

術式の決定にMRIは必要か？

A 必要

P:45歳 女性

右乳房に1.5cmの硬結触知。

MMGでは右乳房外側上部にFADあり。

乳房エコーでは2.0x2.0cmの低エコー領域あり。

腋窩リンパ節に明らかな腫大認めず。

針生検にて、浸潤性乳管癌(乳頭腺管癌)

グレード1, ER90%、PgR80%、HER2(0)

➡非腫瘤性病変を疑う

I:術式の決定にMRIを行う

C:術式の決定にMRIを行わない

O:同側乳房の再手術率の低下

切除断端陽性率の低下



Report

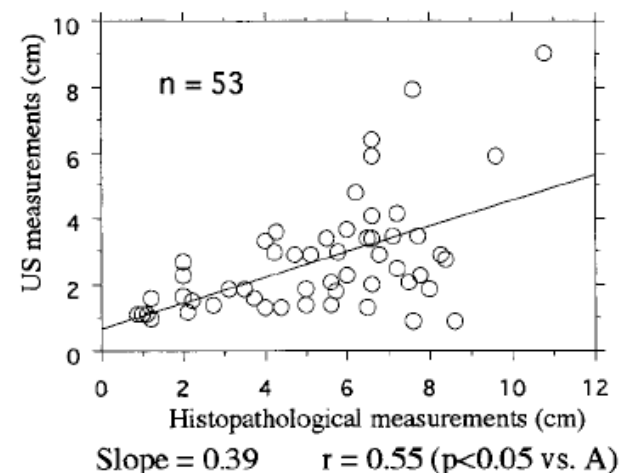
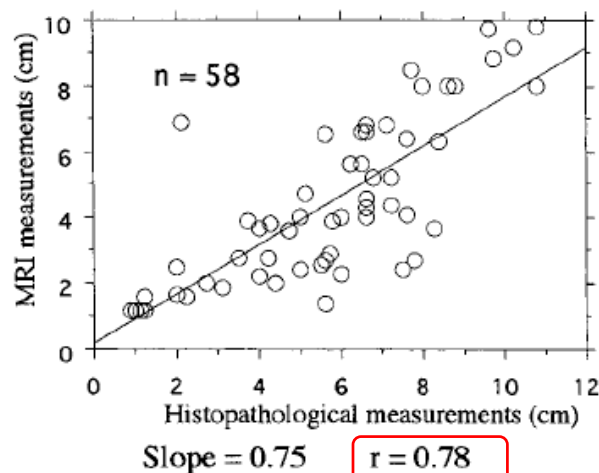
Correlation of three-dimensional magnetic resonance imaging with precise histopathological map concerning carcinoma extension in the breast

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Table 1. Patient characteristics in 58 cases

Patient age, mean (range)	52 yr (27–81 yr)
Menopausal status	
Pre-menopausal	30 (52%)
Post-menopausal	28 (48%)
Clinical stage	
0	
Tis	7 (12%)
I	
T1N0	19 (33%)
IIA	
T2N0	12 (21%)
IIB	
T2N1	15 (26%)
T3N0	5(9%)
Surgical therapy	
Mastectomy	14 (24%)
BCT	44(76%)
Histological tumor type	
IDC	46 (79%)
ILC	3 (5%)
Mucinous	1 (2%)
Apocrine	1 (2%)
DCIS	7 (12%)
Status of axillary nodes	
Negative	30 (52%)
Positive	23 (40%)
Dissection not done	5 (9%)



MRIは病理の腫瘍径と最も相関する。

BCT = breast conserving therapy; IDC = invasive ductal carcinoma; ILC = invasive lobular carcinoma, DCIS = ductal carcinoma *in situ*.

Accuracy and Surgical Impact of Magnetic Resonance Imaging in Breast Cancer Staging: Systematic Review and Meta-Analysis in Detection of Multifocal and Multicentric Cancer

Nehmat Houssami, Stefano Ciatto, Petra Macaskill, Sarah J. Lord, Ruth M. Warren, J. Michael Dixon, and Les Irwig

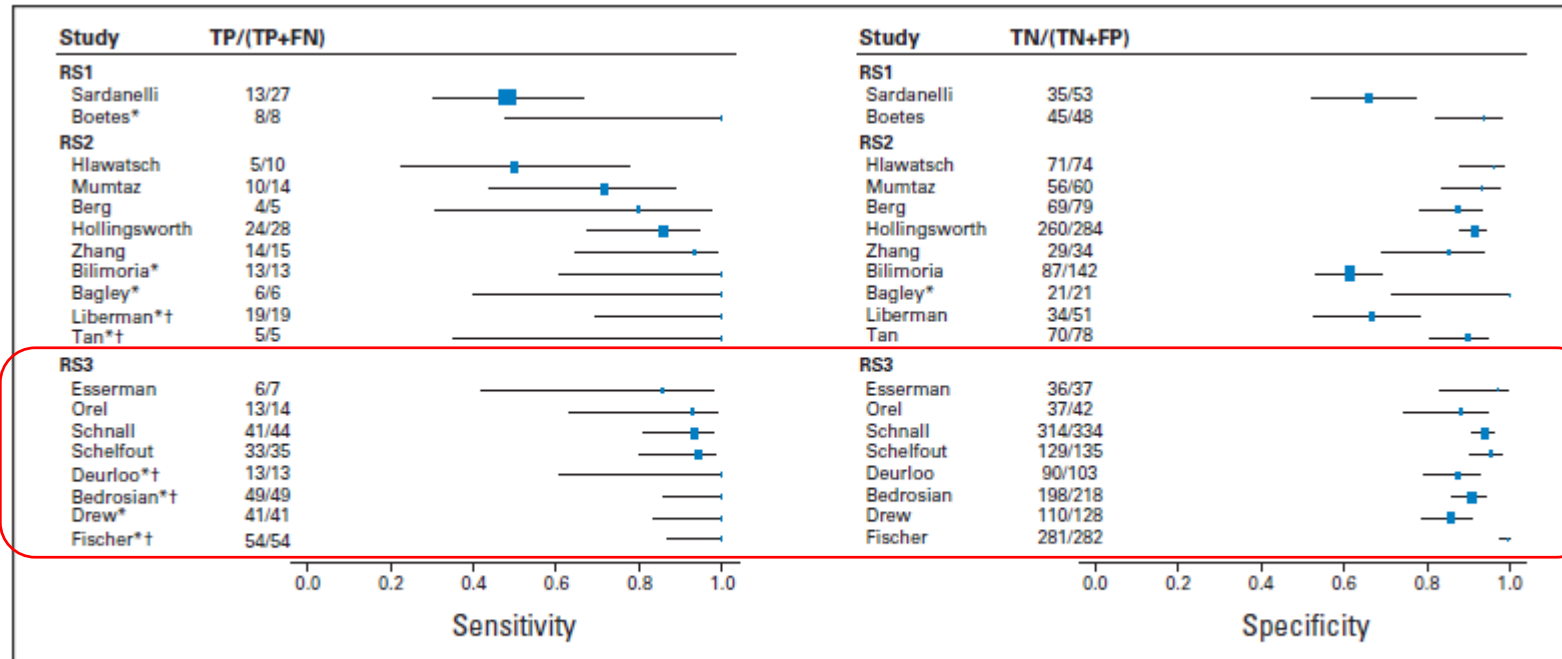


Fig 1. Sensitivity and specificity of magnetic resonance imaging (incremental detection of multifocal or multicentric breast cancer in the affected breast) stratified by reference standard (RS) group. (*) 0.5 added to cells to compute SE. (†) False-negative results (FN) assumed to be zero. TP, true positive; TN, true negative; FP, false positive.

同側乳房多発乳癌に対するメタアナリシス; 精度の高いReference standard 3 (RS3) の試験では、MRの感度・特異度は高かった。

Preoperative Breast MRI Can Reduce the Rate of Tumor-Positive Resection Margins and Reoperations in Patients Undergoing Breast-Conserving Surgery

TABLE 2: Tumor-Positive Resection Margins in the Preoperative MRI Group in Comparison With the Historical Control Group

Parameter	Tumor-Positive Resection Margins		Adjusted Odds Ratio ^a (95% CI)	Adjusted <i>p</i> ^a
	Preoperative MRI Group	Historical Control Group		
All lesions	<u>15/95 (15.8)</u>	<u>36/123 (29.3)</u>	0.33 (0.16–0.69)	< 0.01
Invasive malignancy ^b	12/84 (14.3)	25/96 (26.0)	0.37 (0.16–0.82)	0.02
DCIS	3/11 (27.2)	11/27 (40.7)	0.28 (0.05–1.55)	0.14

Note—Except for 95% CI, data in parentheses are percentages. DCIS = ductal carcinoma in situ.

^aAdjusted for size of lesions.

^bWith or without accompanying DCIS.

TABLE 3: Rate of Reoperations in the Preoperative MRI Group in Comparison With the Historical Control Group

Parameter	Rate of Reoperations		Adjusted Odds Ratio ^a (95% CI)	Adjusted <i>p</i> ^a
	Preoperative MRI Group	Historical Control Group		
All lesions	<u>18/95 (18.9)</u>	<u>46/123 (37.4)</u>	0.29 (0.15–0.58)	< 0.01
Invasive malignancy ^b	12/84 (14.3)	25/96 (26.0)	0.38 (0.17–0.84)	0.02
DCIS	6/11 (54.5)	21/27 (77.7)	0.34 (0.08–1.53)	0.16

Note—Except for 95% CI, data in parentheses are percentages. DCIS = ductal carcinoma in situ.

^aAdjusted for size of lesions.

^bWith or without accompanying DCIS.

Influence of preoperative MRI on the surgical management of patients with operable breast cancer

Michael Braun · Martin Pölcher · Simone Schradang · Oliver Zivanovic · Theresa Kowalski · Uta Flucke · Claudia Leutner · Tong-Wong Park-Simon · Christian Rudlowski · Walther Kuhn · Christiane K. Kuhl

Table 1 Patient characteristics

Age (years)	Number of patients (%)
20–39	1 (0.6)
30–39	15 (9.4)
40–49	42 (26.3)
50–59	44 (27.5)
60–69	46 (28.8)
70–79	11 (6.9)
80–89	1 (0.6)
Total	160
Median (years)	55.0
Mean (years)	54.0
Range (years)	27–84
Menopausal status	
Pre-menopausal	61 (38.0)
Post-menopausal	99 (62.0)

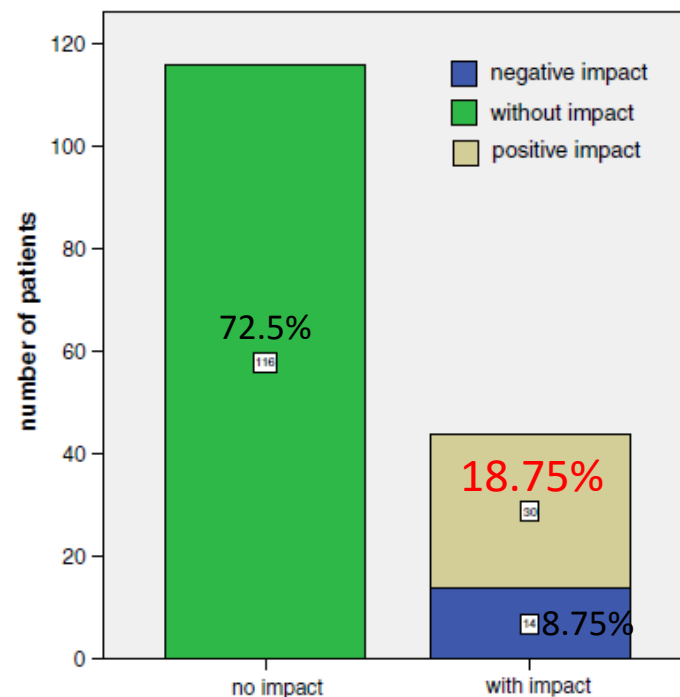


Fig. 1 Impact of preoperative breast MRI on surgical management. No impact in 116 patients (72.5%) (Group 1), with impact in 44 patients (27.5%) (Group 2); positive impact in 30 patients (18.75%) (Group 2a) and negative impact in 14 patients (8.75%) (Group 2b)

Comparative effectiveness of MRI in breast cancer (COMICE) trial: a randomised controlled trial

Lindsay Turnbull, Sarah Brown, Ian Harvey, Catherine Olivier, Phil Drew, Vicky Napp, Andrew Hanby, Julia Brown

Lancet 2010; 375: 563-71

	MRI (n=816)	No MRI (n=807)	Total (n=1623)
Number of patients recruited by surgeon undertaking randomisation			
Fewer than 10	115 (14%)	115 (14%)	230 (14%)
10 or more	701 (86%)	692 (86%)	1393 (86%)
Age at randomisation			
Younger than age 50 years	187 (23%)	187 (23%)	374 (23%)
50 years or older	629 (77%)	620 (77%)	1249 (77%)
Median (IQR)	57 (50-63)	57 (50-64)	57 (50-64)
Breast density at randomisation			
ACR BI-RADS group 1 (type 1)	102 (13%)	106 (13%)	208 (13%)
ACR BI-RADS group 2 (type 2, 3, or 4)	714 (88%)	701 (87%)	1415 (87%)
Menopausal status			
Premenopausal	232 (28%)	234 (29%)	466 (29%)
Postmenopausal	574 (70%)	565 (70%)	1139 (70%)
Missing data	10 (1%)	8 (1%)	18 (1%)
Extent of disease			
Localised	613 (83%)	631 (87%)	1244 (85%)
Multifocal	90 (12%)	72 (10%)	162 (11%)
Not assessable	11 (2%)	5 (<1%)	16 (1%)
Multicentric	11 (2%)	6 (<1%)	17 (1%)
Missing data	18 (2%)	9 (1%)	27 (2%)

	MRI (n=816)	No MRI (n=807)	Total (n=1623)
Initial operation			
Wide local excision	750 (92%)	787 (98%)	1537 (95%)
Mastectomy	58 (7%)	10 (1%)	68 (4%)
Other	3 (<1%)	0	3 (<1%)
Did not undergo initial surgery	2 (<1%)	2 (<1%)	4 (<1%)
Lost to follow-up or missing data	3 (<1%)	8 (1%)	11 (<1%)
Repeat operations within 6 months			
Further wide local excision	85 (10%)	90 (11%)	175 (11%)
Mastectomy	48 (6%)	61 (8%)	109 (7%)
Other	1 (<1%)	1 (<1%)	2 (<1%)
Pathologically avoidable initial mastectomy or patient choice	19 (2%)	4 (<1%)	23 (1%)
Did not undergo further surgery	659 (81%)	645 (80%)	1304 (80%)
Lost to follow-up	4 (<1%)	6 (<1%)	10 (<1%)

Table 3: Initial and repeat operations

	Histopathology		Total
	Wide local excision	Mastectomy	
MRI			
WLE	458 (84%) (true negative)	89 (16%) (false negative)	547
Mastectomy	55 (38%) (false positive)	89 (62%) (true positive)	144
Total	513	178	691

Table 4: MRI-predicted patient management

Patients aged 50 years or older, however, were reported to be less likely to undergo a reoperation (as previously defined) than were those younger than 50 years (OR 0.64, 0.47-0.86, p=0.0029).

術前にMRI施行してもQOLは変わらない

	MRI				No MRI			
	n	Median (IQR)	Mean (SD)	95% CI	n	Median (IQR)	Mean (SD)	95% CI
1 year after initial surgery								
FACT-B total	583	115.8 (96.0–126.0)	109.9 (21.0)	108.2–111.6	569	115.0 (98.0–127.0)	110.6 (20.3)	109.0–112.3
FACT-G total	586	88.9 (75.0–97.0)	84.3 (15.8)	83.0–85.5	575	89.0 (76–98.0)	84.7 (15.8)	83.5–86.0
FACT-B physical wellbeing	601	25.0 (22.0–27.0)	23.5 (4.6)	23.1–23.8	583	25.0 (22.0–27.0)	23.6 (4.3)	23.3–24.0
FACT-B social/family wellbeing	605	25.7 (21.0–28.0)	23.6 (5.1)	23.2–24.0	582	25.7 (21.0–28.0)	23.5 (5.4)	23.0–23.9
FACT-B emotional wellbeing	595	16.0 (13.0–18.0)	15.3 (3.9)	15.0–15.6	583	16.0 (14.0–18.0)	15.5 (3.9)	15.2–15.8
FACT-B functional wellbeing	604	23.6 (18.0–27.0)	21.9 (5.8)	21.4–22.3	587	24.0 (19.0–27.0)	22.1 (5.6)	21.6–22.5
FACT-B additional concerns	609	27.0 (21.4–31.0)	25.7 (6.5)	25.1–26.2	583	27.0 (22.0–30.0)	25.8 (6.0)	25.3–26.3
Trial outcome index	590	75.3 (61.2–82.0)	71.1 (14.9)	69.9–72.3	576	75.0 (63.0–82.0)	71.6 (13.9)	70.4–72.7

FACT-B=functional assessment of cancer therapy-breast. FACT-G=functional assessment of cancer therapy-general

Table 5: Quality of life summaries for patients who completed questionnaires within set timeframes

Original Research

Diagnosis of Breast Tumors by Contrast-Enhanced MR Imaging: Comparison Between the Diagnostic Performance of Dynamic Enhancement Patterns and Morphologic Features

Mariko Goto, MD,* Hirotoishi Ito, MD, PhD, Kentaro Akazawa, MD, Takao Kubota, MD, PhD, Osamu Kizu, MD, PhD, Kei Yamada, MD, PhD, and Tsunehiko Nishimura, MD, PhD

Table 5

Comparison of the Performance for Diagnosing Breast Carcinoma: Between Enhancement Pattern and Morphological Criterion

	Sensitivity (%)	<i>P</i> value ^a	Specificity (%)	<i>P</i> value ^a	Accuracy (%)	<i>P</i> value ^a
Mass lesion						
Enhancement pattern	89	NA	46	NA	79	NA
Morphological criterion	99	0.0012*	83	0.0003*	95	0.0001*
Nonmass lesion						
Enhancement pattern	72	NA	58	NA	65	NA
Morphological criterion	100	0.0736	74	0.3428	87	0.0389*

*For all cases with $P < 0.05$, demonstrated statistically significant difference.

^a*P* values for differences between enhancement kinetics and morphological criteria values calculated by using the McNemar test.

NA = not applicable.

本症例において

比較的若年

非腫瘍性病変

MRは十分なメリットがあり、必要である。

対側乳癌の検出

メタアナリシスでは、MRIによって対側病変が追加される頻度は5.5%~9.3%、その陽性適中率は37~47.9%と報告されている。

国内での単一施設での対側乳癌の検出率は、MMGで50%、超音波で67%。MMGと超音波で78%、MRIで100%とされている。

Harm ;

- MRで検出された病変

➡second look US

見えた➡針生検➡悪性➡手術

➡良性(偽陽性)➡患者との相談で適切な術式を選択できる。適切なfollow upができる。

見えなかった➡患者との相談で適切な術式を選択できる。

最終弁論

- 病変の範囲の同定にはMRIが最も有用です。
- 本症例は**45歳 非腫瘍性病変**でありMRIを施行することによって

断端陽性率、再手術率を有意に下げることができます

この症例には
術式の決定にMRIが必要です