

Case Report

Abdominopelvic Actinomycosis: Case Report

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Abstract

Pelvic actinomycosis is an uncommon clinical entity related to the long-standing use of an intrauterine device. Actinomycosis is a chronic bacterial infection that remains a clinical challenge, not only due to its low incidence rates, but also, as it is a nonspecific clinical presentation. It is defined by its infiltrative and invasive potential, being often mistaken with malignant conditions. Medical treatment is the gold standard whilst surgery is reserved only for complex cases with large abscesses and fistulas.

ABBREVIATIONS

IUD: Intrauterine Device; CT: Computed Tomography Scan

INTRODUCTION

Actinomyces infection is an uncommon chronic bacterial disease caused by Gram-positive, anaerobic non-spore-forming bacteria that colonize the oropharynx, digestive tract and female genital tract. Bacteria grow in filamentous clusters surrounded by polymorphonuclears in the presence of copatogens such as *preptostreptococcus*. Human being is the exclusive reservoir and there is no inter-person or person-to-animal transmission. It is considered an opportunistic disease, which occurs in immunocompetent patients due to the disruption of anatomical barriers that allows the access to deep tissues in contiguous way, producing an insidious infiltrative inflammatory process with formation of single or multiple abscesses surrounded by fibrotic granulation tissue, simulating a neoplasia [1-3]. The use of intrauterine devices (IUDs) is associated with a wide range of clinical presentations from asymptomatic colonization to severe cases of abdominopelvic infection. We present the case of a patient using an IUD for more than 8 years with a palpable abdominopelvic mass.

CASE PRESENTATION

A 44-year-old woman was admitted in emergency services for evaluation of a palpable mass located in the left lower abdominal quadrant. The patient reported occasional night sweats, with no fever or other systemic symptoms. Her medical history was unremarkable except the fact she had been an IUD carrier for the past 8 years.

Physical examination revealed an important erythema at left iliac fossa with an underlying 6-cm-solid mass. Gynaecological

exam was normal. Laboratory test exposed an elevated C-reactive protein (CRP 100.60 mg/L) and mild anaemia (Haemoglobin: 10.5 g/dL) (Figure 1).

Endovaginal ultrasound showed a 45-mm-calcified intramural myoma located in the uterine fundus, homogeneous endometrium and intracavitary IUD. Adnexa were normal.

The IUD was removed and vaginal discharge cultures and a Pap test sample were obtained, with no findings.

In abdominal ultrasound, a solid mass with an irregular outline of 55x48x20mm, profusely vascularised was observed.

The abdominopelvic computed tomography (CT) scan revealed an expansive tumoral process located in the pelvis, with several fistulous paths infiltrating the abdominal wall with a maximum diameter of 8 cm. This lesion seemed to affect the sigma. An implant of about 6.6x4 cm was identified in the left iliac fossa, which coincided with the abdominal palpable lesion (Figure 2).



Figure 1 Palpable mass raised on the left iliac fossa Cutaneous erythema. Top view.

Rectosigmoidoscopy was normal and tumour biomarkers were negative.

According to the findings, a neoplasia was suspected, so, leading to accomplish an optimal histological study, biopsy of the palpable abdominal mass was performed, and was found to be negative for malignancy.

The possibility of an infectious entity was assessed, so multiple aerobic/anaerobic and mycobacterial cultures were performed, all of which were negative.

The patient's clinical evolution worsened, presenting fever and abdominal pain, with negative blood cultures.

Facing the necessity of a definitive diagnosis, an exploratory laparoscopy was undertaken in order to assess the extension of the disease and to obtain samples for further histopathological study.

An inflammatory/tumour process located in the left iliac fossa with extension to the uterus, sigma and left ovary was described peroperatively. This lesion communicated with the abdominal wall through a fistulous path. Histologic study Gram stain of the surgical specimen identified a chronic inflammatory pattern with presence of abscesses containing oval eosinophilic granules (sulfur granules) and colonies of *Actinomyces sp.*, with no evidence of malignant tumour cells. Cultures were negative.

Therefore, given the diagnosis of abdominopelvic actinomycosis, treatment with penicillin G was established (initial dose of 5 million units every 6 hours, intravenously, for 6 weeks), followed by Amoxicillin 1gr. per day, orally, during 4 months, subject to the prescription.

Early outcomes were positive with a decrease in palpable abdominal mass.

Subsequent controls carried out by abdominopelvic CT with a complete disappearance of the lesion. (Figure 3, Figure 4).

DISCUSSION

The prevalence of infection caused by *Actinomyces sp.* in IUD carriers fluctuates from 1.6% to 11.6%. Colonization rates increase exponentially in IUD carriers for a period above 4 years. Cases of severe infection are rare and are associated with high index of morbidity and mortality [1,2,4-6].

The differential diagnosis should include perforated



Figure 2 Abdominopelvic CT scan showing left iliac fossa mass with solid and cystic areas involving uterus, sigma and left ovary. This lesion communicated with the abdominal wall through a fistulous path.

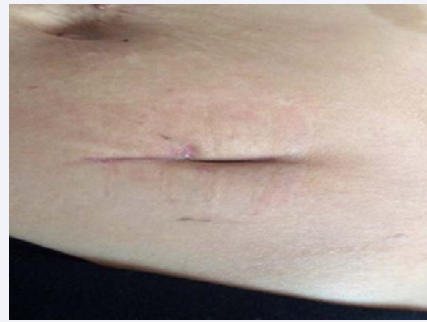


Figure 3 Resolution of inflammatory process after 6 weeks of antibiotic therapy. Enlarged image in left iliac fossa. Top view.



Figure 4 Abdominopelvic CT scan post-treatment. Full recovery.

diverticulitis, pelvic inflammatory disease, tuberculosis or inflammatory bowel disease as well as an eventual neoplasia [2,3,5-7].

Abdominal pain, presence of an abdominopelvic mass, eventually palpable, anorexia, leucorrhoea, fever, disturbances of intestinal transit are some of the unspecific symptoms. Leukocytosis with neutrophilia, elevation of acute phase reactants and anaemia can be found in laboratory test [2,5,7]. Performing CT imaging can help us at the differential diagnosis. The CT findings of our patient, an extensive infiltration pattern with the presence of fistula and abscesses, are common findings in patients with actinomycosis [2, 3,8,9].

The culture of *Actinomyces* is negative in up to 76% of cases and the presence of sulphur grains is only observed in up to 50% of them [8].

All these data lead to in a scarcity of initial suspicion, establishing preoperative diagnosis rates in less than 10% of the cases. Therefore, surgery is still necessary to accomplish a final diagnosis in most cases.

Long-term antibiotic treatment with Penicillin (regimen of 10-20 million U/day for 4-6 weeks followed by oral penicillin at doses of 30 mg/kg/day) is the first-line therapeutic approach. Severe and complicated cases need to be treated in association with surgical intervention, obtaining satisfactory results in more than 90% of cases. Surgical interventions are usually complex, so should be reserved only in cases with severe necrosis, large abscesses and persistent fistulas, or if malignancy cannot be dismissed. [1,2,5,8,9]. At the end of treatment, long-term follow-up is important to prevent relapses [2,3,6,8].

CONCLUSION

Abdominopelvic actinomycosis disease is a diagnostic challenge due to its low prevalence, the presence of unspecific signs and symptoms and the lack of suspicion during differential diagnosis.

Abdominal infection should be suspected in patients who are long-time carriers of IUD who present an expansive pelvic mass image mimicking other entities as inflammatory bowel disease, pelvic inflammatory disease or even a malignant neoplasm.

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