## 総合理工学研究科 Graduate School of Science and Technology 生命理工学コース Life Science and Technology

Whole-body Diffusion-weighted Imaging



教授 高原太郎 Prof. Taro Takahara Keyword: MRI, DWI, DWIBS, Cancer Screening, Peripheral Nerve Imaging

私は放射線科医であり、画像診断、とくに MRI を先行しています。そのなかでも、「全身の拡散強調画像  $^{1,2}$ 」」を手がけています。 最近では、これを応用した、全身の末梢神経描出 (MR Neurography) [Fig.1]  $^{3)}$ や、無被曝のがん検診などを行っています。

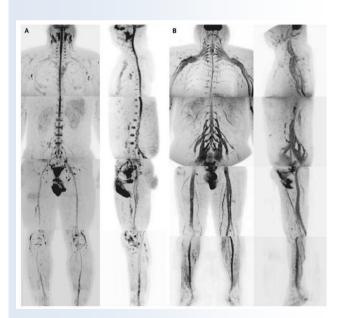


Fig.1 末梢神経描出 (MR Neurography)

I am a radiologist who mainly investigates magnetic resonance imaging (MRI) especially diffusion-weighted imaging (DWI). In 2004, our groups succeeded to develop a new cancer detection method (diffusion-weighted whole body imaging with background body suppression; DWIBS) which mimics FDG-PET <sup>1,2)</sup>. This was the world first whole body cancer detection method without need of irradiation. Furthermore, we succeeded to visualize whole body peripheral nerve system, which was not able so far, with improved DWIBS method. The results were published on New England Journal of Medicine [Fig.1] 3). Our recent interest is to do cancer screening for healthy population.

## 文献

- 1) Takahara T. et al. Diffusion weighted whole body imaging with background body signal suppression (DWIBS): technical improvement using free breathing, STIR and high resolution 3D display. Radiat Med. 2004, Jul-Aug; 22(4): 275-82
- 2) Kwee TC, Takahara T, Ochiai R, Nievelstein RA, Luijten PR. Diffusion-weighted whole-body imaging with background body signal suppression (DWIBS): features and potential applications in oncology. Eur Radiol. 2008, Sep; 18(9): 1937-52. (Review)
- 3) Yamashita T, Kwee TC, Takahara T. Whole-body magnetic resonance neurography. N Engl J Med. 2009 Jul 30;361(5):538-9.

