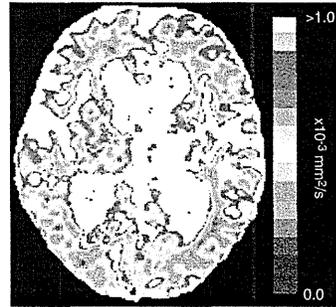
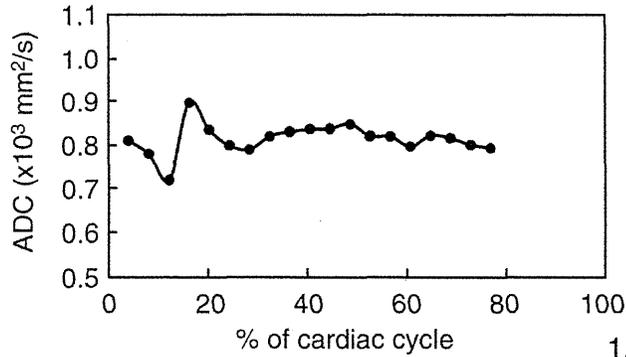
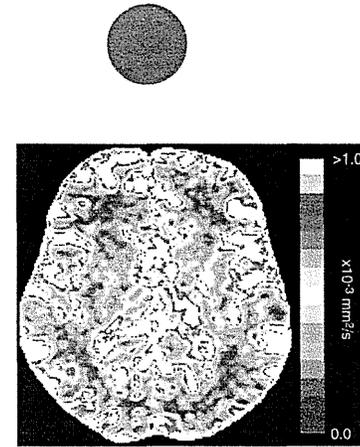


Temporal Changes in ADC during Cardiac Cycle

Ohno N et al. Radiology 2011

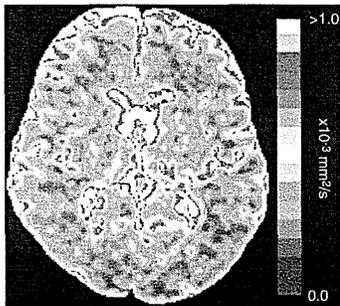
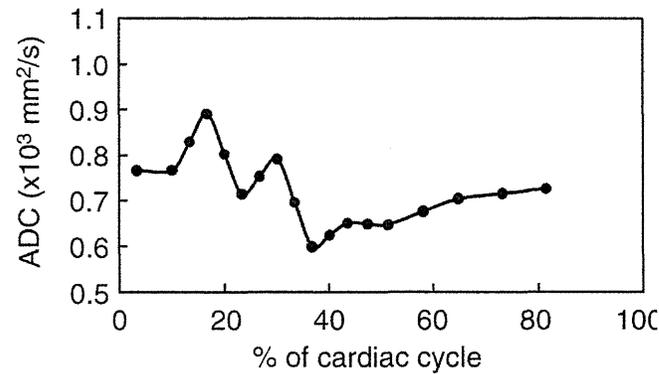


iNPH

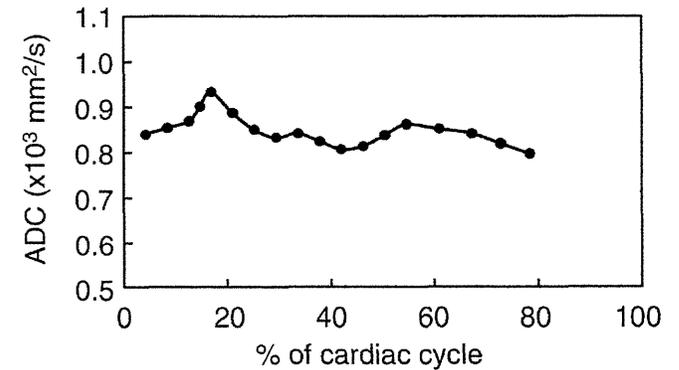
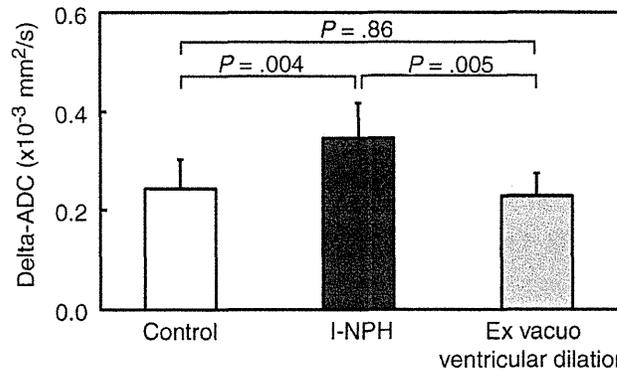


Ex vacuo ventricular dilatation

Control



ΔADC



ADC; apparent diffusion coefficient

臨床症状を伴う前頭縫合早期癒合症の病因・病態と診断・治療に関する研究班
班会議

平成 25 年 12 月 7 日

順天堂大学医学部 10 号館 4 階カンファレンスルーム

1. 前方視調査の現状報告

沖縄：終了 5 例、術後 3 か月 8 例

順天堂：終了 2 例、術後 3 か月、予定、手術なし、

2. 術後長期の QOL を評価する為の後方視的調査の報告

本年度の脳神経外科学会総会にて報告、統計解析を相談。(下地一彰)

3. MRI delta ADC の解析中間報告 (宮嶋雅一)

4. 遺伝子解析

理化学研究所では倫理委員会承認済、順天堂大学では承認待ち、沖縄では？

5. 来年度の方針：『客観的な指標に基づく疾患概念が確立していない希少難治性疾患について、全国的な疫学調査を行い、全国共通の診断基準・重症度分類の確立を目指す。』

① 初年度は現在行っている前方視調査登録は来年の 9 月 30 日まで、最終の経過観察の終了が再来年の 3 月 31 日である。それまでは現在の調査研究を継続し、次年度は統計学的解析を行う。

② 初年度は手術の ADL 改善への有効性を検証する新たな前方視調査の研究デザインを検討し、プロトコールを作成し、参加施設を募集する。次年度から調査研究を開始する。

③ その他

頭蓋縫合早期癒合症と Δ ADC

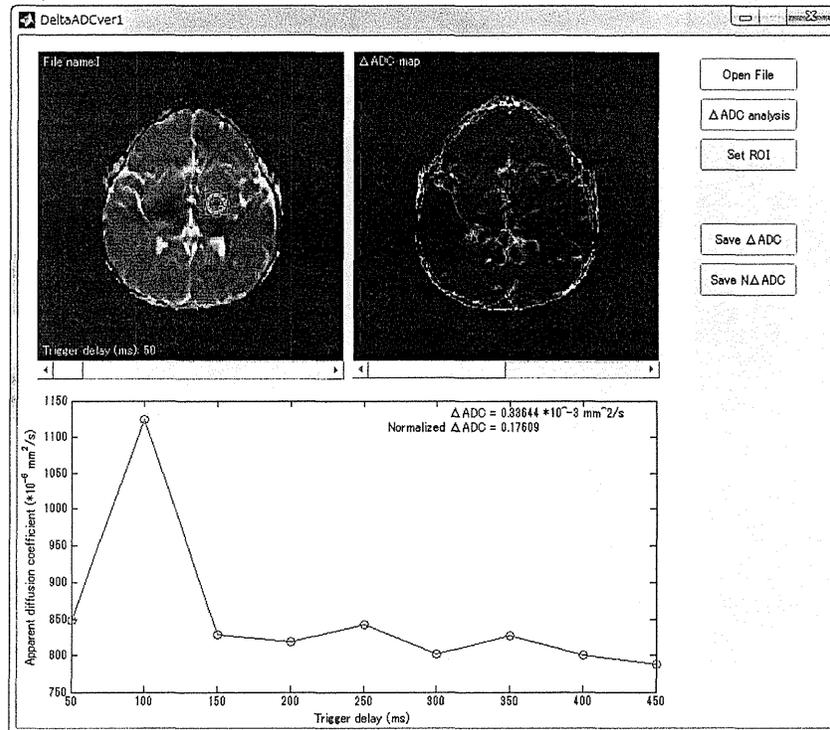
順天堂大学 脳神経外科、神放射線科

Δ ADC

DWI; 生体組織中の水分子のブラウン運動のようなマイクロな動きに感度を持つ.

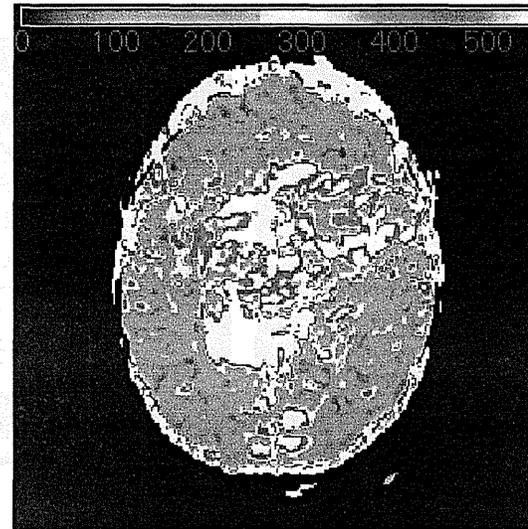
ADC (apparent diffusion coefficient); 脳の見かけの拡散係数

心周期における脳のADCは有意に変化し、更に頭蓋内容積変化に同期している。



$$\Delta\text{ADC} = \text{ADC}_{\max} - \text{ADC}_{\min}$$

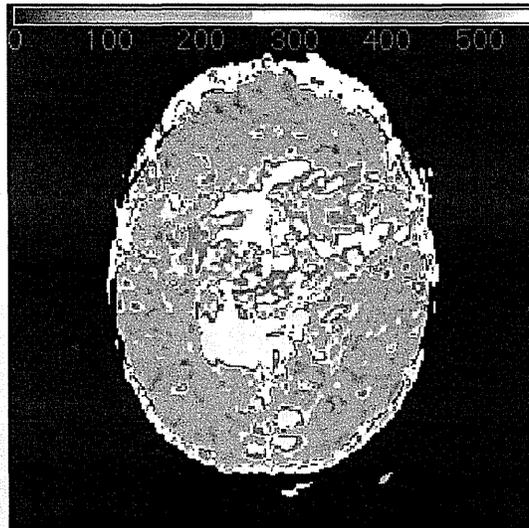
$$\Delta\text{ADC} = 0.38$$



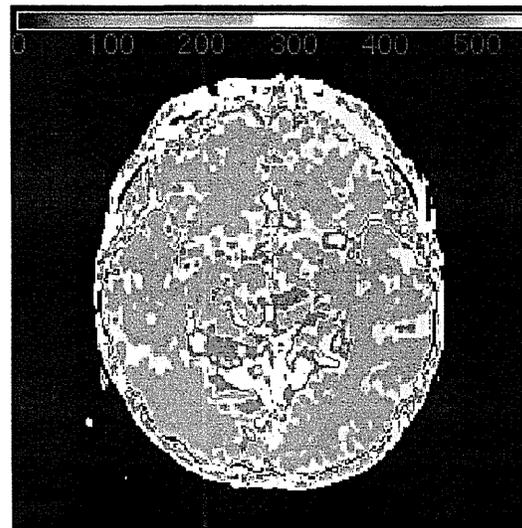
5 y. Control

Δ ADC

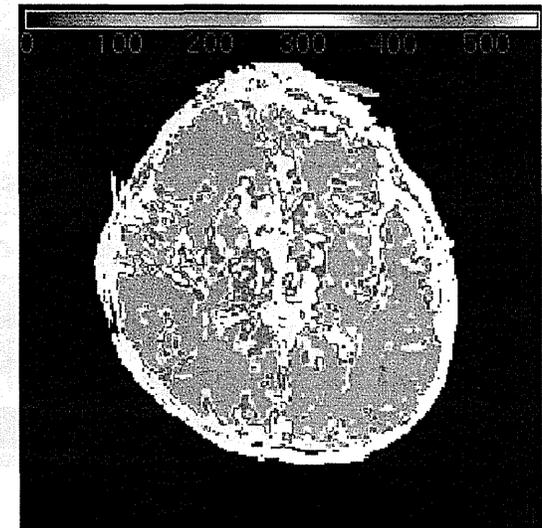
Control



Δ ADC = 0.38

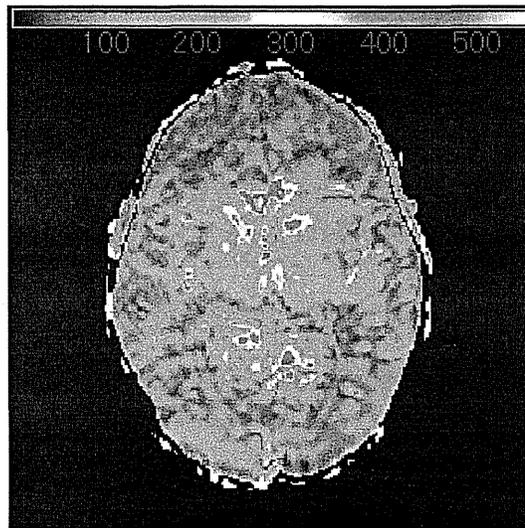


Δ ADC = 0.25

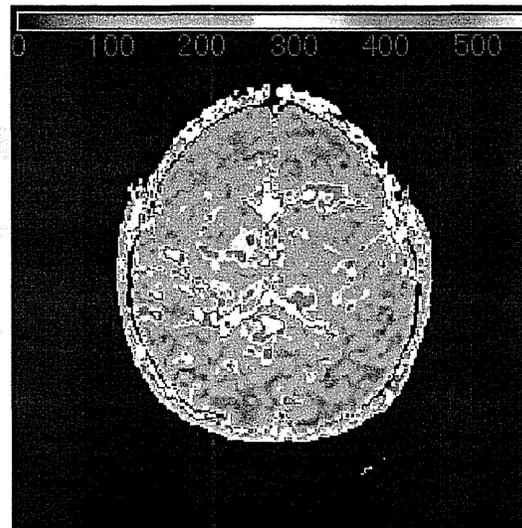


Δ ADC = 0.51

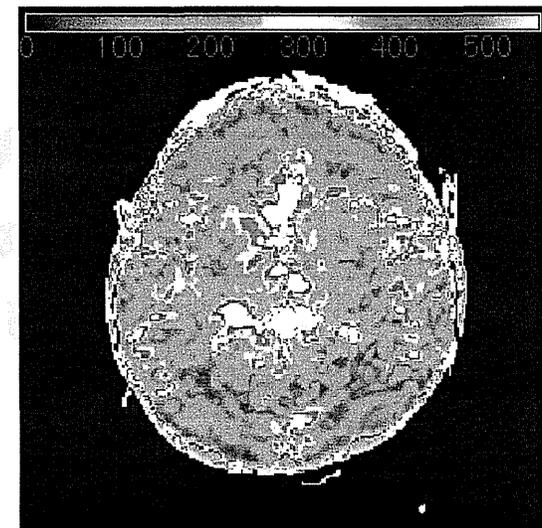
Trigono



Δ ADC = 0.13



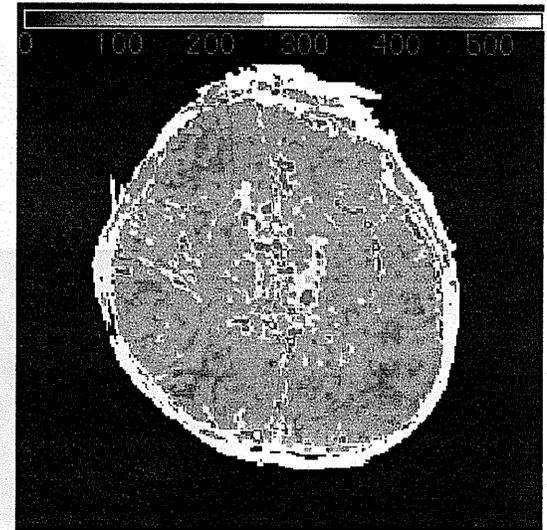
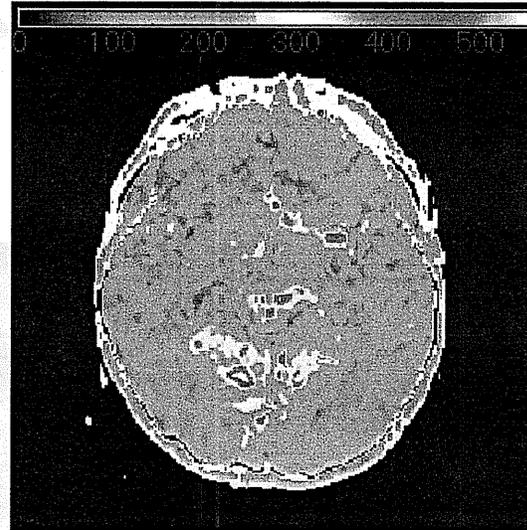
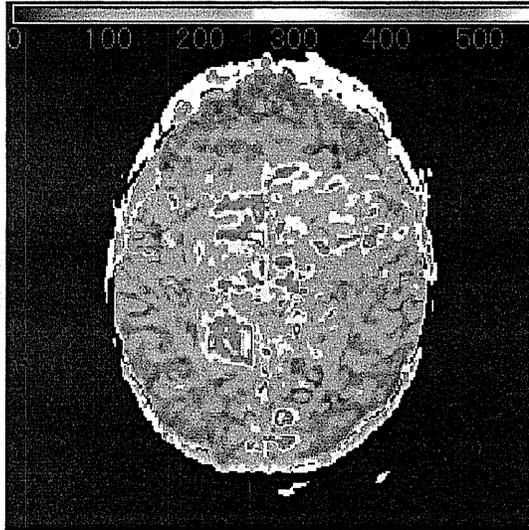
Δ ADC = 0.15



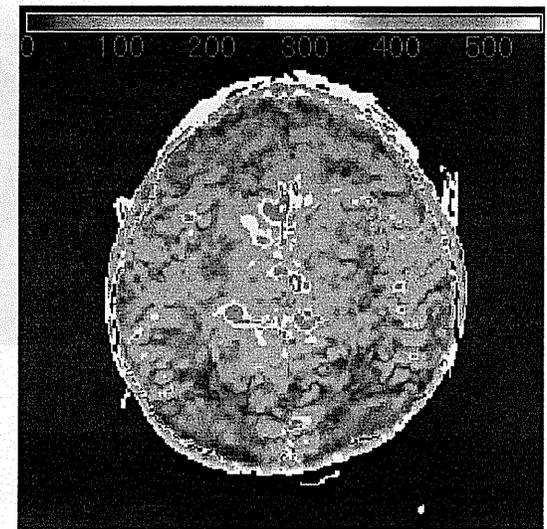
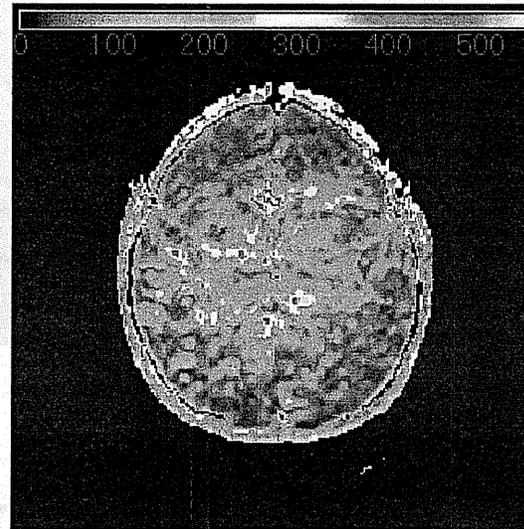
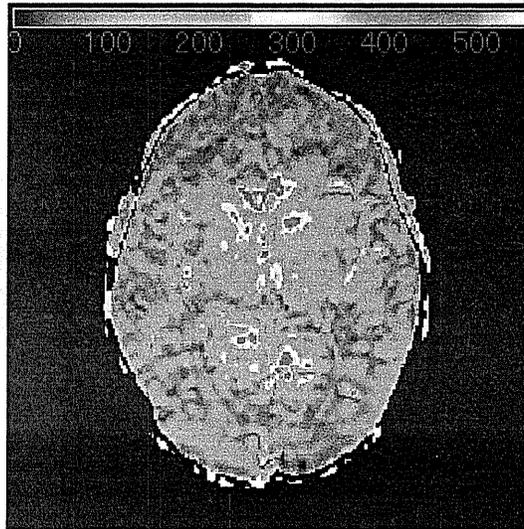
Δ ADC = 0.10

N Δ ADC

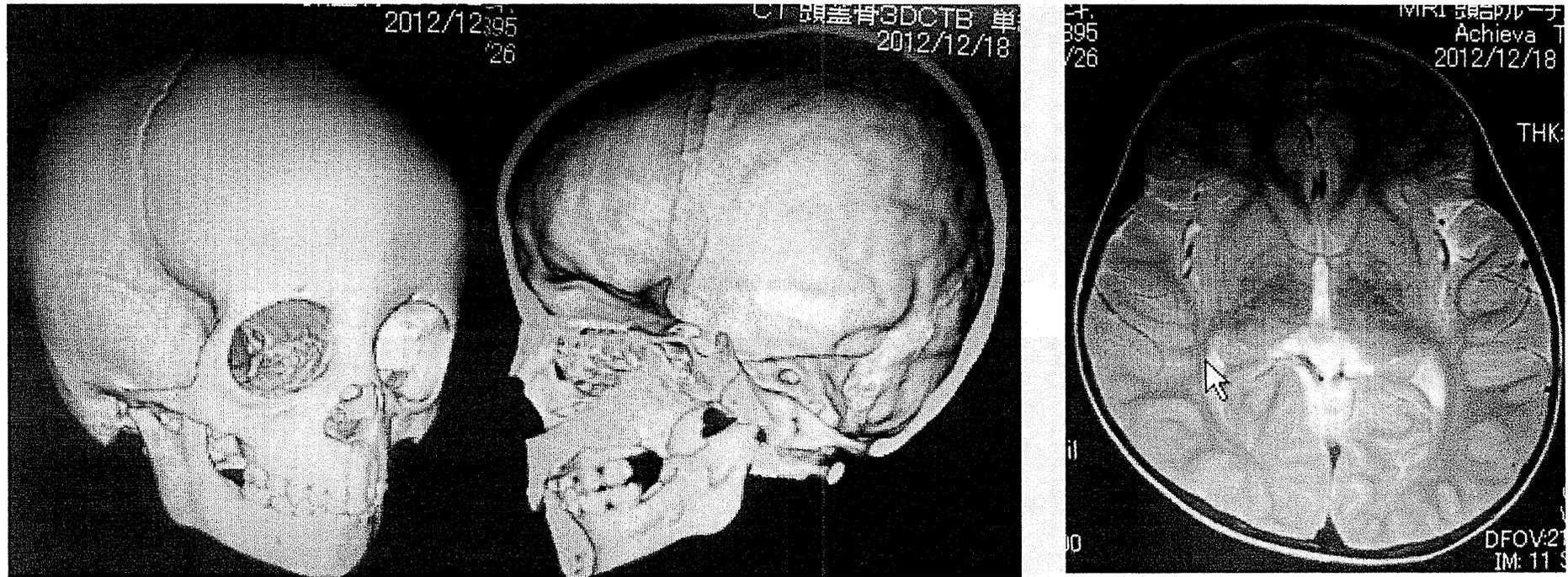
Control



Trigono



Trigono, 2y, Good Response

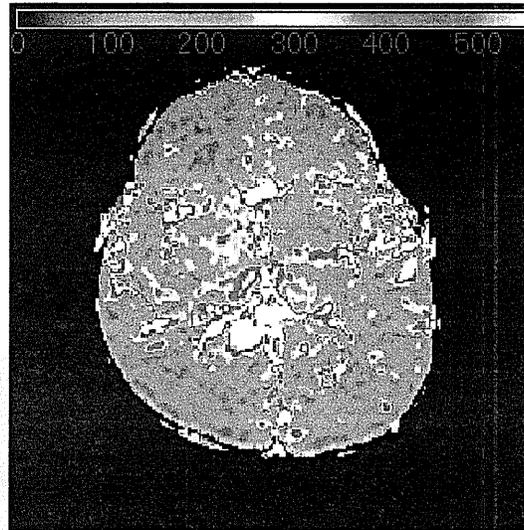


ICP: 17mmHg

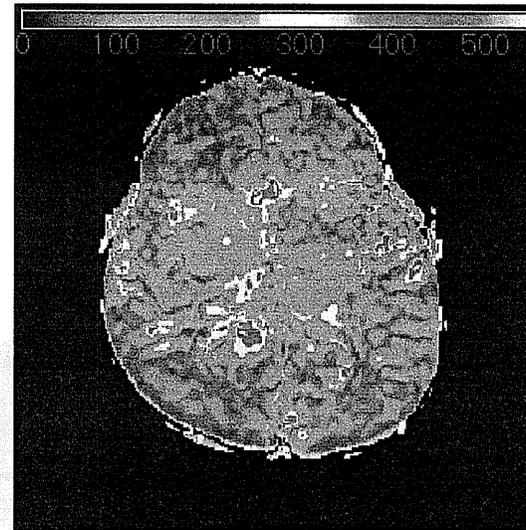
Trigono, 2y, Good Respose

Before OP.

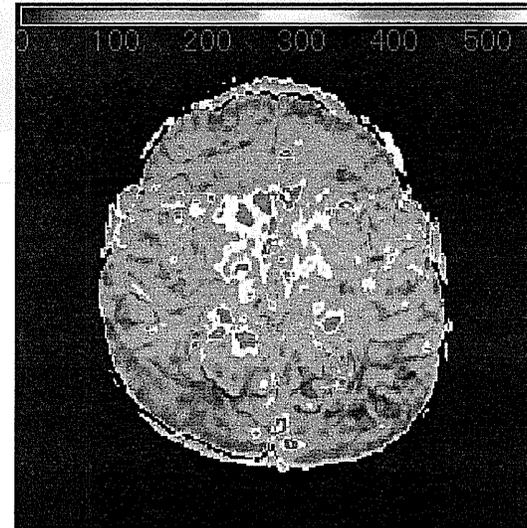
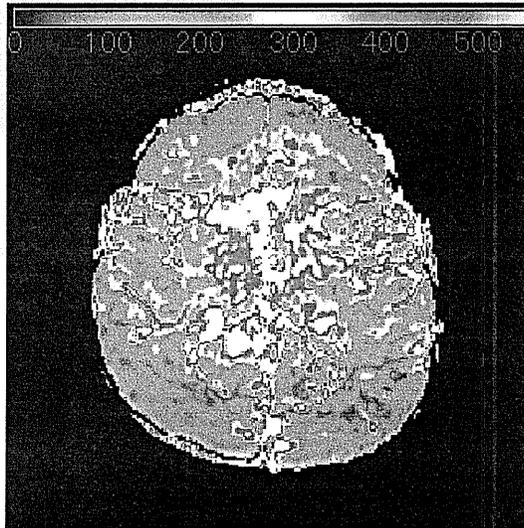
Δ ADC



N Δ ADC

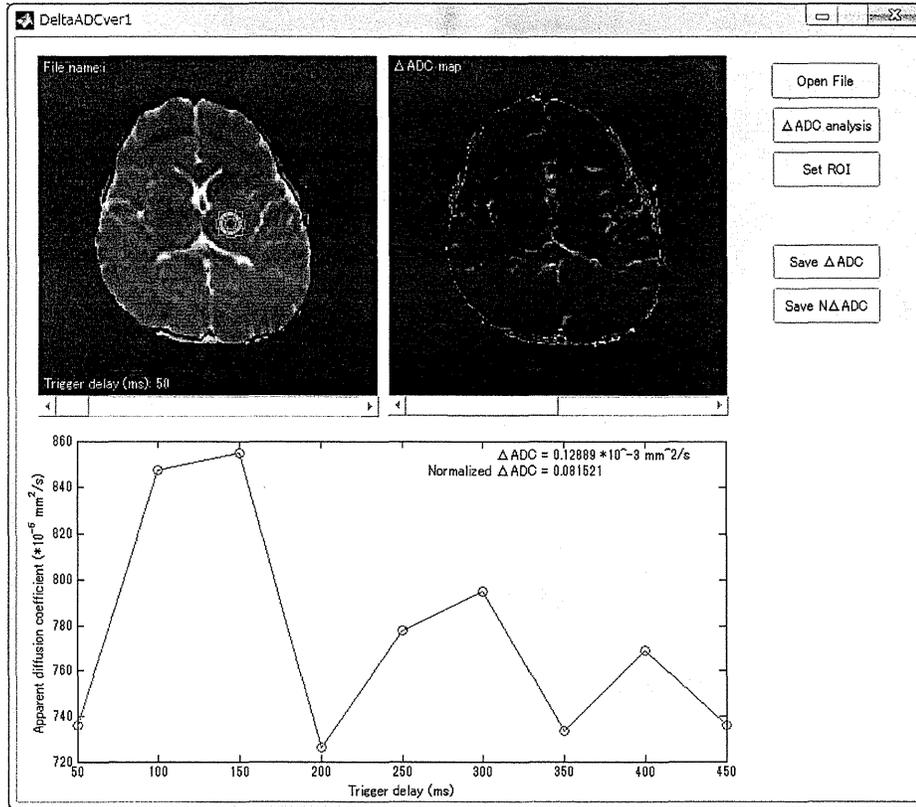


After OP.

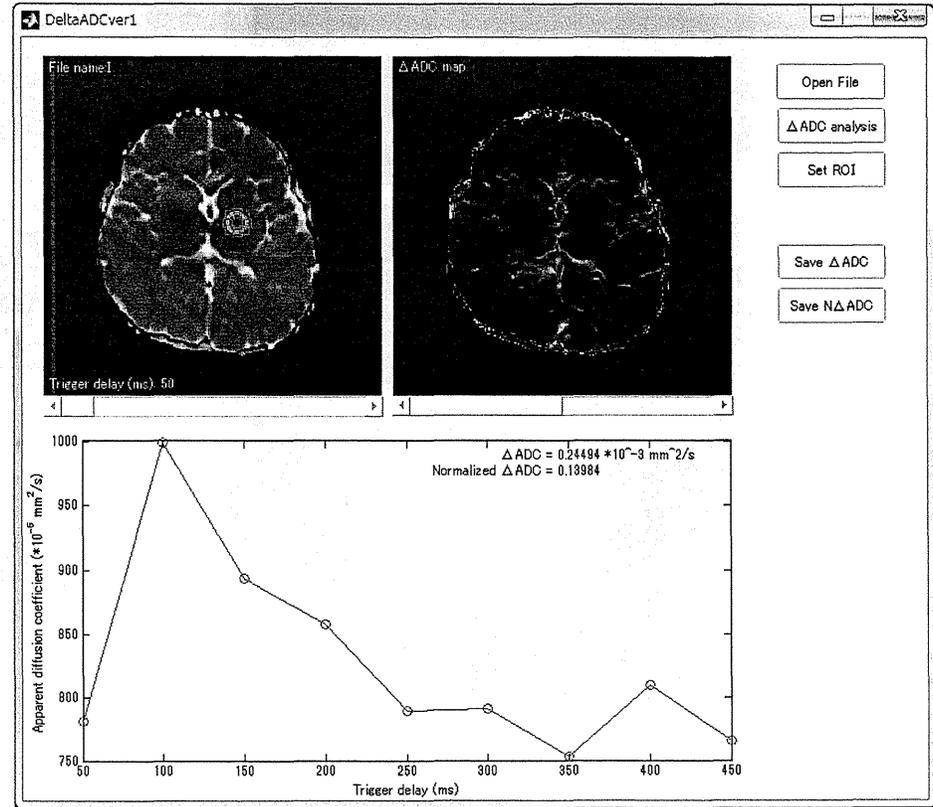


Before OP.

After OP.

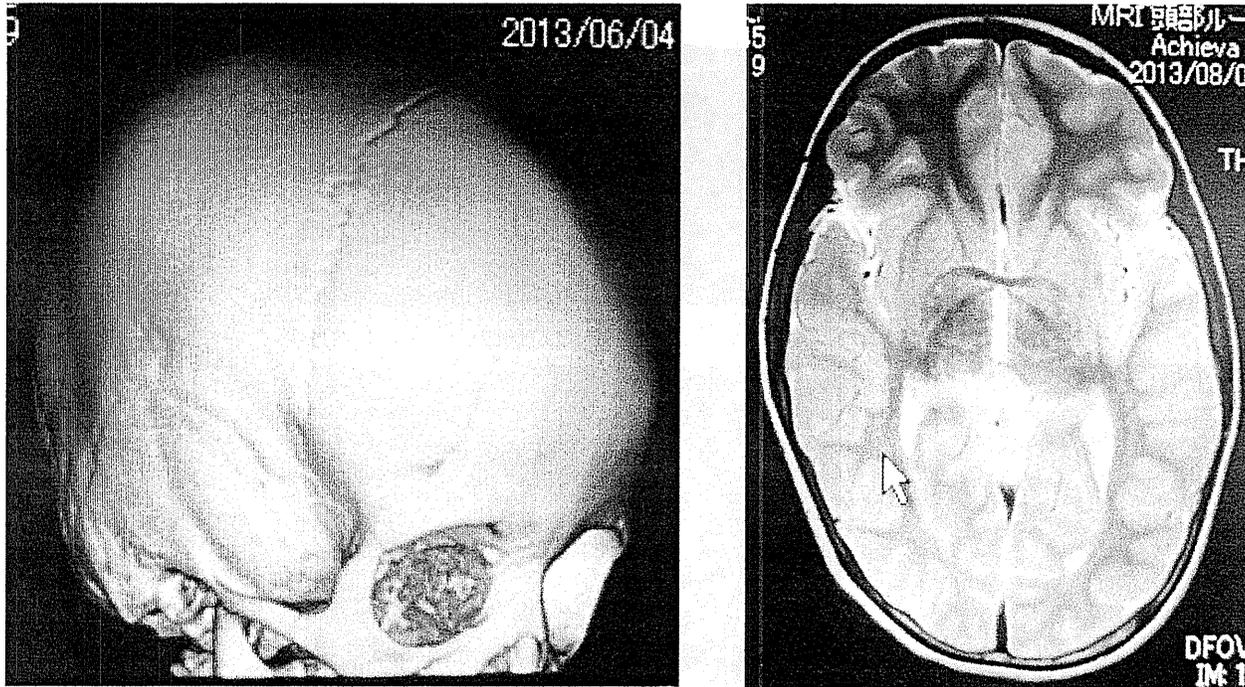


$\Delta ADC = 0.13$



$\Delta ADC = 0.24$

3y, Trigono, Poor Respose



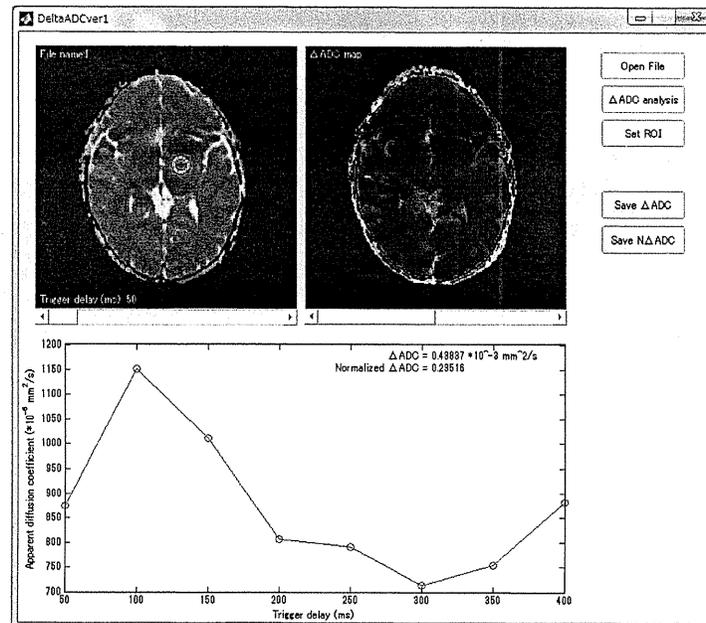
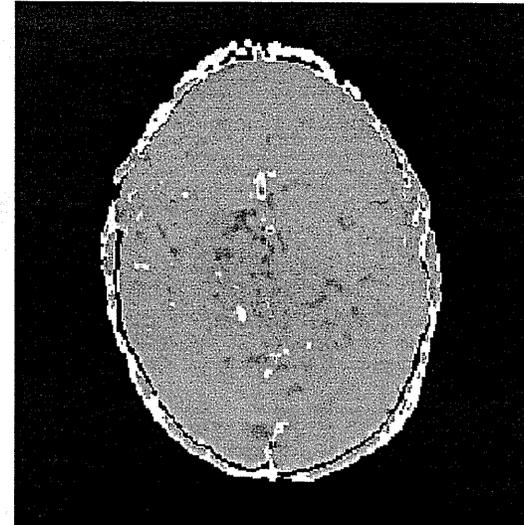
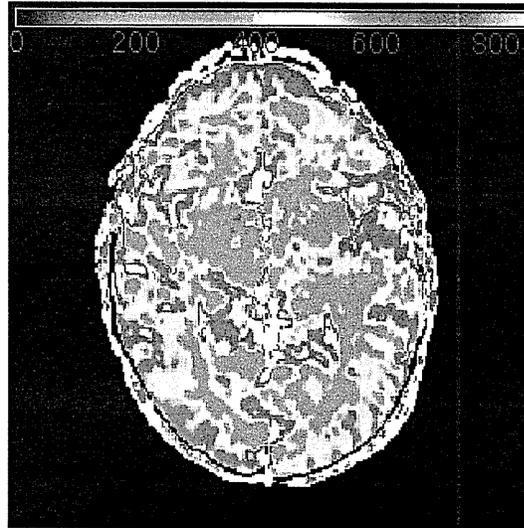
ICP: $\text{Pa}_{\text{CO}_2} 35 = 5 - 7 \text{ mmHg}$, $\text{Pa}_{\text{CO}_2} 40 = 12 \text{ mmHg}$

3y, Trigono, Poor Response

Δ ADC

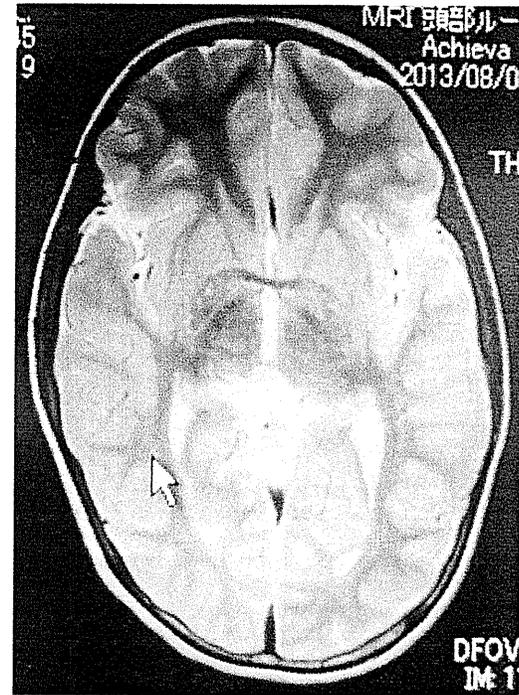
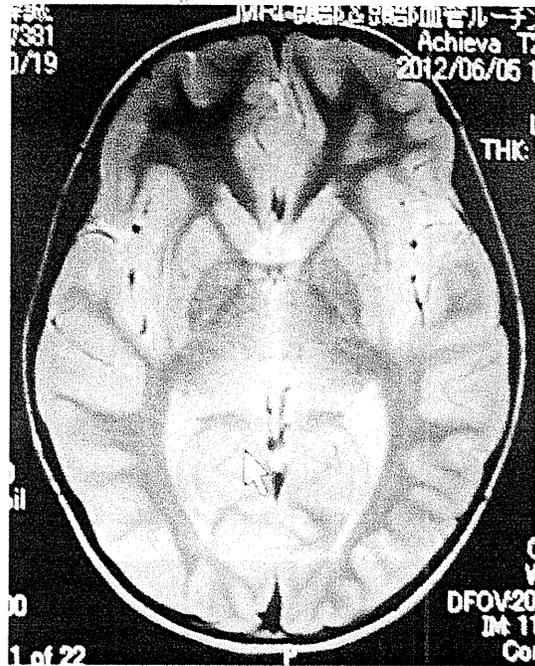
N Δ ADC

Before OP.

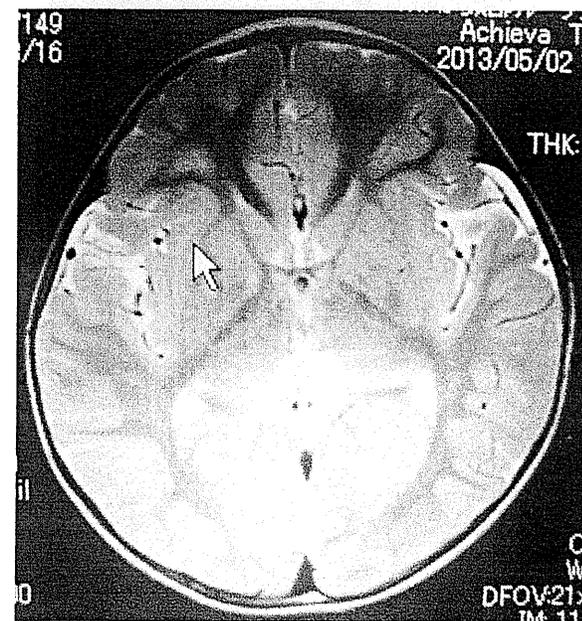
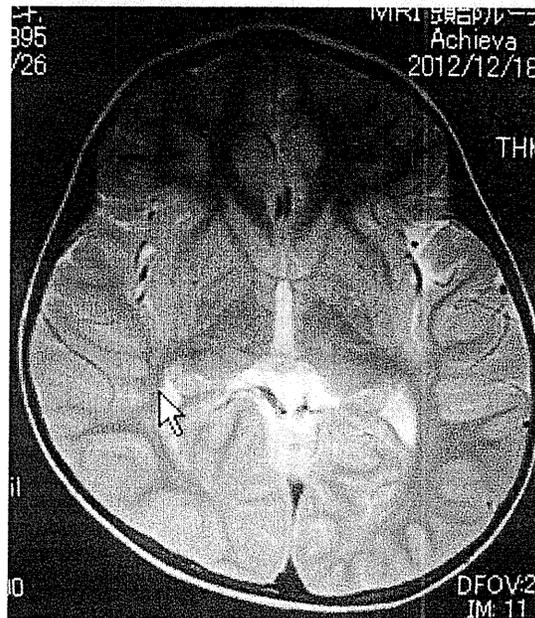


Δ ADC = 0.44

**Control &
Poor Response**



Good Response

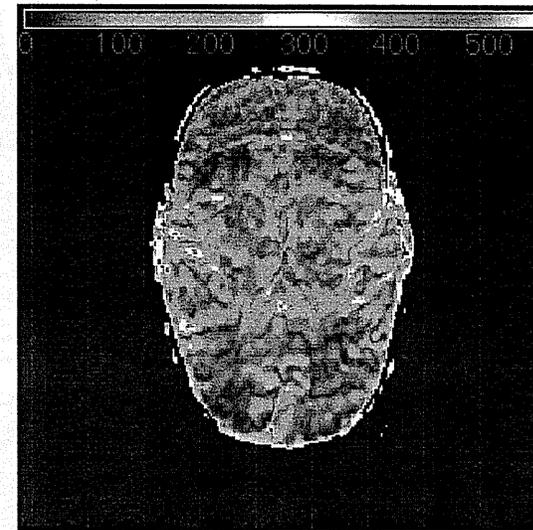
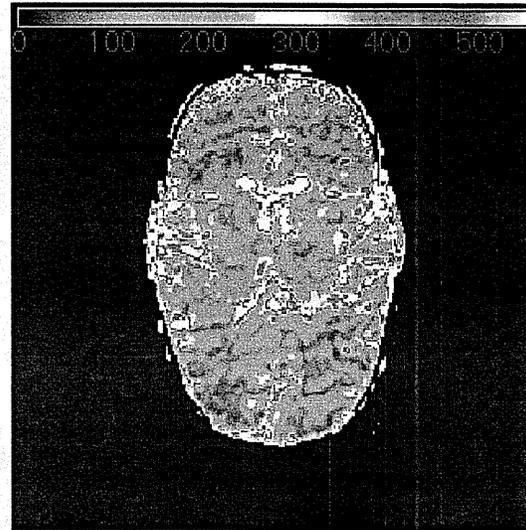


Oy, Scaphocephaly

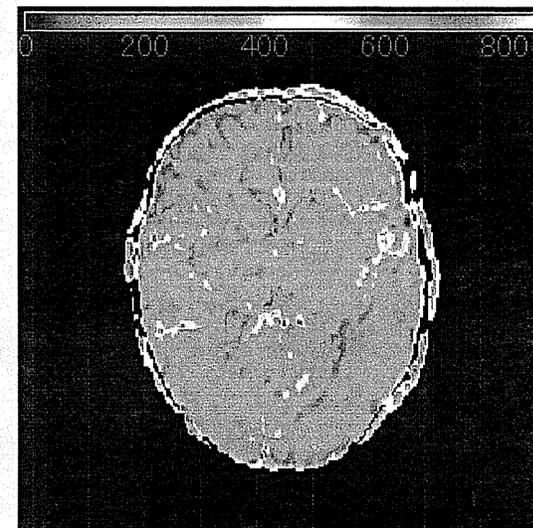
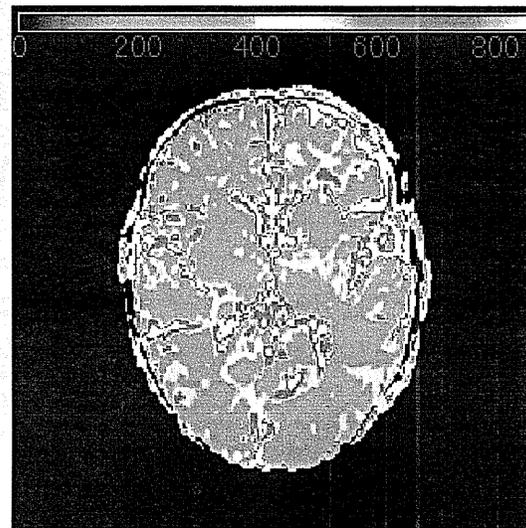
\triangle ADC

N \triangle ADC

Before OP.



After OP.

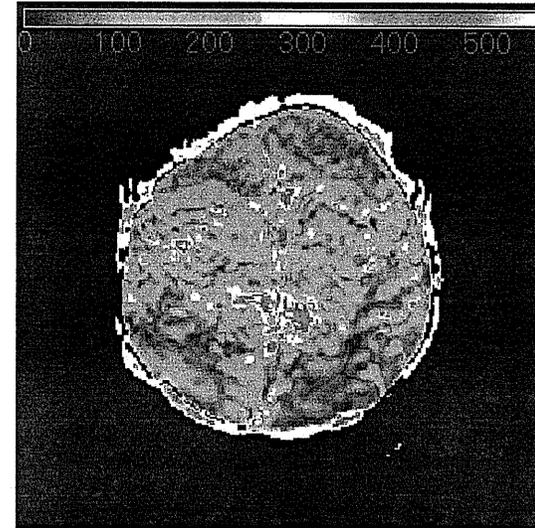
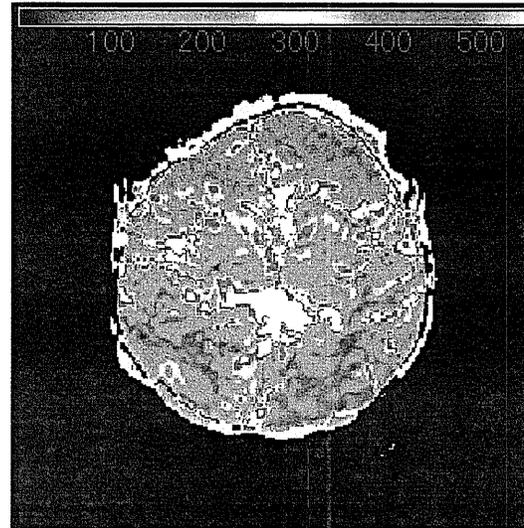


Oy. Plagiocephaly

Δ ADC

N Δ ADC

Before OP.



After OP.

