

Case Report

Actinomycosis of male breast: a rare case report

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ABSTRACT

Actinomyces is a commensal of gastrointestinal and genital tract that may cause subacute or chronic granulomatous inflammation. Primary actinomycosis of breast is an extremely rare disease. It may present as a mass or as discharging fistulae. It is often diagnosed after biopsy. It may mimic inflammatory carcinoma or mastitis. Treatment is with a prolonged course of antibiotic. Authors present a case of a 70-year-old male with a palpable breast lump, that was suspected to be malignant. Wide local excision was performed, histopathology confirmed the diagnosis of actinomycosis breast. Patient was given antibiotics post operatively.

Keywords: Actinomycosis, Actinomycosis of breast, Actinomycosis israelii, Granulomatous inflammation

INTRODUCTION

Primary actinomycosis of breast is a rare disease, more so in men over women. Etiology in men include trauma, surgery, bite, and infection from thoracic cage. In women, lactation is an additional etiological factor. It usually presents as a recurrent abscess with fistulas. It may sometimes present as a breast lump, which is difficult to distinguish from inflammatory carcinoma. The diagnosis is made by histopathologic examination of the specimen, in which authors can see the characteristic sulfur granules representing the bacterial colonies. Actinomycosis is an anaerobic gram positive bacteria that is a commensal of the oral cavity, gastrointestinal and genital tracts.¹ Actinomycosis may mimic malignancy, tuberculosis or other infections like nocardiosis, and leads to formation of a cold abscess.² Prolonged antibiotic therapy with penicillin is the treatment of choice.³

CASE REPORT

A 70-year-old male presented with complaints of lump in right breast since 7 years. Patient gave history of bite at

the same site, following which lump developed. History of blood-stained discharge from skin over the lump since 5-6 months on and off. Lump gradually increased in size over the past 7 years. No history of lump in opposite breast. No history of fever, cough, breathlessness, weight loss, pain in abdomen, backache or seizures. No history of tuberculosis or tuberculosis contact.

On examination, 6 × 3 × 7 cm (approximately) irregular mass palpable in right breast, in retro areolar location and upper inner quadrant, with extension into lower inner quadrant and upper outer quadrant. The mass was firm in consistency, fixed to underlying muscle but not to the chest wall. Overlying skin was irregular with no active discharge. There were no palpable axillary or other lymph nodes in the body. Opposite breast was normal on examination. Per abdomen was soft, non-tender, no evidence of organomegaly. Cardiovascular and respiratory systems were normal on examination.

MRI thorax was done, a heterogeneously enhancing altered signal intensity soft tissue lesion measuring 7 × 2.1 × 8 cm (TR × AP × CC) noted in right chest wall in

retro areolar region in medial quadrant of right breast. It appeared hypointense on T1W and hyperintense on FIESTA. Inferiorly the lesion was abutting the medial portion of right pectoralis major muscle with loss of fat planes. No evidence of underlying bony erosions. Retraction of nipple with skin irregularity seen. Few non necrotic sub centimeter lymph nodes noted in right axilla.

Ultrasound abdomen was normal. Chest X-ray was normal. X-ray dorso-lumbar spine was suggestive of degenerative changes without any osteolytic or osteoblastic lesions.

Tru cut biopsy was done, suggestive of chronic nonspecific inflammatory tissue. Decision was taken to do a wide local excision to confirm diagnosis of suspected malignancy, before proceeding with a radical surgery.

A wide local excision of mass including nipple areolar complex with skin grafting from thigh was done and sample was sent for histopathology as well as for PCR Gene Xpert for *Mycobacterium tuberculosis*.

Histopathology revealed actinomycotic colonies surrounded by dense neutrophilic infiltrate. Areas of fibrosis, foreign body type of giant cells and macrophages are also seen. Sinus tract was seen in the lump with overlying skin showing mild acanthosis, increase in pigmentation of basal layer and perivascular lymphohistocytic infiltrate. Deep dermis showed areas of hemorrhage and fibrosis along with lymphoid aggregates admixed with histocytes. No evidence of epithelioid cell granuloma or caseation. There was no evidence of atypia or malignancy. PCR Gene Xpert was negative for *Mycobacterium Tuberculosis*.

Patient was given injectable clindamycin for two weeks and discharged.



Figure 1: Pre-operative picture of right breast actinomycosis presenting as lump.



Figure 2: Post-operative picture after wide local excision and skin grafting.



Figure 3: Post-operative picture taken on day 10.

DISCUSSION

Actinomycosis is a granulomatous inflammation caused by *A. israelii*.⁴

Etiological factors include trauma, surgery, lactation and kissing. Secondary actinomycosis of breast can occur from a spread from pulmonary infection spreading through thoracic cage. Most of the reported cases of primary actinomycosis of the breast were caused by *A. israelii*, although *A. bovis* was reported in one case.⁵

A. viscosus was reported in a 27-year-old female that did not respond to antibiotics but to surgical excision without any recurrence for 6 years.⁶

Other rare causative organisms include *A. turicensis* and *A. radingae*.⁷

Actinomycosis most commonly presents as a recurrent abscess with fistulas. Rare presentation may be as a breast lump mimicking inflammatory carcinoma.

Rarely, it has been reported to clinically resemble malignancy.⁸ It has also been seen in the accessory breast, infected mammary prosthesis and case of male breast actinomycosis in an HIV positive patient who had undergone reduction mammoplasty for gynecomastia in the past.⁹⁻¹¹

The diagnosis is made on histopathologic examination of the biopsy showing the characteristic sulfur granules. Gram stain aids in diagnosis, cytology can help rule out malignancy.

Penicillin is the antibiotic of choice. Tetracyclines and Macrolides are other alternatives. Abscess may require drainage. Surgical treatment may be needed for systemic involvement.

CONCLUSION

Actinomycosis of the breast is an extremely rare disease, more so in males. Diagnosis is by Histopathology and culture. It is amenable to a prolonged course of antibiotics. In cases that don't respond to antibiotics, surgical excision may be performed.

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