

## Abdominal Actinomycosis - A Case Report

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### Abstract

The purpose of this article is to report an unusual presentation of abdominal actinomycosis masquerading as a tumor. Abdominal actinomycosis is an extremely rare infection that can mimic multiple disease processes and requires accurate diagnosis for successful therapy. This novel presentation and a review of the literature are reported.

**Keywords:** Abdominal actinomycosis, Aetiology, Surgery

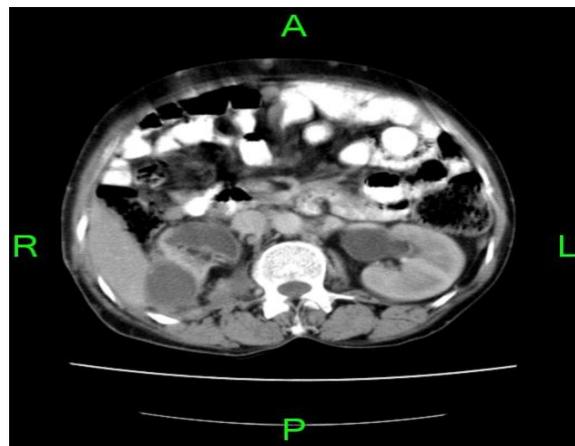
### Introduction

Actinomycosis is an anaerobic infection caused by actinomycetes. Prior disease or surgery predisposes to infection, and involved tissue becomes indurated and forms multiple draining fistulas discharging characteristic sulfur granules.<sup>1</sup> Actinomycosis has three major forms of clinical manifestations: cervicofacial, thoracic, and abdominal.<sup>1,2</sup> Although the incidence of actinomycosis has decreased, the abdominal-pelvic form has increased over the past 10 years and could be the result of prolonged use of intra-uterine device (IUD). The clinical spectrum and the management of actinomycosis have dramatically changed, so have the therapeutic considerations.<sup>3</sup> Histology of biopsy material demonstrates sulfur granules and filamentous gram-positive rods. Imaging studies help to know the extent of lesion and structures involved. The differential diagnosis includes cancer and other chronic infections.

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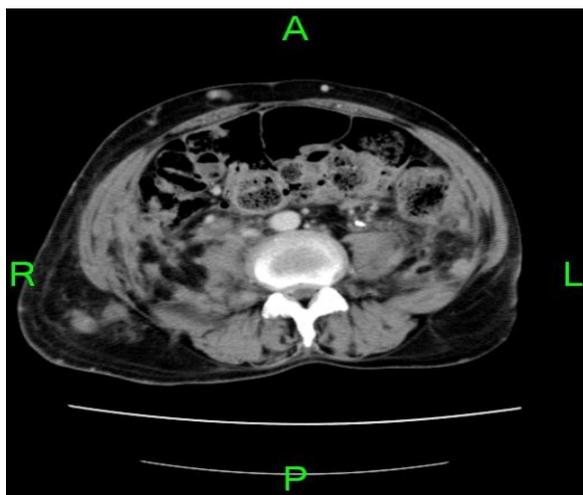
### Case report

A 55 year old female patient comes with complaints of mass per abdomen, high grade fever, vomiting and loss of weight from past



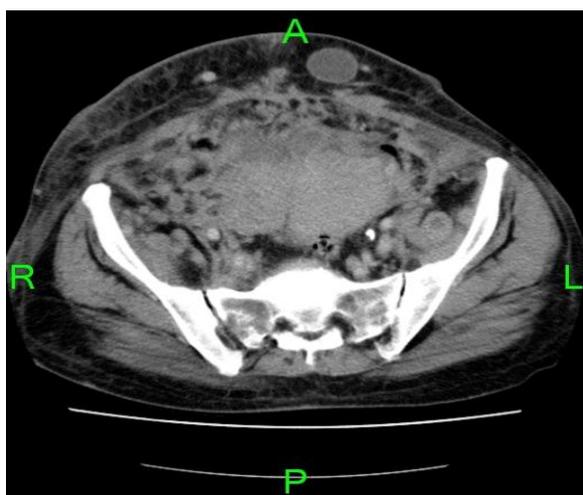
**Fig 1: A 55 year old female with CT showing bilateral hydronephrosis.**

one month with history of prior laprotomy sterilisation 18 years back, patient is not a known case of diabetes mellitus or hypertension. Presently on inspection two firm plaques noted in right iliac fossa region with pus discharging from them and the umbilicus also. The pus was sent for analysis and reports revealed sulphur granules in the pus and gram stain showing filamentous bacteria. CT was advised and revealed

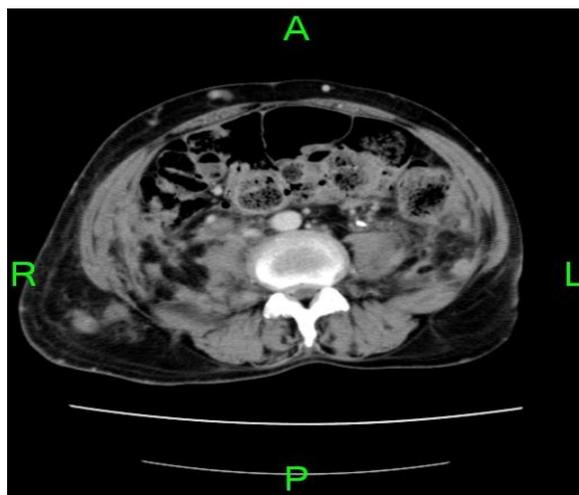


**Fig 2:** A 55 year old female patient with CT showing low density cystic lesions in the abdominal wall as well as in the peritoneal cavity.

bilateral moderate hydronephrosis (Fig 1) and multiple small to moderate sized (upto45mm) soft tissue density solid appearing nodular lesions and low density cystic lesions in the abdominal wall and the peritoneal cavity (Fig 2), few small fistulous tract were noted in the anterior abdominal wall in paraumbilical region (Fig 3), extensive stranding of subcutaneous and mesenteric fat is observed around the lesion (Fig 4).



**Fig 4:** A 55 year old female patient with CT image showing soft tissue density solid appearing nodular lesions and extensive stranding of the sub-cutaneous and mesenteric fat around the lesions.



**Fig 3:** A 55 year old female patient with CT image showing small fistulous tracts was noted in the anterior abdominal wall in the para-umbilical region.

## Discussion

Bradshaw first described a patient with abdominal actinomycosis in 1846 as reported by R.Berardi.<sup>10</sup> *Actinomyces Israelii* is the most prevalent organism of this genus found in humans.<sup>4</sup> It is a Gram-positive anaerobic bacterium which forms colonies recognizable by the appearance of characteristic sulfur granules. Such organisms produce a characteristic granulomatous inflammatory response, with pus production and abscess formation, followed by necrosis and extensive reactive fibrosis.<sup>5</sup> In recent years, females are more often affected: it probably results from a long term use of the IUD and endometrial colonization with *actinomyces Israelii*.<sup>3,6</sup> Three main clinical syndromes are described: cervicofacial, thoracic, and abdominal. In the abdominal form of actinomycosis, the most commonly affected organs are the appendix and caecum.<sup>7</sup> According to recent studies, it is believed that increased anaerobic pelvic infections due to foreign body reaction are responsible for the increased prevalence of actinomycosis in women with an IUD.<sup>3,9</sup> As the infection progresses, granulation tissue, fibrosis, multiple abscesses, and draining sinuses are formed where CT is helpful.

Clinical findings include pain, weight loss, anorexia, fever, chills, constipation, leucocytosis, palpable mass, or fistulizing sinus tract, fistulas. Actinomycosis often imitates a carcinoma, sarcoma, diverticular abscess, inflammatory bowel disease, or tuberculosis. A wood like mass and presence of small and multiple suppurative areas, as well as sinus tracts, are highly suspicious of abdominal actinomycosis. The well recognized sulfur granules are obtained from the pus.<sup>4</sup>

Radiological studies have not been very specific for preoperative diagnosis; however, CT seems to be the most helpful as a anterior abdominal mass with extension into adjacent organs and a fistula is highly suggestive of Actinomycosis.<sup>3,4,9</sup> In addition, CT scan allows percutaneous drainage of an actinomycotic abscess. Actinomycosis is sensitive to penicillin and majority of the patient can be cured by it.

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