



LEIDS UNIVERSITAIR MEDISCH CENTRUM

"Concept and management of seroma in breast cancer surgery".

Gerrit Jan Liefers



Breast Cancer Res Treat

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EPIDEMIOLOGY

Postoperative complications and survival of elderly breast cancer patients: a FOCUS study analysis

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RESEARCH ARTICLE

Open Access

Breast cancer surgery in elderly patients: postoperative complications and survival

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Introduction

In developed countries, 40% of breast cancer patients are older than 65 years of age at diagnosis and this percentage is increasing [1]. Old age is predictive for comorbidity and decreased functioning [2,3]. Therefore, these factors might influence treatment decisions in elderly breast cancer patients. Previous studies have shown that elderly breast cancer patients receive less aggressive treatment [4] and have a higher disease-specific mortality, even with 65% of breast cancer patients above 75 years dying from other causes than breast cancer [5].



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This suggests that patients might be undertreated due to fear of morbidity and mortality in breast cancer surgery. Although elderly patients with comorbidity do have a higher risk of postoperative complications, relative mortality was not higher in this group and therefore suggests that omitting surgery because of fear for treatment-related mortality is only justified in vulnerable elderly patients.



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However, in Italy, elderly patients receive less surgery and more hormonal therapy as monotherapy than younger patients, even in lower stages of disease [4].

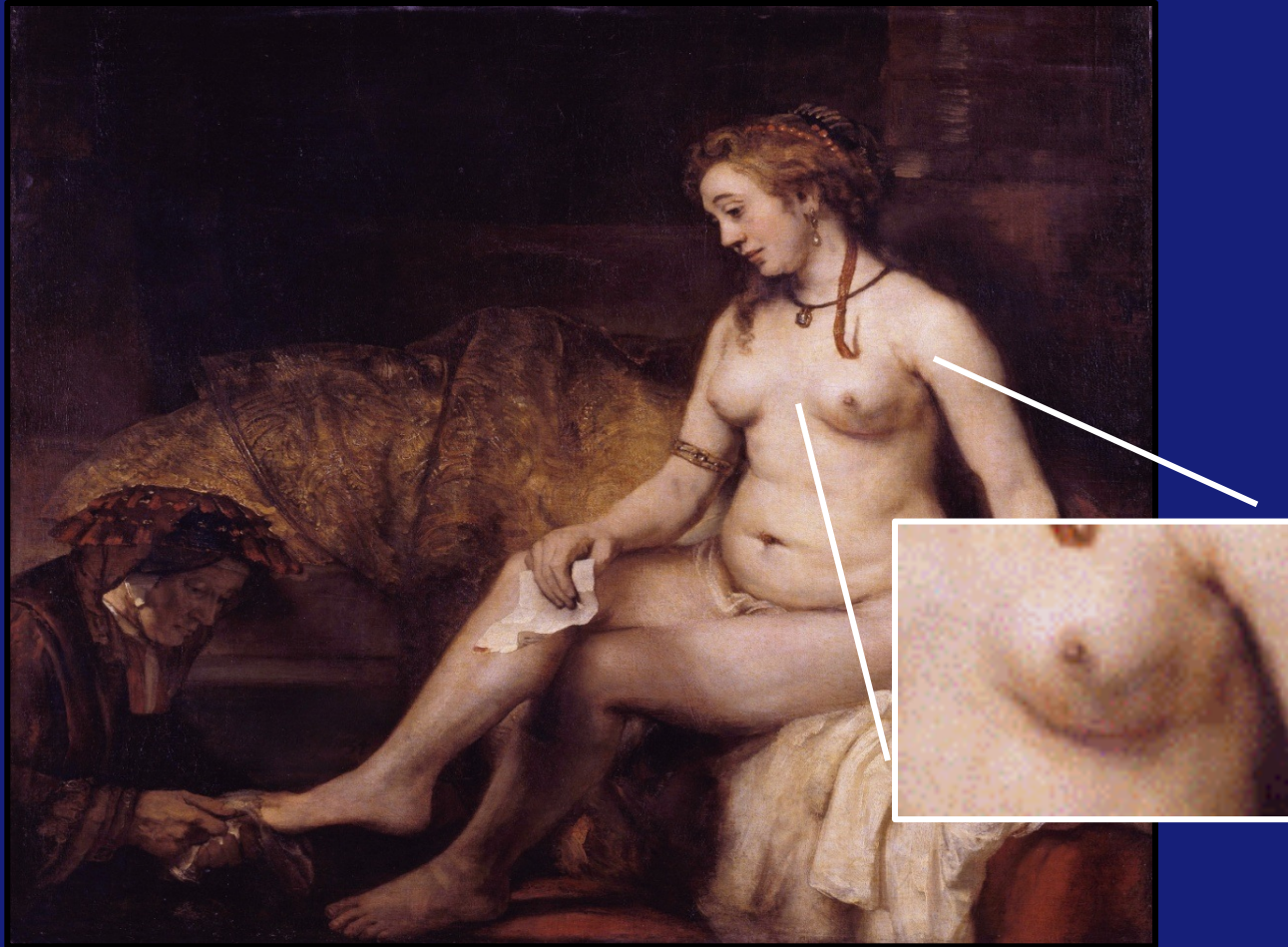
women [22]. However, in the Netherlands, elderly patients receive less surgery and more hormonal therapy as monotherapy than younger patients, even in lower stages of disease [4]. This suggests that patients might be undertreated

Concept and management of seroma in breast cancer surgery.



Batseba and the letter from David





Rembrandt van Rijn.

Breast Cancer



198

Latus deo Ady Primo Julio 1663 In Amsterdam

Bidruer et d'ontinne van dander 1663

4	gracht d'wel	achtlingwaal	10: 13
5	kleint van Jacob Lassie	geeldmunt	5: 7
10	Jansz van Stgardout	dywyl graaf	10: 13
11	ceesje lamboel	gingst	10: 13
12	kleint van willem doede	leuwingraaf	5: 7
12	willem adraam's hoed	woudgraaf	10: 13
13	kleint van Lambert Gunningster	kynggraaf	5: 7
14	amundong's milcoore	roefgraaf	10: 13
19	Jacob de witte	deantgraaf	10: 13
20	adragam van woerdkamp	roef	8
21	Jogambel van wemo kleint	dyngdame	4
23	kleint van wido Gouder	gingst	5: 7
24	Gondricke's wafel	roefgraaf	10: 13
25	godenik van goden kleint	roefgraaf	4
26	kleint van willem van roeft	widwink	4
27	felroer Gommosen kleint	deantgraaf	5: 7
28	Jara kants	deantgraaf	10: 13
28	dwardt minoffen	geitlingwaal	10: 13
30	raote hie pende	roefgraaf	10: 13
31	dynde van wylhet kleint	widwink	5: 7
	Lambert de segeer	voelgraaf	5: 7

163 19

augusto 1663

3	richer peret kleint	lingwaal	5: 7
	valcine woldruer	deantgraaf	10: 13
		geitlingwaal	5: 7
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		geetgraaf	5: 7
		deantgraaf	5: 7
		deantgraaf	8
		roefwink	5: 7
		deantgraaf	10: 13
10	maria lull	deantgraaf	10: 13
20	Jacob doe kleint kleint	peringwaal	5: 7
21	kleint van Cornelis Gommosen	roefgraaf	5: 7
	Gelonder Gouder	roefgraaf	10: 13
22	Gijma Gouder	roefgraaf	8
	Barbara Gouder	roefgraaf	10: 13
27	Johann Gouder	deantgraaf	8

124 1

939 12

24 Gondricke's wafel roefgraaf 10: 13: -

BMI

Extend of surgery

Drainage

Surgical technique

Sentinel LN biopsy

Suture fixation

Postpone active shoulder exercise

Surgical technique

Asymptomatic

Pain

Infection

Prolonged wound healing

Level of evidence

Table 1
Risk factors per level of evidence.

Grade	Direction of association		
	Increase	No association	Decrease
Level 1	none	none	none
Level 2	Body weight extended radical mastectomy	Duration of drainage Immobilization of the shoulder LN status Intensity of negative suction Use of fibrinolysis inhibitor Number of LN's	Sentinel LN biopsy Suction drainage Octreotide use
Level 3	Hypertension Multiple holes type drains No drainage Operation time Use of electrocautery	Use of adhesive glue Use of laser scalpel Use of argon diathermy Use of pressure garment Breast size Diabetes mellitus Smoking Neoadjuvant therapy	Suture fixation techniques Use of ultrasonic scissors Use of electrothermal bipolar vessel system Extent of dissection Postponed active shoulder exercise Tetracycline sclerotherapy
Level 4	none	Age Tumour Size Total drainage volume	none

dead space fixation

wound dressing
fibrin glue
sutures (quilting)

Suction drainage

Surgical technique

Shoulder immobilisation

Octreotide/ tetracycline/ Bovine thrombine

1992	3d vs 6d POD	NS
1998	drain vs no drain	8,3 vs 50%
2001	5d vs 8d POD	48 vs 28%
2005	drain vs no drain	94 vs 96%
2005	short vs long drain	76 vs 64%
2005	half vs full vacuum	2,8 vs 4%

1993	glue vs none	64 vs 53%
1998	glue vs none	2 vs 1.7%
2001	glue vs none	39 vs 42%
2003	glue vs none	4 vs 3%
2005	glue vs drainage	36 vs 45%

1979	7d immobil. vs 2d exercise	7 vs 20%
1990	Exercise 1d vs 8 d POD	not sign.
1996	10d immobil. vs none	31 vs 43%

Max no. of patients	375
Variation of seroma	1.7 vs 96%
Definitions	
PROM's	

Dead space after mastectomy

Rows of running sutures

with or without drainage

Retrospective study

119 patients undergoing mastectomy

quilting vs conventional closure (drain)

propensity score analysis

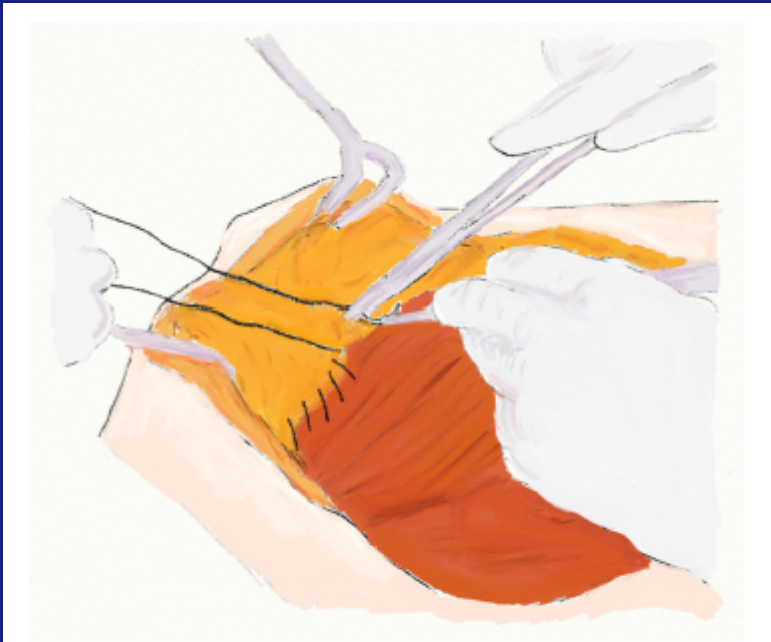


FIG. 1 For quilting suture, the skin flaps were sutured to the underlying pectoralis major with several parallel rows of running sutures

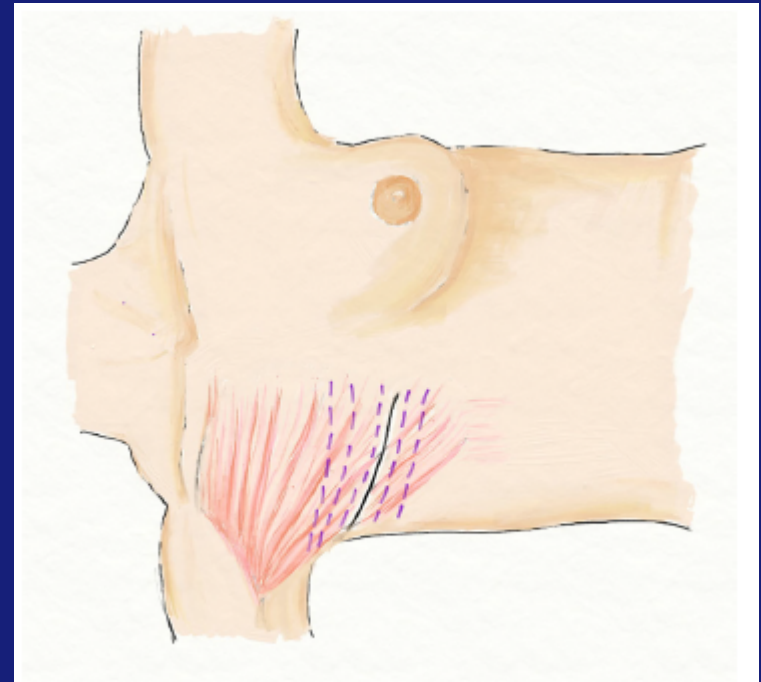


FIG. 2 Schematic positions of quilting sutures

common terminology for adverse events classification
CTCAE 4.0

grade 1	asymptomatic, no intervention
grade 2	symptomatic, intervention
grade 3	severe symptoms

overall seroma 15.2 vs 51.7% (HR 0.16; 0.04-0.72)

type 2 or 3 6.8 vs 21.7%

confounded by indication

prospective randomized trial

no easy solution

pathophysiology largely unknown

surgical technique

reduction of dead space, 'best option'

Patient information