



Aesthetic results of breast reconstructive surgeries: results of three methods of evaluation



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Introduction

- Oncoplastic surgery:
 - aesthetic outcomes
 - oncological safety
 - temporal variation

Freitas-Junior R, et al. *J Surg Oncol* 2017.
Clough KB, et al. *Ann Surg.* 2017.

- Evaluating the aesthetic results?
 - Many subjective and objective methods...



Objective

The aim of the study was to compare three methods of evaluation the results of breast reconstructive surgeries, among different professionals.

Methods

- Photos of 270 patients with breast cancer submitted to some kind of breast reconstruction were included;
 - Period: 2015 – 2016;
- Evaluation:
 - modified Garbay scale
 - Harvard scale
 - Objective software BCCT.core
- Exclusion: local recurrence and temporary expanders.

Methods

- Means, standard deviations, median, interquartile ranges;
- Cohen's Kappa and Spearman correlation indexes;
- Software SPSS, version 15.0;
- Confidence interval (CI) of 95%, and statistical significance when $P < 0.05$.

Modified Garbay Scale

Variable / Pontuation	0 points	1 point	2 points
Volume of breast	Marked discrepancy relative to contralateral side	Mild discrepancy relative to contralateral side	Symmetrical volume
Shape of breast	Marked contour deformity or shape asymmetry	Mild contour deformity or shape asymmetry	Natural or symmetrical contour
Placement of breast	Marked displacement	Mild displacement	Symmetrical and aesthetic placement
Inframammary fold	Poorly defined / not identified	Defined, but with asymmetry	Definid and symmetrical
Breast scars	Poor (hypertrophy, contracture)	Fair (wide scars, poor color match, but without hypertrophy or contracture)	Good (thin scars, good color match)

Urban C. Rietjens M (eds). Milan: Springer, 2013.

Harvard Scale

Category	Results
Excellent	Treated breast nearly identical to untreated breast
Good	Treated breast slightly different than untreated breast
Fair	Treated breast clearly different from untreated breast, but not seriously distorted
Poor	Treated breast seriously distorted

Rose MA, et al. *Arch Surg* 1989;124:153-7.



Cardoso MJ, et al. *Comput Methods Programs Biomed* 2016;126:154-9.

Results

- Follow-up: 63.7 (\pm 45.6) months.
- Mean age: 55.7 (\pm 11.1) years.

	Mean	(\pm SD)	n	(%)
Characteristics of the disease				
Size (mm)	34,5	23,5		
EC				
0			7	2,7
I			81	31,5
II			120	46,7
III			46	17,9
IV			3	1,2

Results

	Mean	(\pm SD)	n	(%)
Treatment characteristics				
Local recurrence			9	3,3
Metastasis			6	2,2
Partial reconstruction			145	53,7
Immediate reconstruction			253	94%
Contralateral breast symmetrization			132	48,9
Reconstruction of the areolopapillary complex			55	45,8

Results

- Interobserver variability of the Harvard scale.

HARVARD SCALE	Kappa	IC (95%)
Mastologists	0,35	0,32-0,38
Plastic surgeons	0,27	0,19-0,34
Psychologist	0,23	0,14-0,32
Mastologists and Plastic surgeons	0,28	0,26-0,29
Mastologists and Psychologist	0,33	0,31-0,35
Plastic surgeons and Psychologist	0,17	0,14-0,20
All professionals	0,27	0,26-0,29

Results

- Interobserver variability of the Modified Garbay scale.

ESCALA DE GARBAY	Kappa	IC (95%)
Mastologists	0,13	0,11-0,15
Plastic surgeons	0,16	0,10-0,22
Psychologist	0,16	0,09-0,22
Mastologists and Plastic surgeons	0,12	0,11-0,13
Mastologists and Psychologist	0,14	0,12-0,15
Plastic surgeons and Psychologist	0,10	0,08-0,12
All professionals	0,12	0,11-0,13

Results

- Modified Garbay scale – means of evaluation and correlation whit the BCCT.core.

	Média (+ SD)	IC 95%	Rho BCCT	(IC 95%)
Senior mastologist	7,16 (\pm 1,93)	6,92-7,39	0,58	0,47-0,67
Junior mastologist	7,37 (\pm 2,68)	7,05-7,69	0,51	0,39-0,60
R2 mastologist	7,04 (\pm 1,74)	6,83-7,25	0,46	0,36-0,57
R1 mastologist	7,07 (\pm 2,27)	6,8-7,35	0,42	0,31-0,53
Senior plastic surgeon	5,68 (\pm 2,49)	5,38-5,98	0,41	0,31-0,53
Resident plastic surgeon	6,36 (\pm 2,08)	6,11-6,61	0,49	0,40-0,61
Senior psychologist	6,66 (\pm 2,34)	6,38-6,94	0,48	0,37-0,59
Junior psychologist	7,47 (\pm 1,71)	7,27-7,67	0,37	0,29-0,51

Results

- Correlation between the scores on the Harvard scale by professionals and the BCCT.core program.

Frequency (%)	Poor		Fair		good		Excellent		Rho BCCT	IC95%
	n	%	n	%	n	%	n	%		
Senior mastologist	13	4,8	82	30,4	115	42,6	60	22,2	0,61	0,51-0,70
Junior mastologist	38	14,1	59	21,9	91	33,7	82	30,4	0,49	0,39-0,60
R2 mastologist	24	8,9	97	35,9	86	31,9	63	23,3	0,5	0,38-0,59
R1 mastologist	25	9,3	88	32,6	63	23,3	94	34,8	0,42	0,32-0,53
Senior plastic surgeon	42	15,6	98	36,3	80	29,6	50	18,5	0,48	0,38-0,59
Resident plastic surgeon	114	42,2	65	24,1	68	25,2	23	8,5	0,48	0,38-0,59
Senior psychologist	22	8,1	74	27,4	120	44,4	54	20,0	0,54	0,42-0,63
Junior psychologist	8	3,0	37	13,7	116	43,0	109	40,4	0,39	0,29-0,51
BCCT.core	18	6,7	77	28,5	144	53,3	31	11,5	1	-

Conclusion

- Both the modified Garbay scale and the Harvard scale correlate moderately with the objective test (BCCT.core).
- The Harvard scale has less interobserver variability in comparison to the modified Garbay scale.