CURRICULUM VITAE

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Current Title

Assistant professor in Department of Radiology, Yonsei University of College of Medicine.

EDUCATION

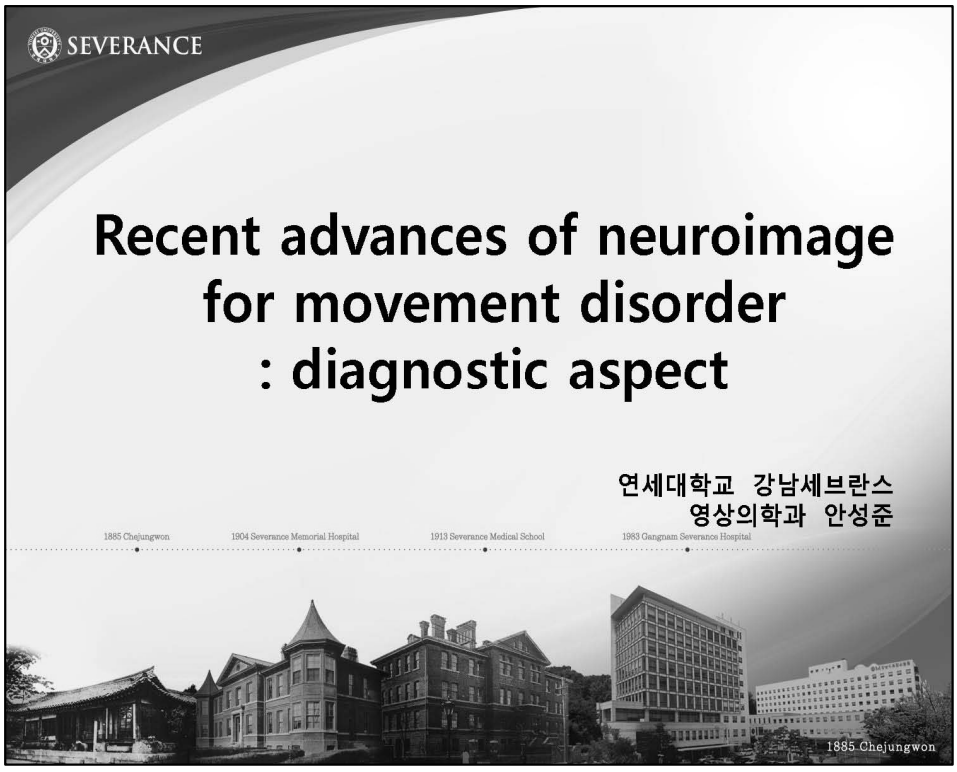
1996	Department of Chemical Engineering, Seoul National University. Honor Graduation, Bachelor of Engineering (Chemical engineering)
2003-2007	Yonsei University, College of Medicine. Graduation, Degree in Medicine
2009-2011	Yonsei University, College of Medicine. Graduation, Master Degree Course
2012-2015	Yonsei University, College of Medicine. Graduation, PhD Course

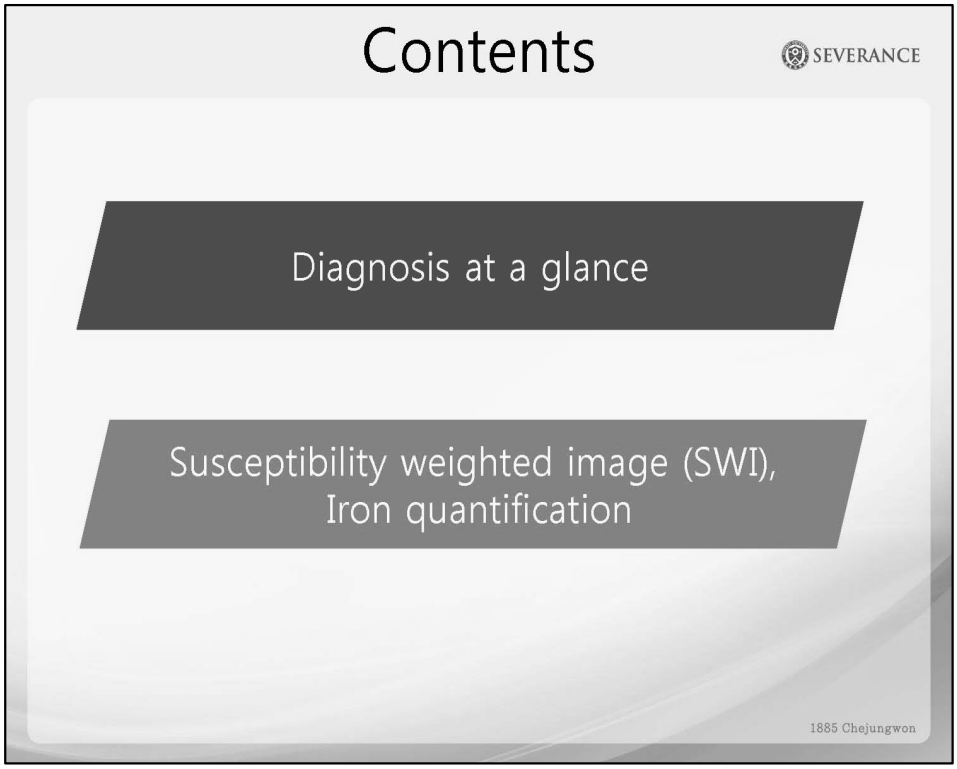
CAREER

1999-2001	KATUSA Training Academy, NCO academy, USA 8th army. Discharged as a senior sergeant.
2007-2008	Intern, Severance Hospital
2008-2012	Resident, Department of Radiology in Severance Hospital.
2012-2014	Fellow, Department of Radiology in Severance Hospital
2014-2015	Clinical assistant professor of Radiology and Neuroradiology in Severance Hospital
2015-2016	Clinical assistant professor of Radiology and Neuroradiology in Gangnam Severance Hospital
2016-Present	Assistant professor of Radiology and Neuroradiology in Gangnam Severance Hospital

GRANTS & PRIZE AWARDED

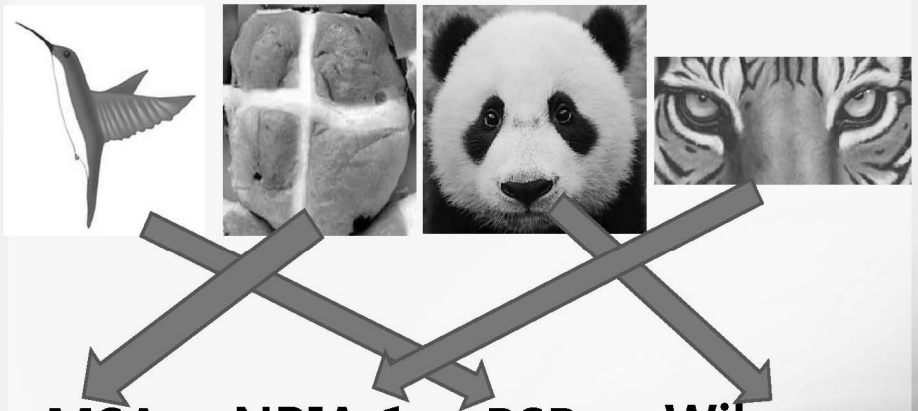
2011/02	Honorable Research Resident in the Department of Radiology, Severance Hospital
2011/08	Honorable Research Achievement Award, Graduate School of Yonsei University, College of Medicine
2013/02	Certificate of Neuroradiology Fellow Eexchange Program of Korea, Japan and Taiwan Neuroradiology Society.


SEVERANCE
Recent advances of neuroimage for movement disorder : diagnostic aspect
연세대학교 강남세브란스
영상의학과 안성준
1885 Chejungwon
1904 Severance Memorial Hospital
1913 Severance Medical School
1963 Gangnam Severance Hospital
1885 Chejungwon


Contents
SEVERANCE
Diagnosis at a glance
Susceptibility weighted image (SWI),
Iron quantification
1885 Chejungwon

Diagnosis at a glance

SEVERANCE



MSA NBIA 1 PSP Wilson

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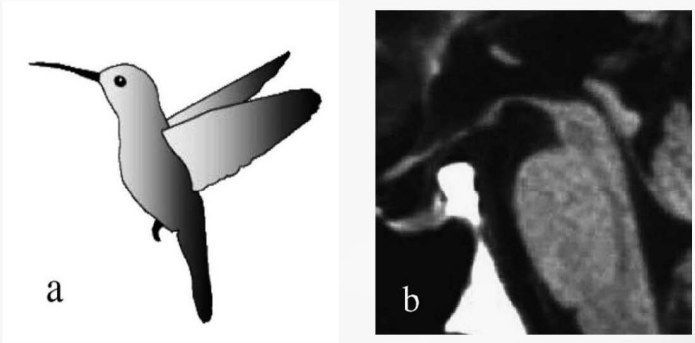
SEVERANCE

Progressive supranuclear palsy



1. Rostral midbrain tegmentum, caudal midbrain tegmentum atrophy.
2. Medial longitudinal fasciculus invovlment

J Neurol Sci 2003;210:57–60.

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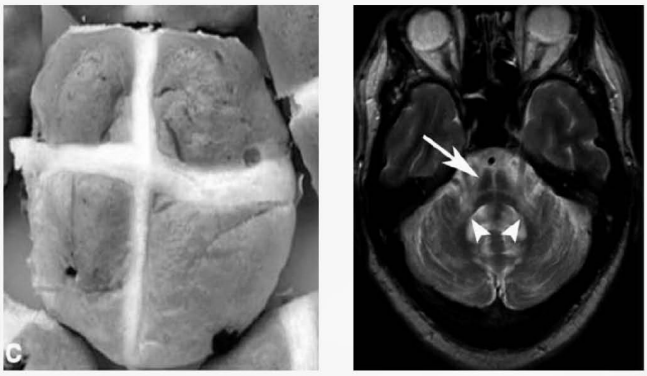
Multiple systemic atrophy

SEVERANCE



1. MSA-c
2. Wallerian degeneration due to vasculitis, infarction, SCA

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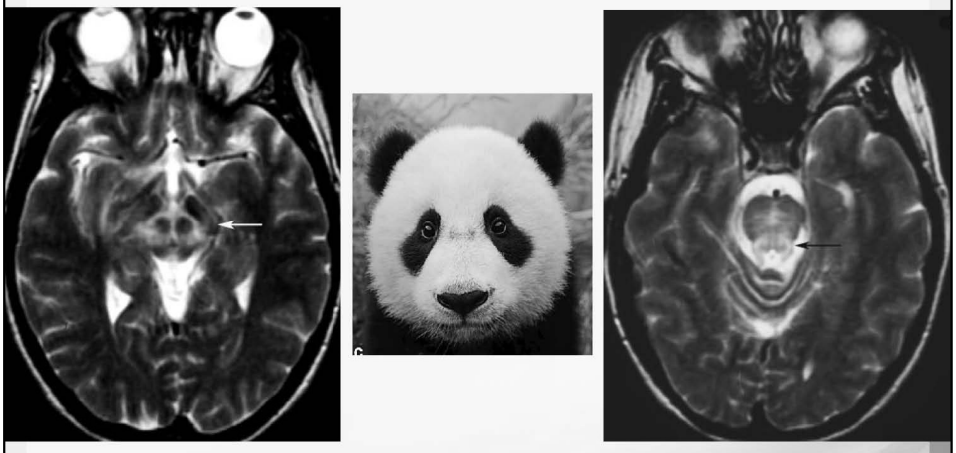
Wilson's disease

SEVERANCE

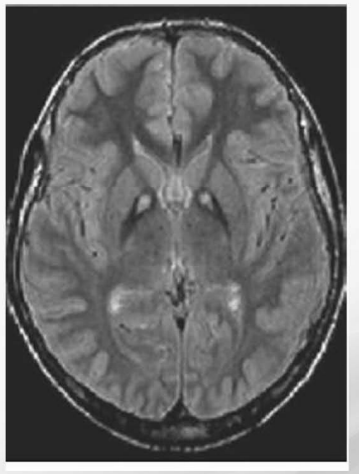


1. Copper metabolism
2. Accumulation of copper, chronic ischemia, vasculopathy, or demyelination

Neurology 2003;61;969

SEVERANCE

Neurodegeneration with brain iron accumulation type 1



1. Hallervorden-Spatz
2. PANK2 gene mutation
3. Central hyperintense SI + hypointense rim (eye of tiger)

Neurology 2008;70:1614–1619.

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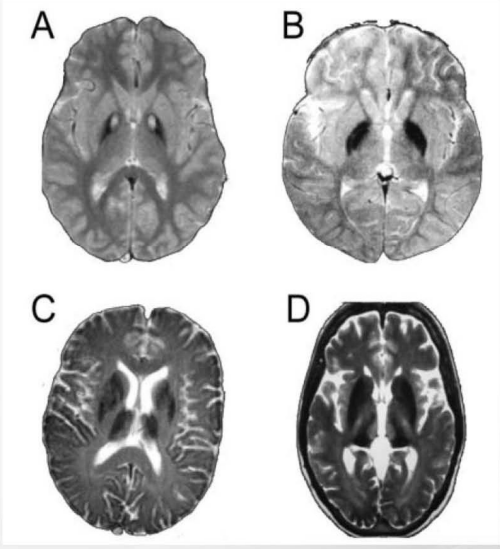
SEVERANCE

Imaging features of NBIA subtypes



Neurology 2008;70:1614–1619.

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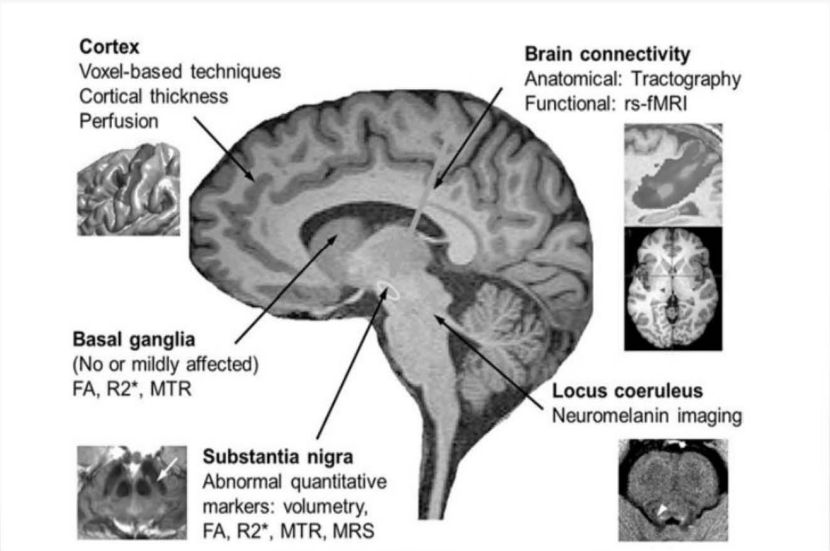
Advanced imaging technique

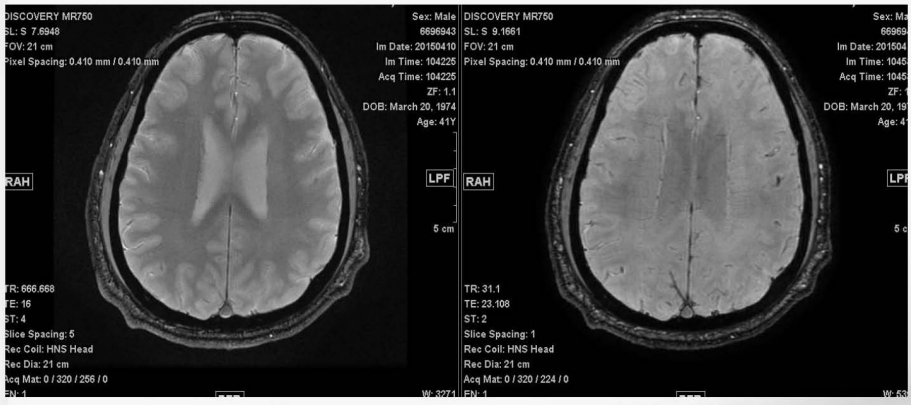
SEVERANCE



Ther Adv Neurol Disord
2014, Vol. 7(4) 206–220

Susceptibility weighted image

SEVERANCE



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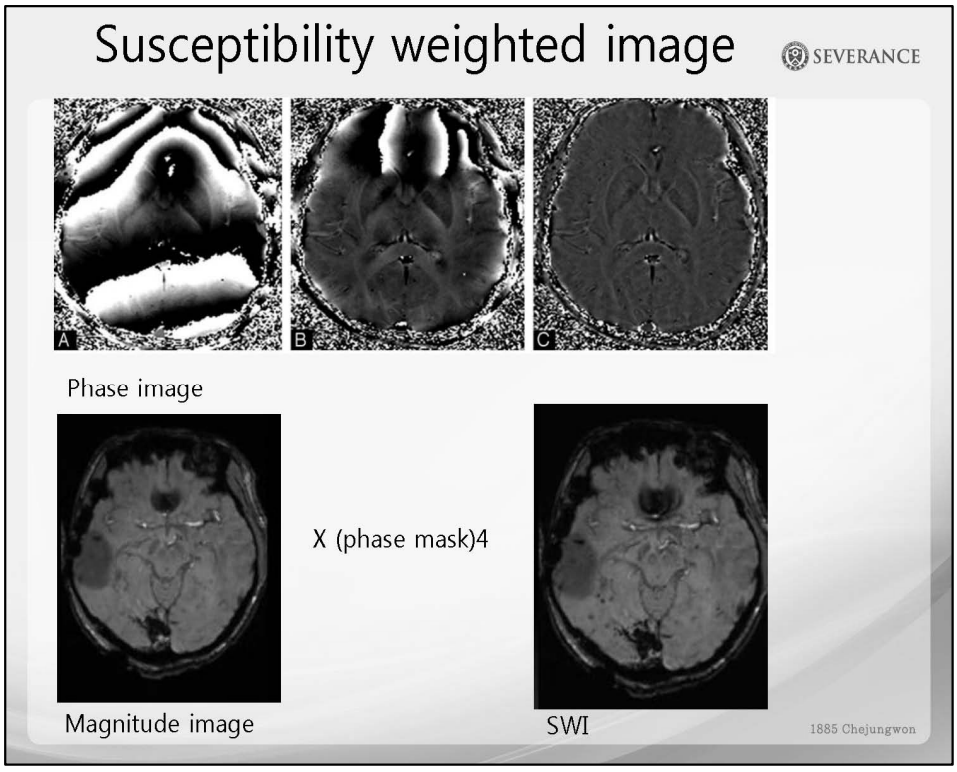
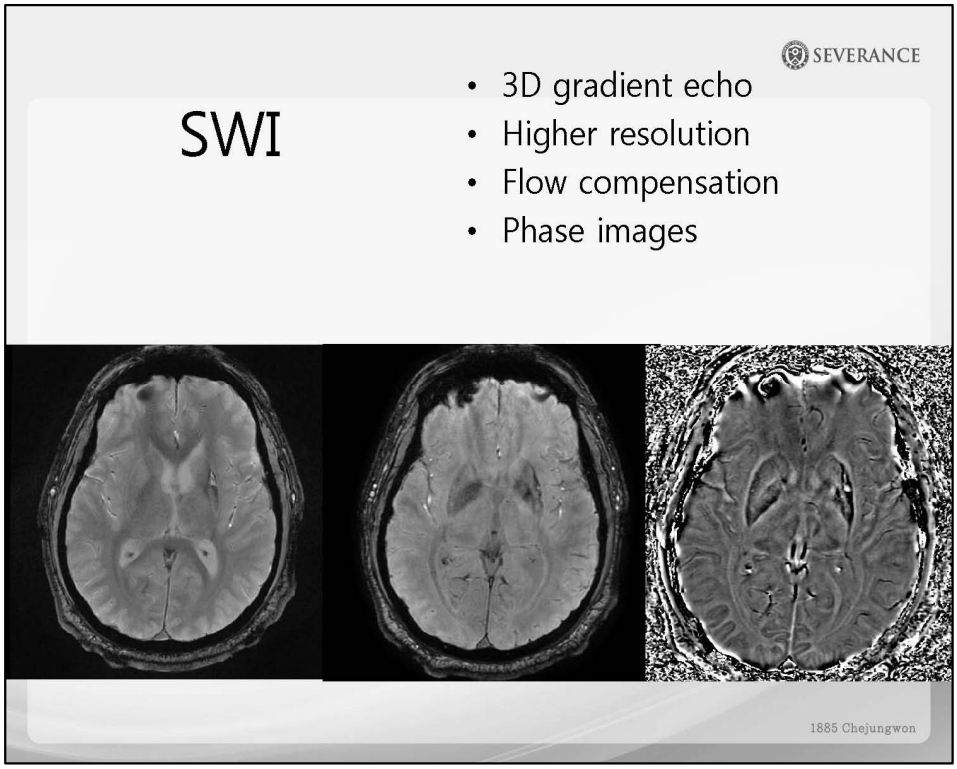
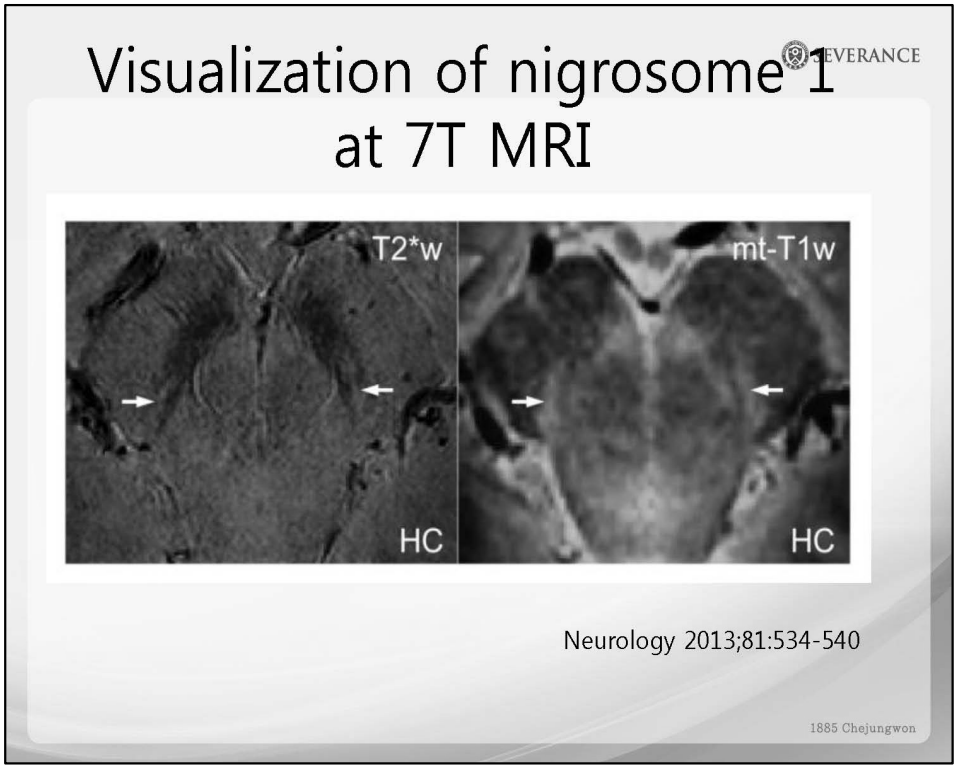

Susceptibility weighted image
SEVERANCE
A
B
C
Phase image
X (phase mask)4
Magnitude image
SWI
1885 Chejungwon


SEVERANCE
SWI
• 3D gradient echo
• Higher resolution
• Flow compensation
• Phase images
1885 Chejungwon


Visualization of nigrosome 1
at 7T MRI
SEVERANCE
T2*w
mt-T1w
HC
HC
Neurology 2013;81:534-540
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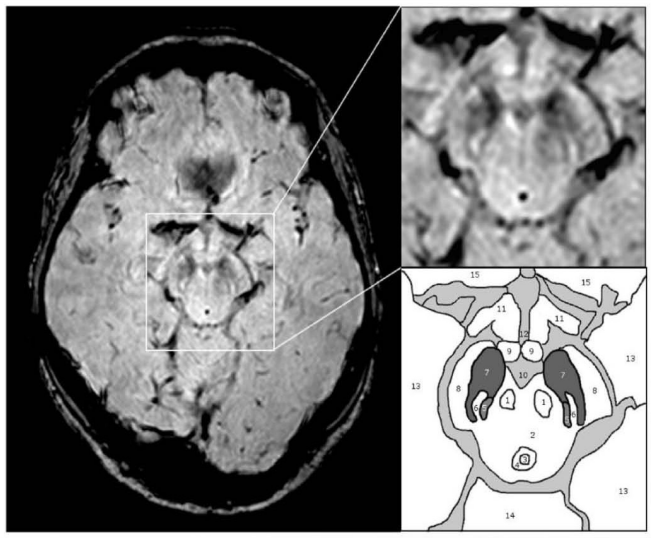
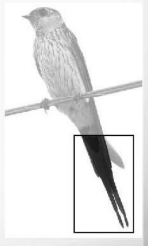
Visualization of nigrosome 1 at 3T MRI SWI

SEVERANCE





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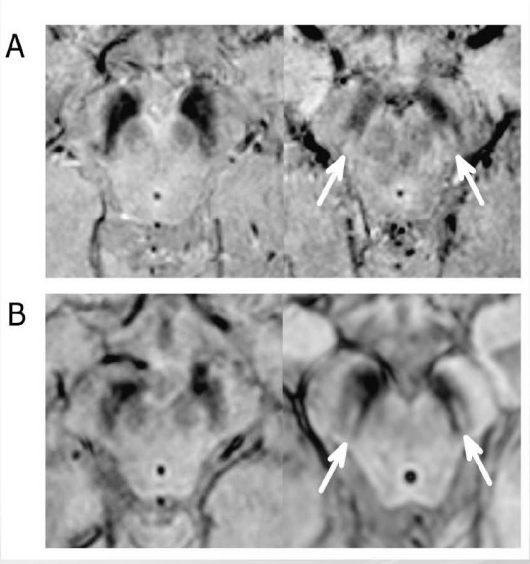
Plos one 2014;9;e93814

Visualization of nigrosome 1 at 3T MRI SWI

SEVERANCE



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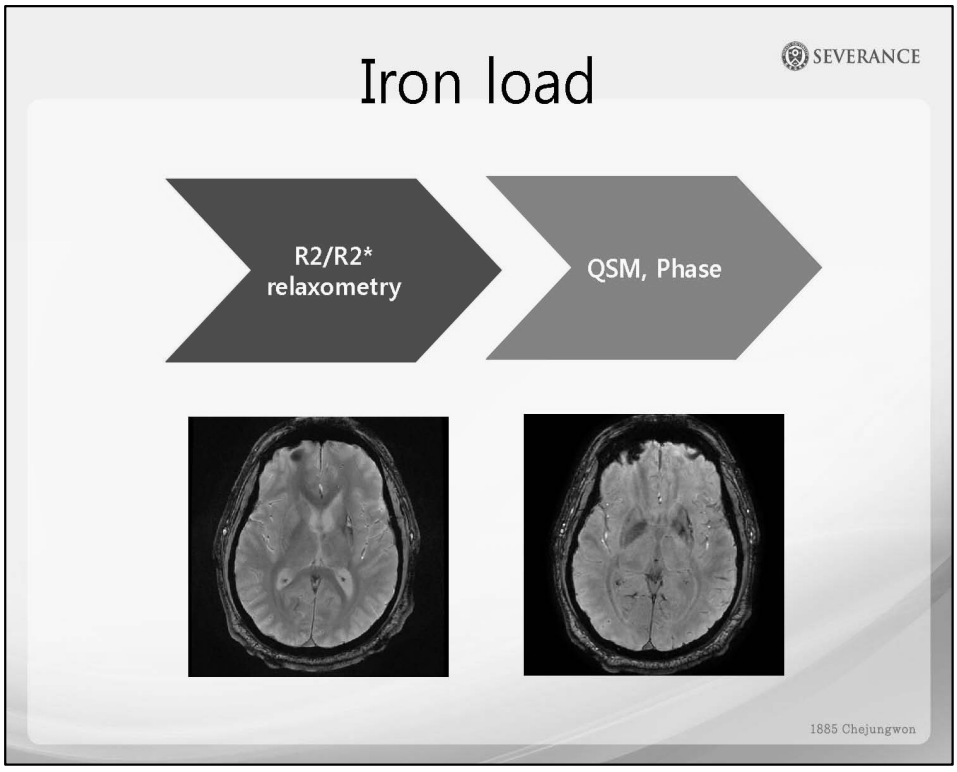
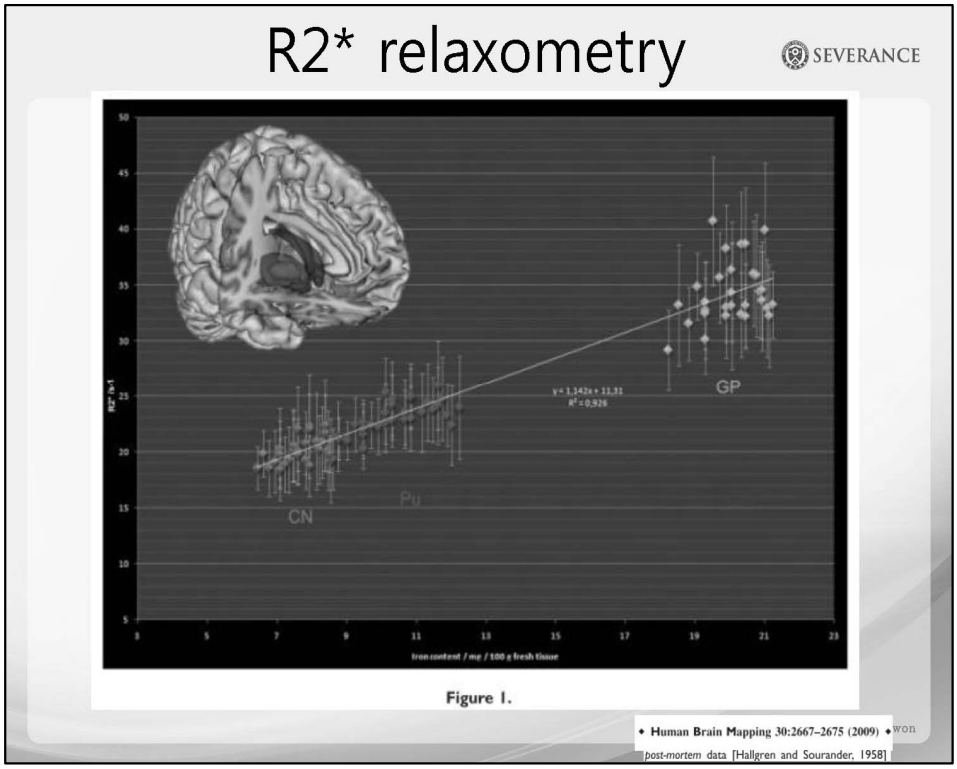
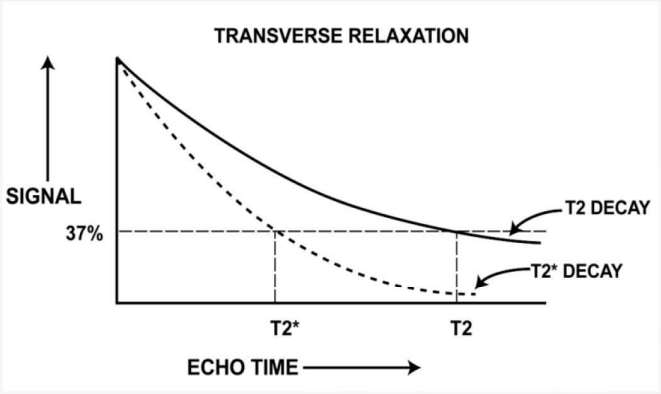
Plos one 2014;9;e93814


Iron load
SEVERANCE
R2/R2*
relaxometry
QSM, Phase
1885 Chejungwon


R2* relaxometry
SEVERANCE
GP
Pu
CN
Figure 1.
Human Brain Mapping 30:2667–2675 (2009)
post-mortem data [Hallgren and Sourander, 1958]

SEVERANCE



$$S(TE) = Ae^{-TE \cdot R2^*} + C$$

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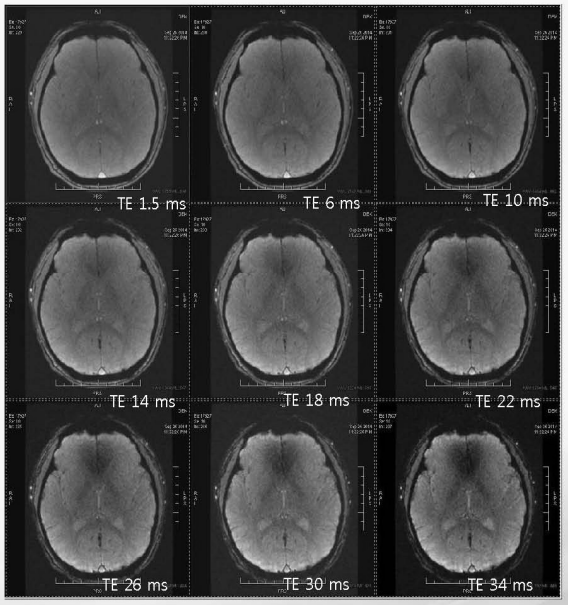
R2 star mapping(Based on MFSPGR, Multi echo fast SPGR)

SEVERANCE



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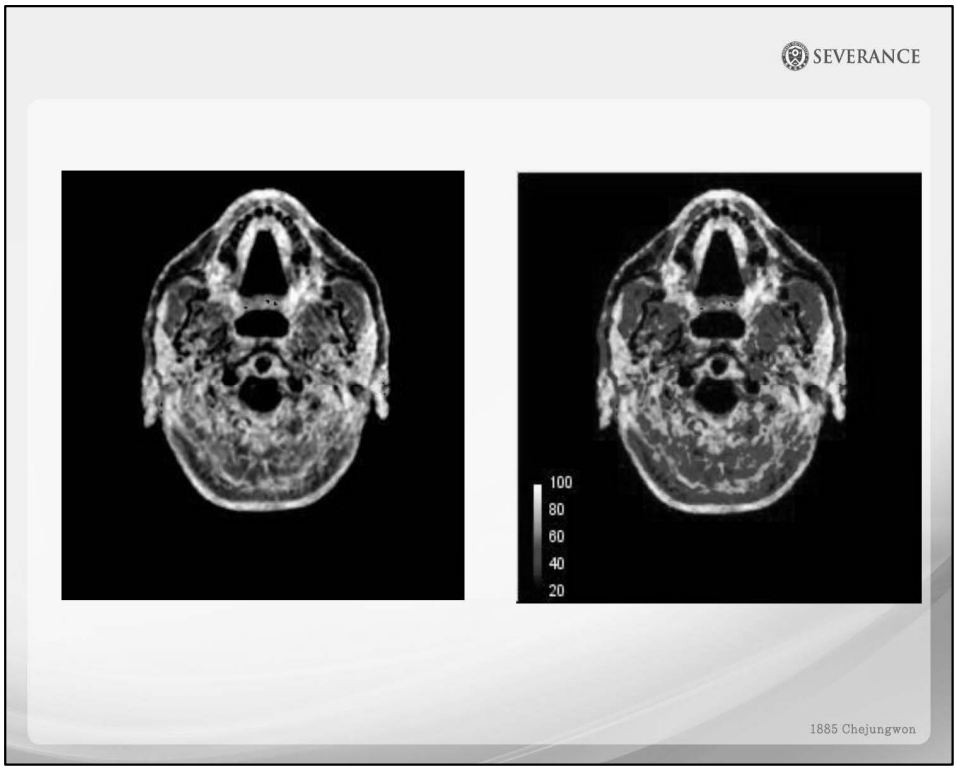
SEVERANCE
100
80
60
40
20
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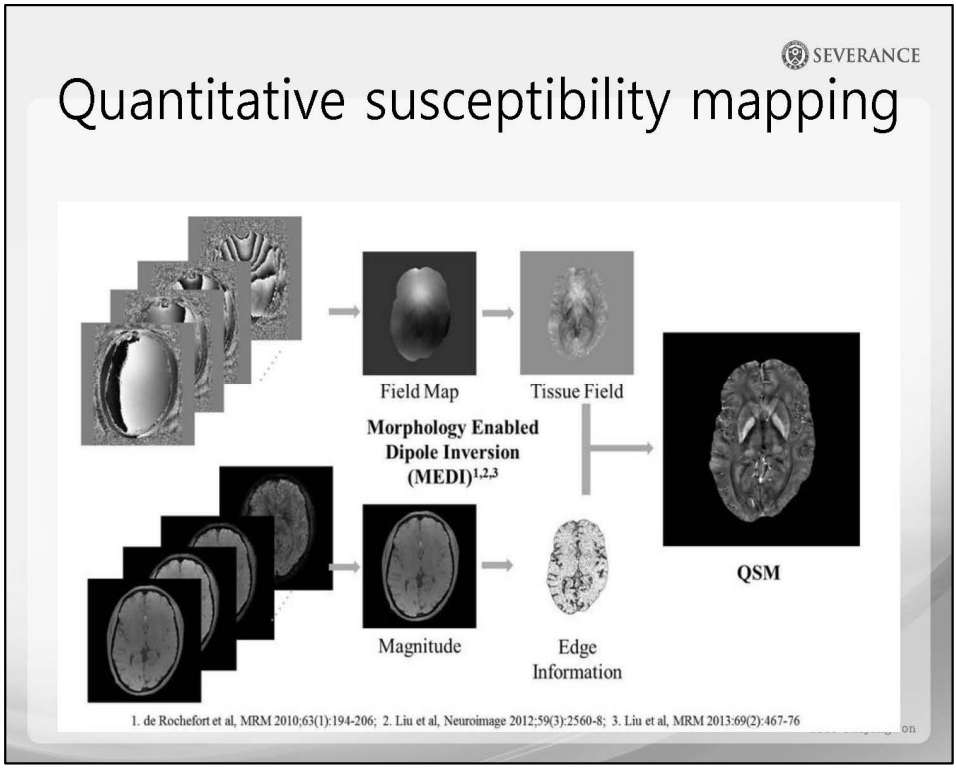
SEVERANCE
Quantitative susceptibility mapping
Field Map
Tissue Field
Morphology Enabled
Dipole Inversion
(MEDI)[1,2,3]
QSM
Magnitude
Edge
Information
1. de Rochefort et al, MRM 2010;63(1):194-206; 2. Liu et al, Neuroimage 2012;59(3):2560-8; 3. Liu et al, MRM 2013:69(2):467-76