Oncoplastic surgery as adjuvant treatment in the management of patients with tuberculous granulomatous mastitis

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BACKGROUND

Chronic granulomatous tuberculous mastitis (CGTBM), first described by Sir Astley Cooper in 1829, is an extrapulmonary form of tuberculosis (TB) (1, 2).

CGTBM is a rare disease that accounts for less than 1% of all cases of tuberculosis.

The treatment of choice for CGTBM cases is the pharmacological scheme for extrapulmonary tuberculosis, with surgical treatment reserved as adjuvant therapy for those failing to TB drugs and those with relapses.

Surgical standard treatment includes draining the abscess, wounds' debriding, cleaning ulcerations and removing materials such as breast implants and the granuloma itself (3).

In our experience, the standard surgical treatment for CGTBM often produces unaesthetic outcomes, with unnecessary mammary glands removal and high rates of discomfort among patients.

Oncoplastic surgery indication should vary based on the size of the tumor, its location and the size of the patient's breast (4), but certainly can benefit most patients MCGTB by avoiding anesthetic and deforming surgeries.

OBJECTIVE

To evaluate the efficacy and safety of oncoplastic surgery as adjuvant treatment to pharmacological treatment in patients with chronic granulomatous tuberculous mastitis.

METHODS

We use a retrospective cohort study design and assess every case of CGTBM treated during the 2005-2017 period at the Grau Hospital, which is one of the leading hospitals treating CGTBM patients at the social security system EsSalud in Peru, excluding only cases that also tested for inflammatory carcinoma or were breastfeeding at the time of surgery.

During the study period we treat CGTBM patients using with standard nine-months extrapulmonary TB treatment, and for those eligible also oncoplastic surgery since 2010.

To compare both treatment outcomes, we use as study outcomes their recurrence rates, corticosteroids use, and safety (defined as any wound, bleeding or wound complication) during the first two years of follow up since starting the nine months standard anti TB drug therapy for extrapulmonary TB.

RESULTS

We analyzed a total of 116 cases of CGTBM. Patients' age ranged from 19 to 80 years old, and most of them were female (99%), natural from Lima (79%), tested negative to PPD (91%) and have a negative history of pulmonary TB (91%).

Most CGTBM were located at the right breast (72%), in the upper external quadrant (75%), and classified as BI-RADS III by ultrasonography (91%). The most frequent lesion sizes ranged from 5cm to 8cm (40%), followed by lesions larger than 2cm and smaller than 5cm (28%)

Most patients belong to the cohort of patients treated with standard drug therapy for extrapulmonary TB treatment plus oncoplastic surgery (58%), while the rest belong to the cohort treated with standard drug therapy for extrapulmonary TB treatment alone.

The most frequent oncoplastic surgical patterns used were lateral (49%) and horizontal (27%).

During the follow-up we did not found difference between both cohorts neither in terms of recurrence rate (0% vs 2%; p-value = 0.2402) or corticosteroids use rate (0% vs 2%; p-value = 0.2402).

We did not report any severe adverse event in both arms of the study.

Table 1. General characteristics of the study population

Feature	Without Oncoplastic Surgery	With Oncoplastic surgery	Total
	Mean ± SD	Mean ± SD	Mean ± SD
Age	36,4 ± 10,1	35 ± 8,3	35,6 ± 9,1
Disease time	4,0 ± 2,3	3,9 ± 2,2	3,9 ± 2,2
	N (%)	N (%)	N (%)
Period*			
2005-2009	11 (22,5)	0 (0,0)	11 (9,5)
2010-2013	23 (46,9)	24 (35,8)	47 (40,5)
2014-2017	15 (30,6)	43 (64,2)	58 (50,0)
Gender			
Male	1 (2,0)	0 (0,0)	1 (0,9)
Female	48 (97,9)	67 (100,0)	115 (99,1)
Occupation			
Housewife	16 (32,7)	17 (25,4)	33 (28,5)
Teacher	9 (18,4)	10 (14,9)	19 (16,4)
Health personnel	10 (20,4)	13 (19,4)	23 (19,8)
Independent	14 (28,6)	27 (40,3)	41 (35,3)
Origin			
Provinces	7 (14,3)	17 (25,4)	24 (20,7)
Lima	42 (85,7)	50 (74,6)	92 (79,3)
Pathological background			
Negative	43 (87,8)	63 (94,0)	106 (91,4)
Positive	6 (12,2)	4 (6,0)	10 (8,6)
Family background			
Negative	43 (87,8)	62 (92,5)	105 (90,5)
Positive	6 (12,2)	5 (7,5)	11 (9,5)
Laterality			
Right	39 (79,6)	44 (65,7)	83 (71,6)
Left	9 (18,4)	21 (31,3)	30 (25,9)
Bilateral	1 (2,0)	2 (3,0)	3 (2,6)
Quadrant			
Superior External	42 (85,7)	45 (67,2)	87 (75,0)
Superior Internal	2 (4,1)	16 (23,9)	18 (15,5)
Lower External	5 (10,2)	5 (7,5)	10 (8,6)
Lower Internel	0 (0,0)	1 (1,5)	1 (0,9)

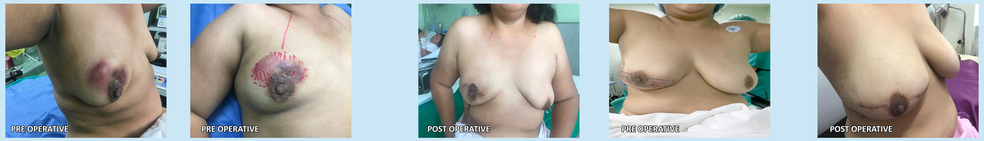
Table 2. Characteristics of the diagnosis of tuberculosis in the study population

Feature	Without Oncoplastic Surgery	With Oncoplastic surgery	Total
BIRADS (>40 years old)	15 (30,6)	19 (28,4)	34 (29,3)
BIRADS 1 -2	2 (13,3)	14 (73,7)	16 (47,1)
BIRADS 3 -4	13 (86,7)	5 (26,3)	18 (52,9)
Ultrasound diagnosis			
BIRADS 3	44 (89,8)	62 (92,5)	106 (91,4)
BIRADS 4	5 (10,2)	5 (7,5)	10 (8,6)
PPD			
Anergy (0 mm)	43 (87,8)	63 (94,0)	106 (91,4)
Doubtfu (1-4 mm)	6 (12,2)	4 (6,0)	10 (8,6)
BK in sputum			
Negative	47 (95,9)	67 (100,0)	114 (98,3)
Positive	2 (4,1)	0 (0,0)	2 (1,7)
X-ray of Thorax			
Negative	47 (95,9)	65 (97,0)	112 (96,55)
Positive	2 (4,1)	2 (3,0)	4 (3,45)
Pathological anatomy			
Negative	1 (2,0)	0 (0,0)	1 (0,9)
Positive	48 (98,0)	67 (100,0)	115 (99,1)
BK in culture			
Negative	46 (93,9)	64 (95,5)	110 (94,8)
Positive	3 (6,1)	3 (4,5)	6 (5,2)
PCR in biopsy			
It was not done	45 (91,8)	62 (92,5)	107 (92,2)
Negative	1 (2,0)	2 (3,0)	3 (2,6)
Positive	3 (6,1)	3 (4,5)	6 (5,1)
MDR tuberculosis			
Negative	48 (98,0)	66 (98,5)	114 (98,3)
Positive	1 (2,)	1 (1,5)	2 (1,7)

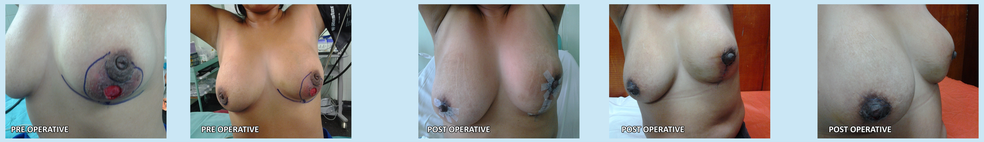
MDR, Multidrug-resistant; PPD, Tuberculin test, PCR, polymerase chain reaction test

LATERAL MAMMOPLASTY

HORIZONTAL MAMMOPLASTY



VERTICAL MAMMOPLASTY



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CONCLUSIONS

Oncoplastic surgery plus extrapulmonary TB treatment seems as effective and safe as the extrapulmonary TB treatment alone. However, it is necessary randomized controlled clinical trials will be needed to support this observation.

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