. (Figure B) Histologic assessment demonstrated dense inflammatory infiltrates with focal colonies of filamentous organisms and microbiology tests performed on the pus aspirated from the omental mass returned as Actinomyces israelii (Figure C).

Further history from the patient revealed that she had an intra-uterine contraceptive device in situ for 5 years which was recently removed. A Papanicolaou smear done after removal had also shown bacterial organisms suggestive of Actinomyces.

There remained a diagnostic dilemma wherein the histological sampling could have presented a false negative for malignancy and appropriate oncological treatment could be delayed.

Appropriate antibiotics were initiated and computed tomography of the abdomen and pelvis after a month of treatment showed only residual soft tissue thickening and a bulky uterus but no pelvic masses.

In recent literature, most cases had an erroneous initial impression of pelvic malignancy and diagnosed after surgery based on the post-operative histology of the resected specimen, which often included en-bloc resection of surrounding pelvic organs. Confirming the diagnosis of actinomycosis before performing major resection is uncommon – there have been less than ten cases reported of which only two discussed utility of laparoscopic biopsy.

Conclusion

Utilization of minimally invasive techniques for pre-operative diagnosis avoids the morbidity associated with radical surgery. This is pertinent in young nulliparous women to preserve fertility or those with significant comorbidities that preclude major surgery.

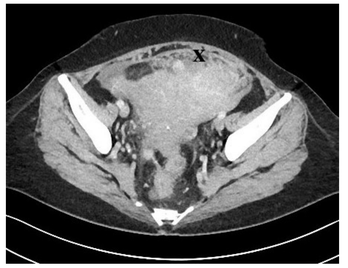


Figure A. Computed tomographic scan image demonstrating a left abdominal mass inseparable from the uterus with adjacent omental caking (x) and peritoneal thickening.

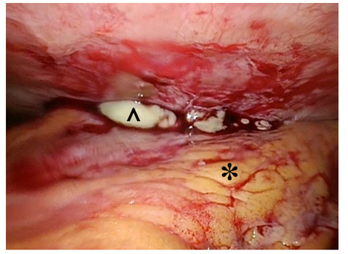


Figure B. Diagnostic laparoscopy showing the large omental cake (*) adhered to left anterior abdominal wall with contained abscess (^)

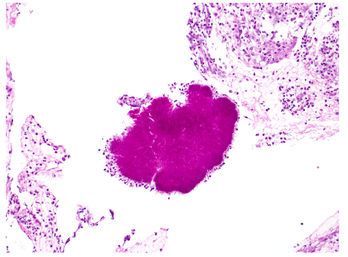


Figure C. Periodic acid–Schiff stain with diastase (PAS-D) stain at x 200 magnification highlighting the objects noted in the omental biopsy