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## Background

Idiopathic granulomatous mastitis (IGM) is an inflammatory disorder of the breast which causes reduced quality of life due to its local aggressiveness. IGM can present as mastalgia, abscess, fistula or sinus formation. Breast abscess and malignancy need to be ruled out. Definite diagnosis requires histopathological examination and cultures to rule out infection. Predisposing factors include (i) hyperprolactinemia or oral contraceptive use leading to secretion retention in the breast duct; (ii) trauma or breastfeeding leading to injury of ductal epithelial cells. This then causes local inflammation in the mesenchyme, leading to delayed-type hypersensitivity and granuloma formation<sup>1</sup>. IGM can be associated with autoimmune diseases such as systemic lupus erythematosus, Sjogren's syndrome<sup>2</sup>, sarcoidosis and IgG4-related disease<sup>3</sup>. IGM usually occurs in the Mediterranean region and developing Asian countries<sup>1</sup>. Symptoms may respond to aspiration and drainage, while some patients require systemic immunosuppression.

## Methods

Retrospective case series of idiopathic granulomatous mastitis cases from February 2022 to 10 April 2025 were reviewed in a single tertiary centre (Singapore General Hospital). Demographics and clinical data were reviewed.

## Results

Six cases were diagnosed and managed collaboratively between breast surgeon, infectious disease physician and rheumatologists (Table). No patient had prior smoking history or antecedent breast trauma. Patients ranged from 32 to 44 years-old, all were premenopausal and 1 was nulliparous. Five patients who reported history of breastfeeding presented at least 12 months following lactation. All patients presented with unilateral, painful, palpable breast mass. Only 1 patient had wound culture associated with *corynebacterium* species. None of the patients had an underlying autoimmune disease. All of the 5 patients started on immunosuppression received corticosteroids but only 2 proceeded to require methotrexate due to poorly healing wounds.

## Conclusion

Traditional approach to treatment of IGM includes surgical aspiration and/or excision<sup>4</sup>, culture-directed antibiotics or empiric antibiotics<sup>4</sup> and immunosuppression with corticosteroids<sup>4</sup> or immune modulators such as methotrexate, azathioprine, and tumor necrosis factor inhibitors<sup>2</sup> if non-resolving. There is no defined treatment guideline due to the heterogeneity and rarity of the disease.

Patient	Age (years), ethnicity	Parity	History of breastfeeding	Disease duration (months)	Prior Medications	Culture results	Antibiotic therapy	Surgery	Histology	Presence of autoimmune disease or hyperprolactinemia	Prednisolone or DMARD initiation
1	36, Chinese	G3P2	Y, stopped 1 year before symptom onset	42	N	Nil	Empiric Amoxicillin-clavulanic acid, clindamycin, ciprofloxacin	Biopsy	Non-caseating granulomas	None	Prednisolone 10mg weaning, methotrexate (intolerant <sup>§</sup> ), Azathioprine
2	44, Chinese	G1P1	Y, stopped 1 year before symptoms onset	10	N	Nil	Empiric Amoxicillin-clavulanate	Biopsy	Non caseating granulomatous inflammation featuring aggregates of epithelioid histiocytes, multinucleated giant cells, lymphocytes, plasma cells and histiocytes.	None	Prednisolone 40mg weaning
3	32*, Chinese	G2P2	Y, pregnant at time of symptom onset (3 <sup>rd</sup> trimester)	10	N	Nil	Empiric amoxicillin- clavulanic acid, ciprofloxacin	Biopsy	Cystic neutrophilic granulomatous mastitis	None	Prednisolone 10mg weaning
4	33, Chinese	G1P1	Y, stopped breastfeeding 2 years before symptom onset	8	Clomiphene and inositol	Nil	Empiric amoxicillin-clavulanic acid, ciprofloxacin	Biopsy, drainage	Cystic neutrophilic granulomatous mastitis	None	Prednisolone 10mg weaning
5	36, Chinese	G2P2	Y, stopped breastfeeding 1 year before symptom onset	6	N	Nil	Empiric amoxicillin-clavulanic acid, doxycycline, levofloxacin	Biopsy	Acute-on-chronic periductal mastitis with granuloma formation	None	Prednisolone 20mg weaning, Methotrexate
6	37, Chinese	G2P0	N	2	N	Corynebacterium amycolatum	Empiric ciprofloxacin Culture directed doxycycline	Biopsy and drainage	Cystic neutrophilic granulomatousmastitis	Mild hyperprolactinemia	Nil

\*Pregnant at time of diagnosis (Third trimester). <sup>§</sup>Elevated alanine and aspartate transaminase.

## References

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