

ADHS und Kleinhirnwurmtumor: Sensorische und perzeptive Entwicklung mittels anthroposophischer Medizin und bildgebender Diagnostik

ADHD and Cerebellar Vermian Tumor: Sensory and Perceptual Development through Anthroposophic Medicine and Neuroimaging Diagnosis

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Fragestellung

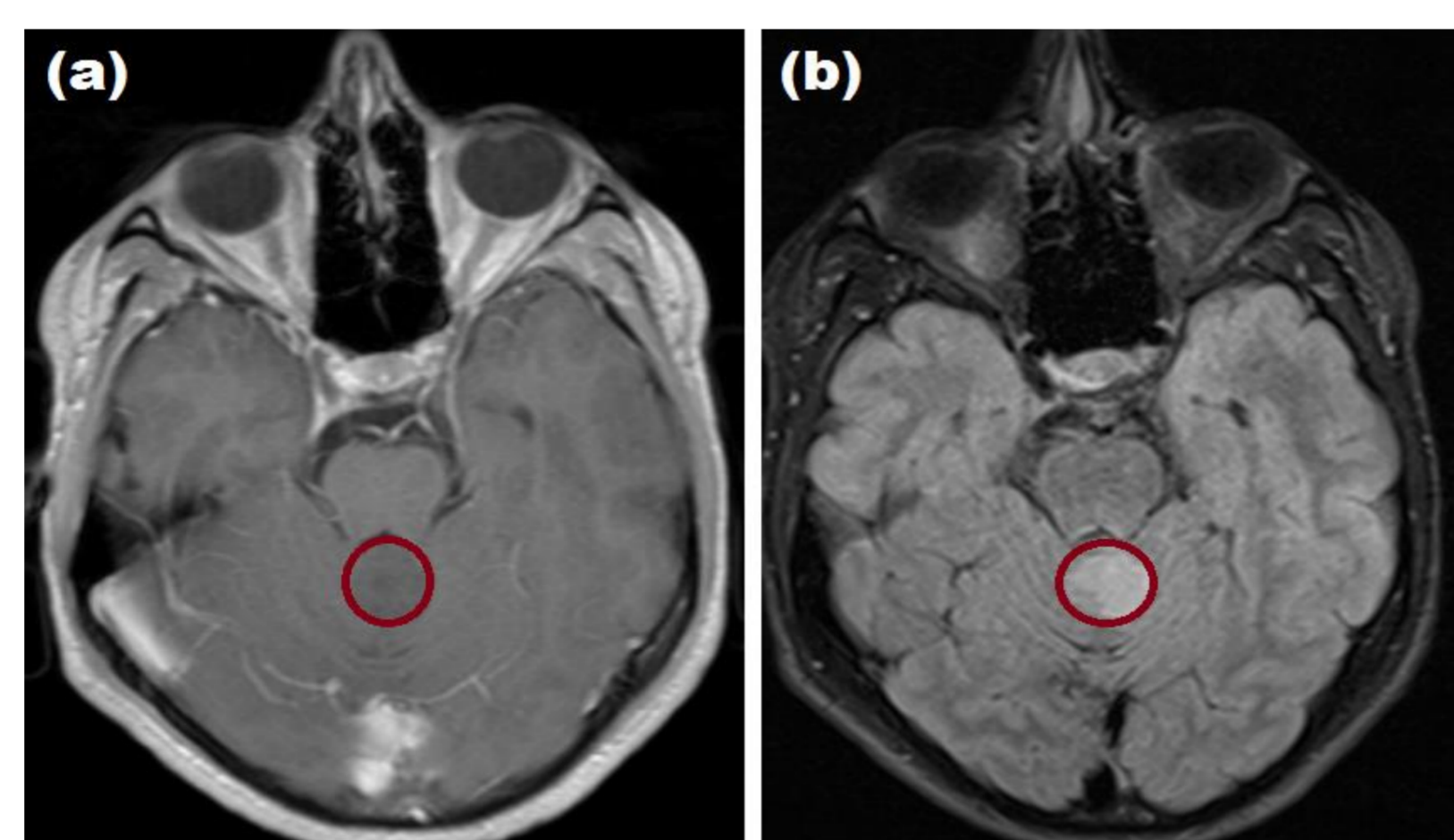
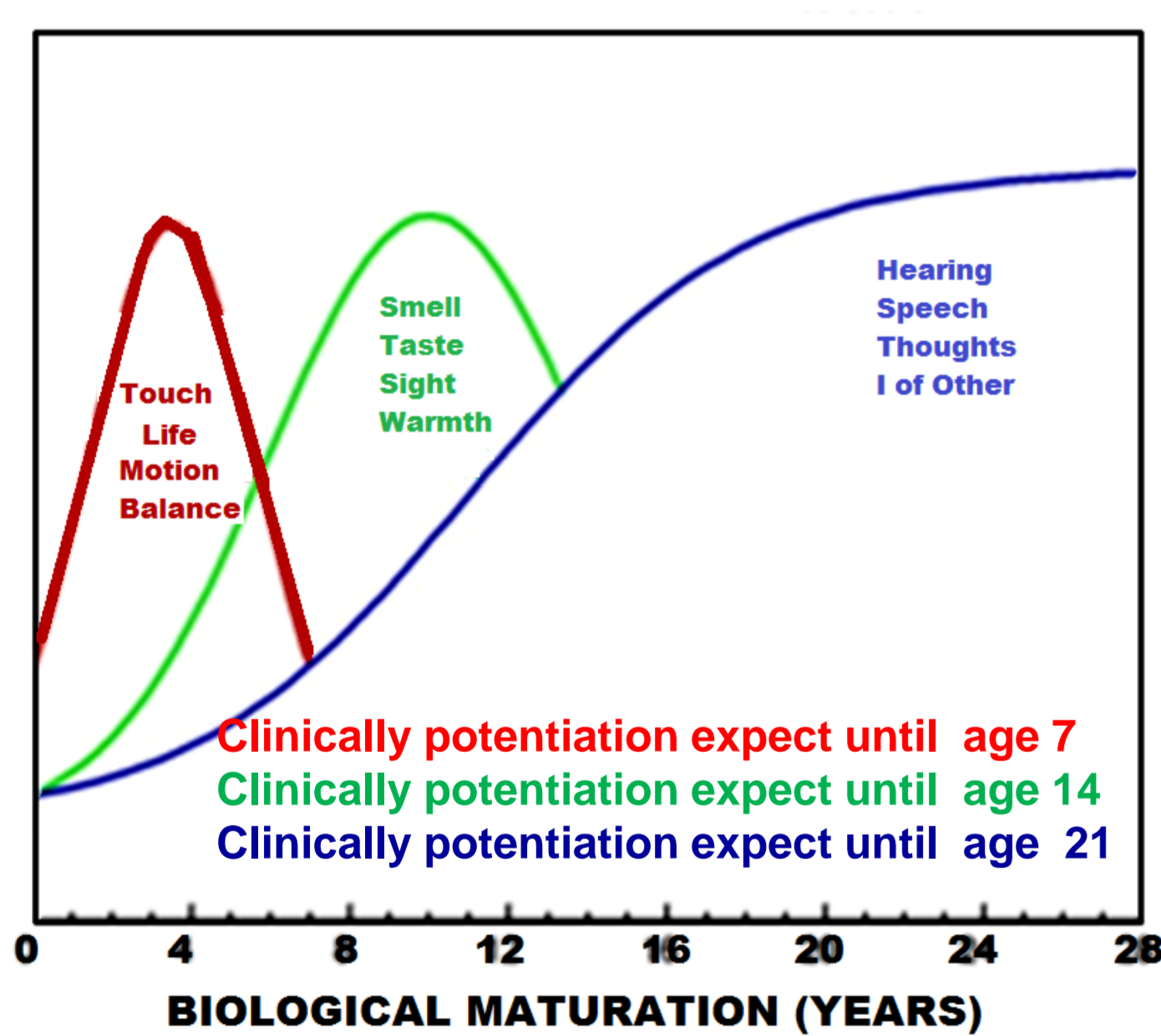
Die anthroposophische Medizin zeigt, wie perzeptive Entwicklung zur Ausreifung des Menschen in den Siebenjahresperioden beiträgt. Die Neurowissenschaften und Neurobildgebung-Techniken beschreiben das perzeptive Phänomen, indem sie die im menschlichen Körper stattfindenden Prozesse i.B. auf Meilensteine der neurologischen Evolution, Lernen und Gedächtnis aufzeichnen [1,2]. Die Diffusions-Tensor-Bildgebung (DTI) ist ein bildgebendes Verfahren, das mit Hilfe der Magnetresonanztomografie (MRT) das Diffusionsverhalten von Wassermolekülen in Körpergewebe misst, was von der Beschaffenheit, Geometrie und Physiologie der Gewebe abhängt. [3] Anhand dieser Information beschreibt dieser Artikel einen Patienten mit Aufmerksamkeitsdefizit-/Hyperaktivitätsstörung (ADHS) und Kleinhirnwurmtumor, dessen DTIs Änderungen aufwiesen und dessen Verhaltens- und Lernprobleme mit anthroposophischer Konstitutionstherapie behandelt wurden.

Question

The Anthroposophic Medicine shows how perceptual development contributes towards the individual's maturing throughout the seven-year periods. Neuroscience and neuroimaging techniques describe the perceptual phenomenon, mapping its processes in the human body in regards to evolutionary neurological milestones, learning and memory [1,2]. Among the existing neuroimaging tools, Diffusion Tensor Images (DTI) are magnetic resonance images (MRI) based on the water molecule displacement in the body, which depends on the constitution, geometry and physiology of the biological tissues [3]. Based on this knowledge, this paper describes a patient presenting Attention Deficit Hyperactivity Disorder (ADHD) and cerebellar vermian tumor, whose DTIs show phenomenological changes, and whose behavioral and learning problems have been treated with anthroposophic constitutional medication.

Materials and Methods:

Age	Patient Evolution Resume	Clinical Approach
5	Hyperkinetic disorder Imbalances in developmental forces and rhythms	
9	•ADHD diagnostic	Methylphenidate
12	• Normal EEG	Non-responsive to Methylphenidate
14	• Behavioral problems	Recommended: reduction of media stimuli and intake of psychostimulant foods +support to learning difficulties + Biological cycles control + Anthroposophic medicines -> improvement of clinical condition.
15	• Worsening of behavior despite of improvement of school performance • Brain MRI: cerebellar vermian tumor – suggestion of pilocytic astrocytoma	Anthroposophic medicines
16	• Brain MRI with DTI: the tumor remains stable during one year (without dimensions or diffusion pattern changes)	Anthroposophic medicines

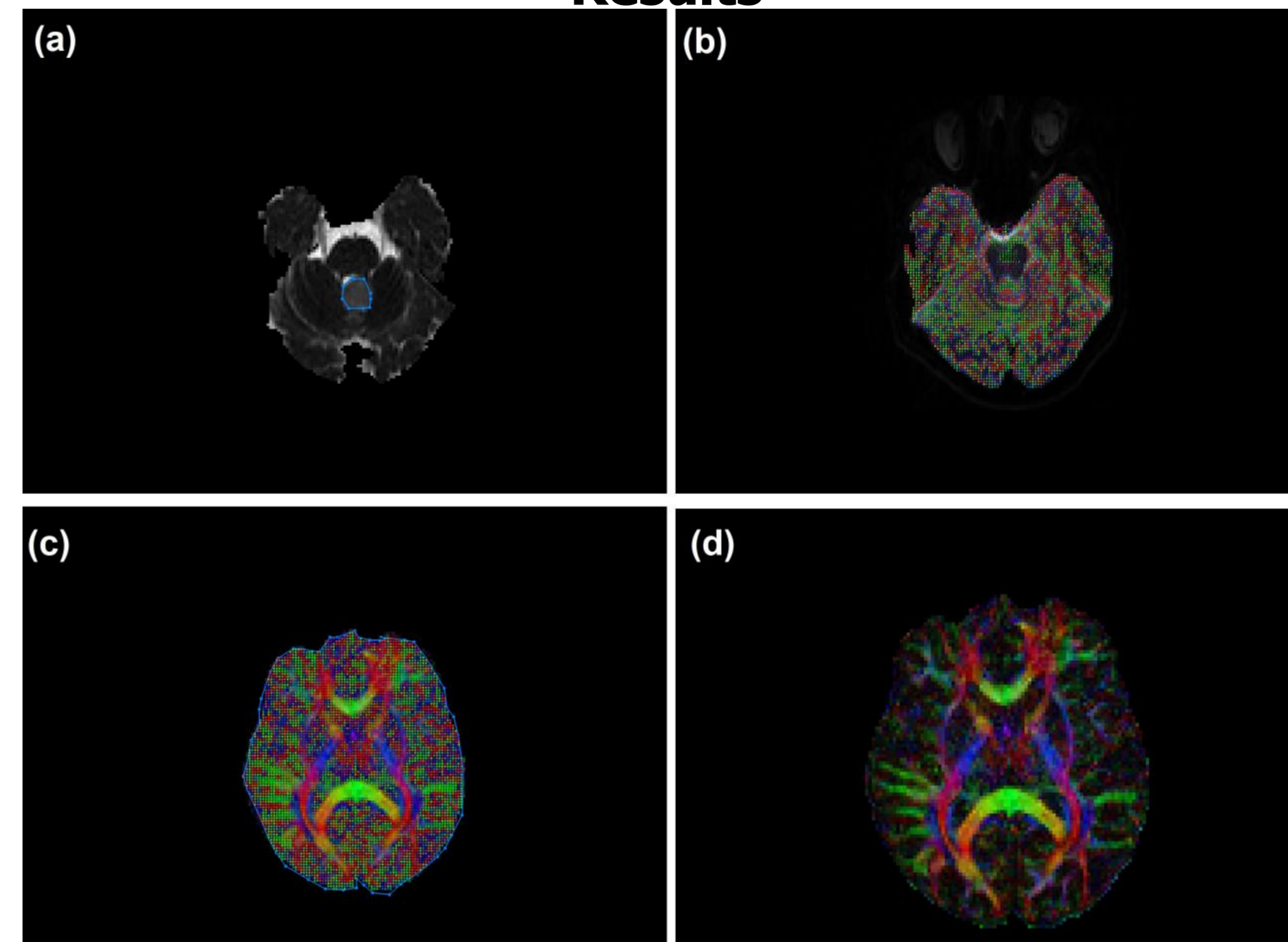


T1 (a) and T2 (b) FLAIR images highlighting the tumor area.

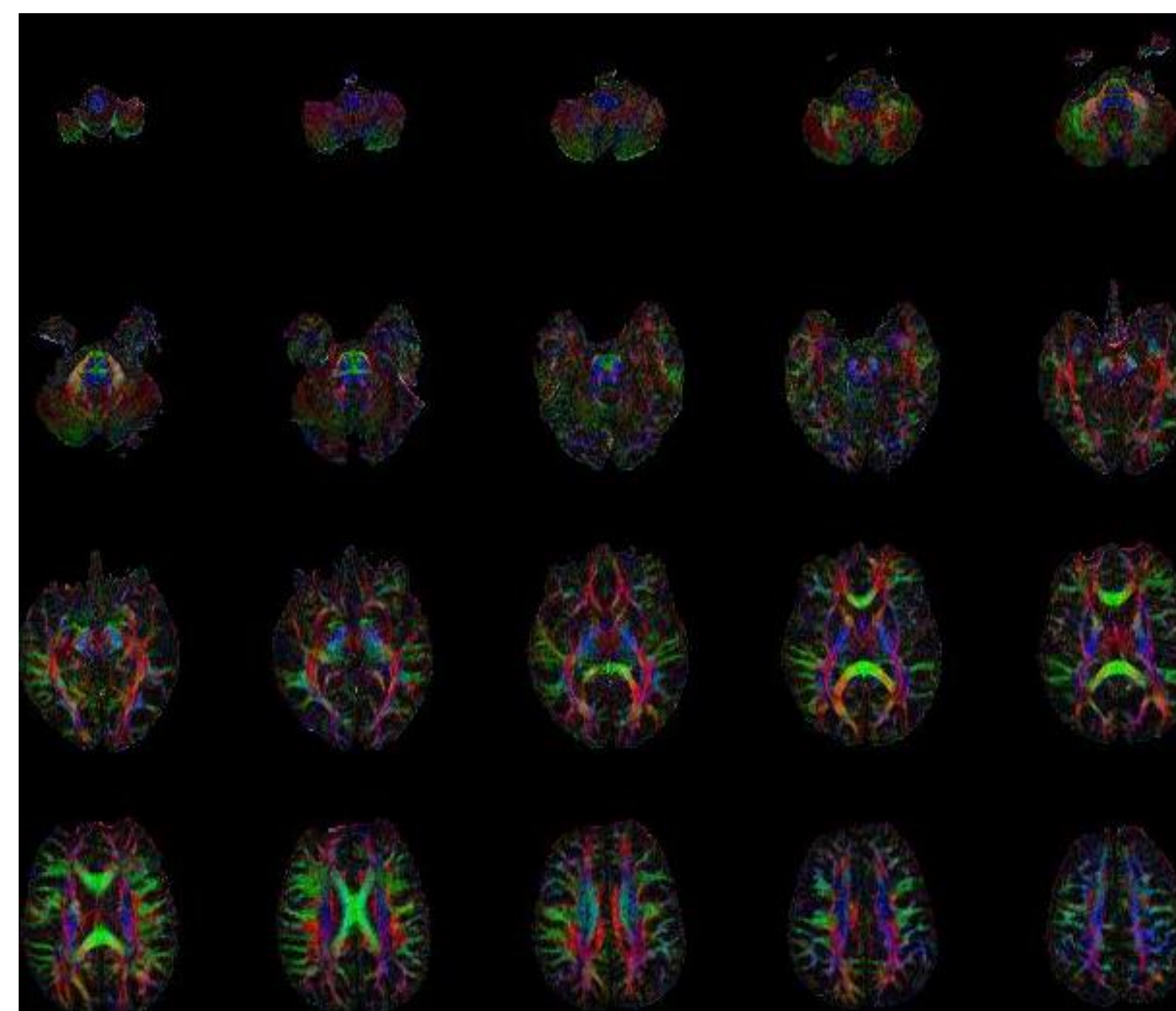
Anthroposophic medicines applied in the last year.

Medicine	Indication	Applied dose
Mistletoe extract, subcutaneously, ampoules	Tumor diseases	Twice weekly assubcutaneous injection
Cichorium 5% globuli p.o.	Stimulation of the rhythmically mediated processes in the organism in terms of harmonization	7 globuli 3 times daily
Oxalis foliun Rh D4 dilution p.o.	Stimulation and harmonization of metabolic processes and of excretory and digestive functions	7 drops 3 times daily
Phosphorus D8+D30 globuli p.o	Together with phosphorus D30, strengthening of regenerative powers and harmonization of the rhythm of waking and sleeping	D8: 10 globuli in the morning daily D30: 10 globuli in the evening daily
Aurum/Prunus D9/D5, subcutaneously, ampoules	Aurum: protection and shield for the life organism Prunus: strengthening of immune defenses	1 ampoule weekly

Results



(a): T2 image with a ROI highlighting the tumor. (b) MD map with diffusion ellipsoids. (c) Corregistration of diffusion ellipsoids and tracts with T2 image. (d): Colour-coded directional map of tracts. Each colour is related to diffusion in different directions. Blue: inferior-superior; green anterior-posterior; red: right-left.



CV maps for diffusion directionality images.

Schlussfolgerungen:

Der Patient wird seit dem 9. Lebensjahr mit anthroposophischen Therapien behandelt. Der festgestellte Tumor hat sich nicht so aggressiv entwickelt, wie es von einem typischen Astrozytom zu erwarten wäre. Sein Diffusionsverhalten und seine Größe waren ein Jahr lang unverändert. Durch seelische Betreuung und Neurobildgebung-Techniken gewinnen wir ein besseres Verständnis der perzeptiven Entwicklung und der ärztlichen Verfahren.

Conclusion:

The patient has been treated with anthroposophic therapies since age 9. The detected tumor has not shown the aggressive evolution that is typical of astrocytomas. Its diffusion patterns and size has remained unchanged during one year. Spiritual care and neuroimaging techniques advance the understanding of perceptual development and medical procedures.

References*:

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- [3] Souza EM, Castellano G, Baldissin MM, Costa ET. Imagens de Ressonância Magnética Ponderadas por Difusão e Mapas de ADC Aplicados ao Estudo de Tumores Cerebrais: atualidades e perspectivas. In: Neurociências e Epilepsia. 1 ed. São Paulo: Plêiade, 2011, v.3, p. 115-120.

* Bisher wurden die Bücher des Verfassers nur in Portugiesisch und Spanisch herausgegeben. To date, the author's books have been published only in Portuguese and Spanish.