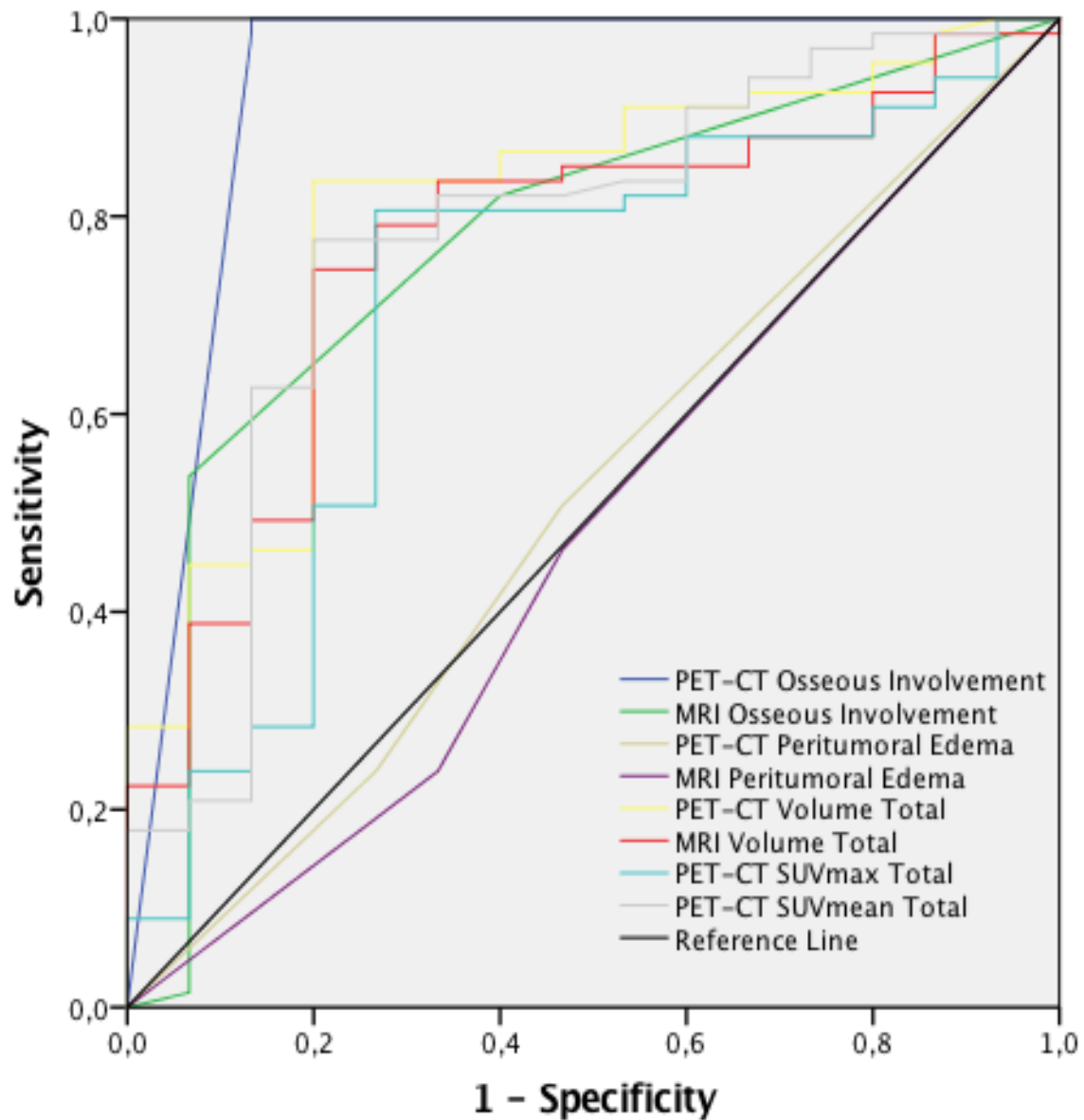
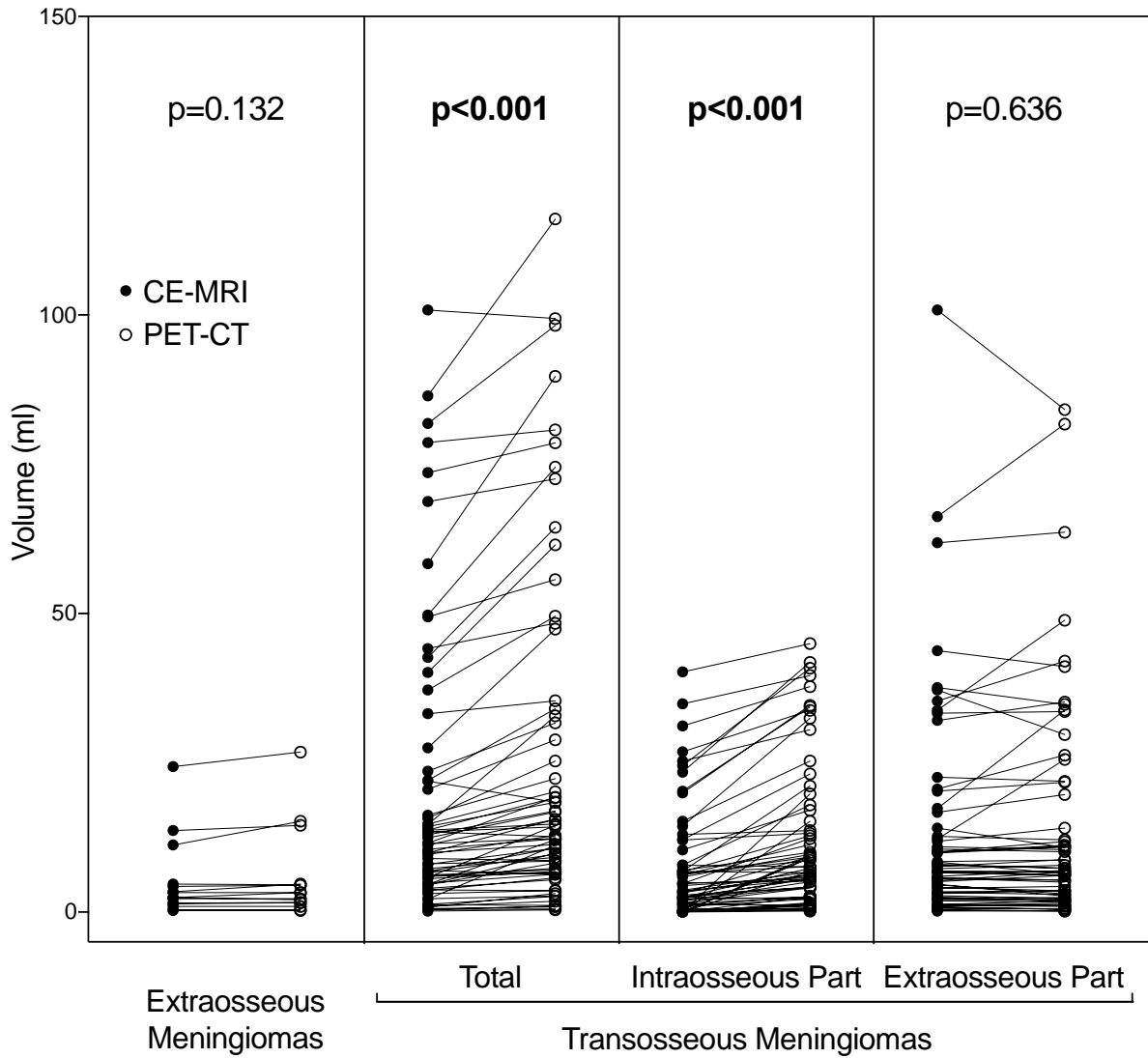


Supplemental Figure 1. Flow Chart of Patient Selection



Supplemental Figure 2. ROC Analysis of Imaging Parameters for Osseous Involvement



Supplemental Figure 3. Comparison of Estimated Volumes in ^{68}Ga -DOTATATE PET-CT and CE-MRI

The plots depict the estimated volumes for extraosseous and transosseous meningiomas using ^{68}Ga -DOTATATE PET-CT (open circles) and CE-MRI (full circles). The data are based on 82 meningioma patients with pathological exclusion or inclusion of osseous involvement. In case of imaging-based false-negative osseous involvement, the intraosseous part was attributed no volume (0 ml). Statistical comparison was performed using the Wilcoxon signed rank test. Bold p values indicate statistical significance.

Supplemental Table 1.

Correlation Analysis of PET-CT Tracer Uptake Values and Meningioma Volume

Meningioma Volume vs.	PET-CT SUVmax (N=105)	PET-CT SUVmean (N=105)	PET-CT relative SUVmax (N=76)	PET-CT relative SUVmean (N=76)
Pearson Correlation Coefficient (r)	0.155	0.188	0.206	0.350
p value	0.114	0.055	0.074	0.062

Relative SUVmax and SUVmean values were divided by the corresponding pituitary gland tracer uptake value, which was only available in 76 patients. Bold p values indicate statistical significance.

Supplemental Table 2. Regression Analysis for Osseous Involvement

Independent Parameters	OR (95% CI)		p value
Age	0.934	(0.867 - 1.006)	0.070
Sex	2.577	(0.416 - 5.950)	0.309
WHO Grade	0.591	(0.138 - 2.527)	0.478
Location	1.529	(0.715 - 3.272)	0.274
PET-CT Meningioma Volume	1.078	(0.971 - 1.196)	0.159
PET-CT Peritumoral Edema	1.452	(0.513 - 4.109)	0.482
PET-CT SUVmax	0.854	(0.729 - 1.001)	0.052
PET-CT SUVmean	2.739	(1.011 - 7.421)	0.048

A binary logistic regression analysis for pathology-assessed osseous involvement was performed. OR indicates odds ratio; CI, confidence interval; WHO, World Health Organization; SUV, standardized uptake value. Bold p values indicate statistical significance.

Supplemental Table 3. Tumor-to-Background Signal in CE-MRI and PET-CT

Tumor-to-Background Signal	CE-MRI	PET-CT	p value
Intraosseous Part of Transosseous Meningioma	1.9 (1.7-2.2)	7.5 (6.1-10.5)	<0.001
Extraosseous Part of Transosseous Meningioma	3.7 (2.9-4.8)	13.4 (9.2-21.8)	<0.001

The tumor-to-background ratio was measured in 47 patients with pathology-proven transosseous meningiomas for which CE-MRI and PET-CT diagnoses were both consistent with osseous involvement. The signal was measured for CE-MRI in contrast-enhanced T1-weighted sequences and for PET-CT as SUVmean. Bold p values indicate statistical significance.