

## Supplementary Online Content

Churilla TM, Chowdhury IH, Handorf E, et al. Comparison of local control of brain metastases with stereotactic radiosurgery vs surgical resection: a secondary analysis of a randomized clinical trial. *JAMA Oncol*. Published online November 8, 2018. doi:10.1001/jamaoncol.2018.4610

**eFigure 1.** CONSORT Diagram for Patient Selection

**eFigure 2.** Cumulative Incidences of Distant Neurological Progression (Development of Brain Metastases at New Sites) According to SRS and Surgical Resection

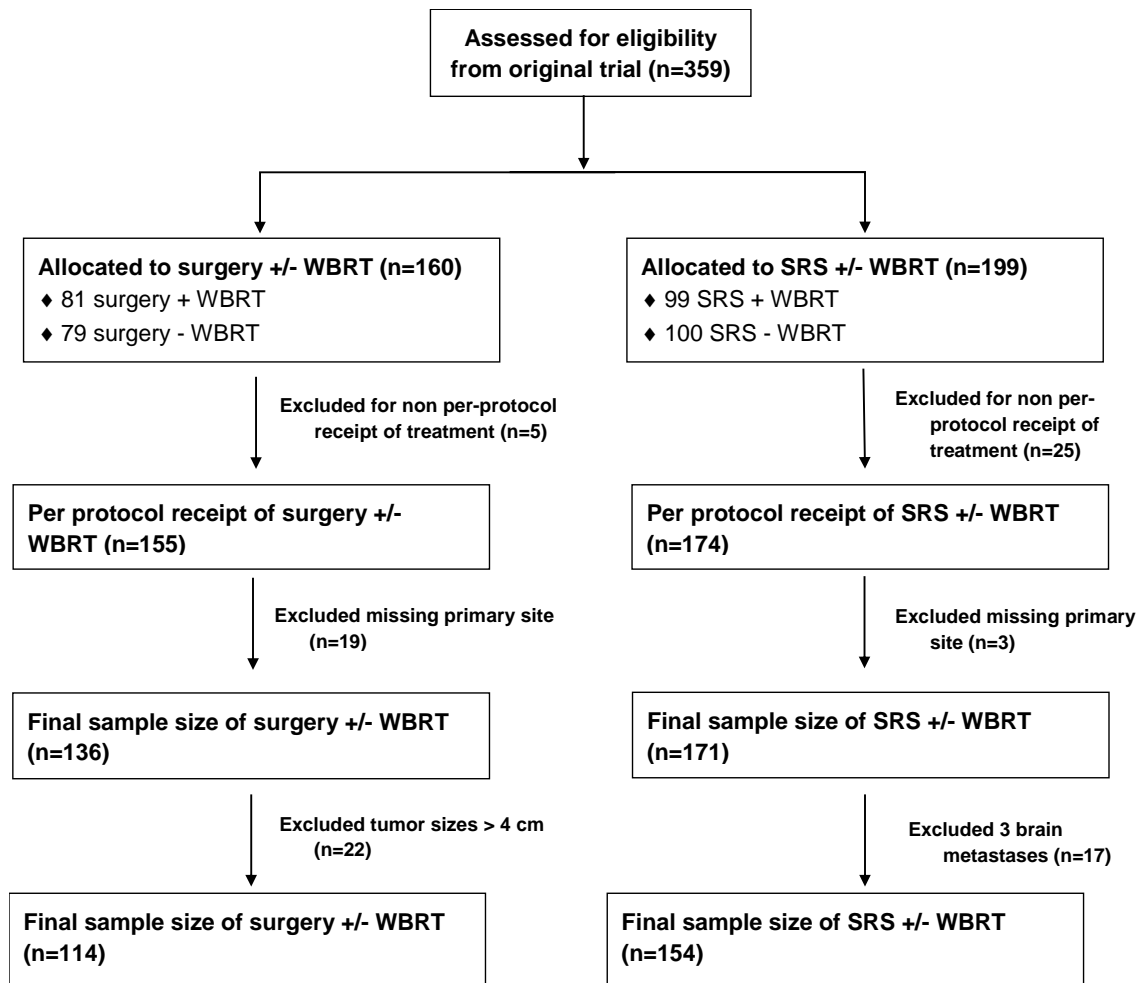
**eFigure 3.** Cumulative Incidences of Death Due to Any Cause According to SRS and Surgical Resection

**eTable 1.** Unadjusted Cumulative Incidence of Brain Metastasis Local Recurrence According to Local Therapy

**eTable 2.** Adjusted Competing Risk Regression Model for Factors Associated With Local Recurrence of Previously Treated Brain Metastases Using Time 0 as Completion of Local Therapy

This supplementary material has been provided by the authors to give readers additional information about their work.

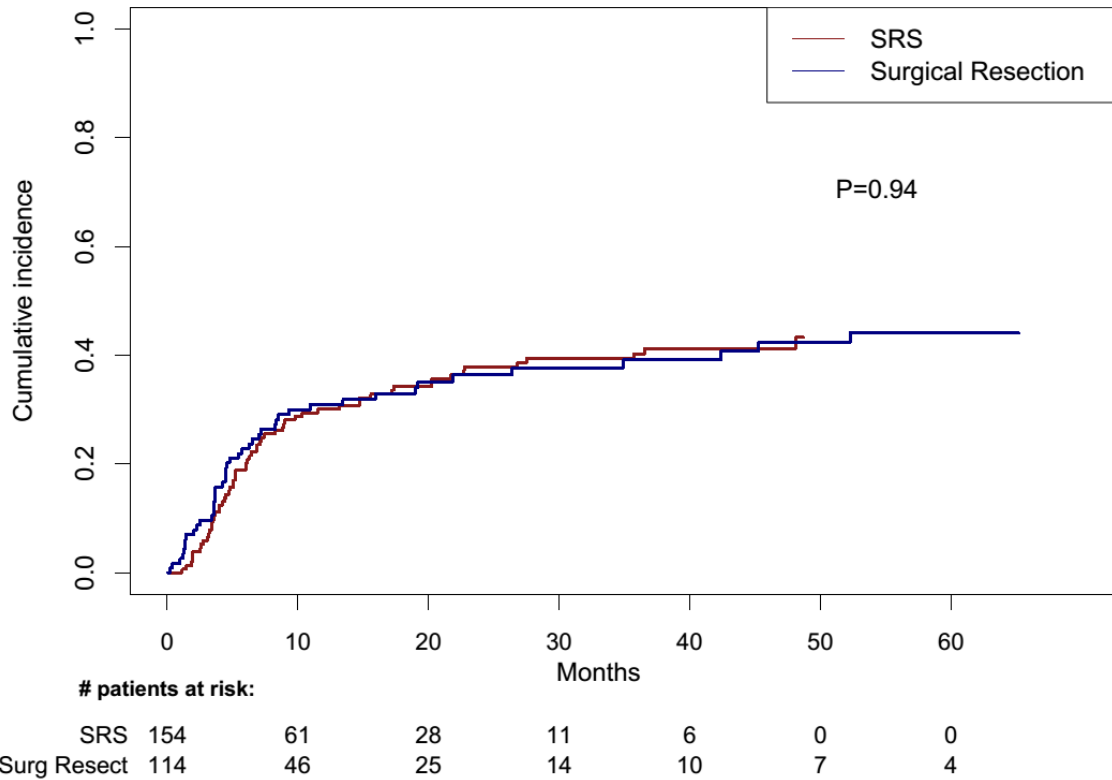
**eFigure 1.** CONSORT Diagram for Patient Selection



We excluded patients with three brain metastases as they were treated exclusively with SRS and patients with tumor sizes > 4 cm as they were treated exclusively with surgical resection.

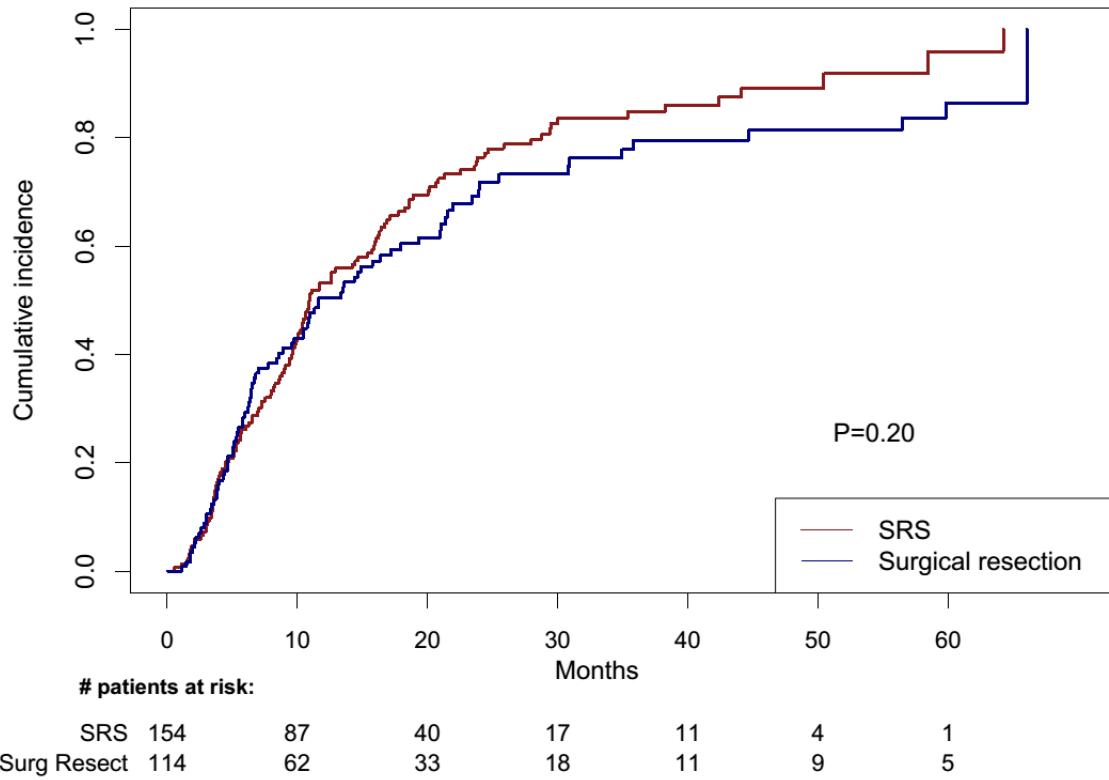
*Abbreviations:* SRS = Stereotactic radiosurgery, WBRT = Whole brain radiotherapy.

**eFigure 2.** Cumulative Incidences of Distant Neurological Progression (Development of Brain Metastases at New Sites) According to SRS and Surgical Resection



*Abbreviations:* SRS = Stereotactic radiosurgery, Surg Resect = Surgical resection.

**Figure 3.** Cumulative Incidences of Death Due to Any Cause According to SRS and Surgical Resection



*Abbreviations:* SRS = Stereotactic radiosurgery, Surg Resect = Surgical resection.

<b>eTable 1.</b> Unadjusted Cumulative Incidence of Brain Metastasis Local Recurrence According to Local Therapy									
	All Patients		<i>p</i> *	+ Whole Brain Radiotherapy		<i>p</i> *	-Whole Brain Radiotherapy		<i>p</i> *
	SRS	Surgical Resection		SRS	Surgical Resection		SRS	Surgical Resection	
3 Months	2.0%	15.8%	0.015	1.3%	7.3%	0.398	2.7%	23.9%	0.012
6 Months	9.8%	29.1%		3.9%	14.6%		16.0%	43.0%	
9 Months	17.0%	35.4%		9.0%	21.9%		25.3%	48.2%	
12 Months	22.9%	37.2%		12.8%	21.9%		33.3%	51.6%	
24 Months	28.5%	40.2%		20.5%	23.8%		36.3%	55.3%	
* Gray's test Abbreviations: SRS = stereotactic radiosurgery; WBRT = whole brain radiotherapy.									

**eTable 2.** Adjusted Competing Risk Regression Model for Factors Associated With Local Recurrence of Previously Treated Brain Metastases Using Time 0 as Completion of Local Therapy\*

Variable	Hazard Ratio	[95% CI]	<i>p</i>
Surgical resection vs. SRS**	1.10	[0.68-1.75]	0.705
0-3 months	3.63	[1.52-8.64]	0.004
3-6 months	1.81	[0.93-3.54]	0.083
6-9 months	1.22	[0.54-2.79]	0.630
≥ 9 months	0.31	[0.14-0.69]	0.004
Diameter of lesion	1.02	[0.99-1.06]	0.133
Baseline Neurologic Status			
No neurologic deficit	1.00	Referent	-
Some deficit, useful work	1.17	[0.68-2.02]	0.579
Moderate impairment	0.74	[0.37-1.49]	0.401
Metastasis site			
Temporal	1.00	Referent	-
Frontal	1.24	[0.62-2.48]	0.543
Occipital	1.45	[0.66-3.18]	0.352
Parietal	0.86	[0.40-1.82]	0.687
Posterior Fossa	0.64	[0.27-1.53]	0.312
Other	0.19	[0.02-1.67]	0.135
Macroscopic Tumor Outside Brain			
Absent	1.00	Referent	-
Present	0.67	[0.42-1.08]	0.101
Number of brain metastases			
1	1.00	Referent	-
2	0.85	[0.41-1.73]	0.646

\* Model is stratified according to receipt of whole brain radiotherapy.

\*\* First row represents overall hazard ratio of surgical resection vs. SRS while rows 2-5 evaluate surgical resection vs. SRS according to time period.

Abbreviations: SRS = stereotactic radiosurgery

