The Human Thalamocortical Dysrhythmia: Pathophysiology and Treatment

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From Dream to Reality

Living with a neuropsychiatric or neurological disease is a serious handicap for the patient, his/her family and the society. When medicine becomes powerless in the face of diseases that are resistant to all conventional therapeutic procedures, the physician and the scientific dream of finding an innovative therapy.

A world first, the Swiss team of the neurosurgeon and Professor Daniel Jeanmonod, University Hospital of Zurich, come to realize the dream to heal the invisible wounds of the brain that cause unbearable pain.

These physicians and researchers in Zurich have used the method of "high-intensity focused ultrasounds", which consists to increase the temperature of the affected area until 55-57 °C, thus destroying it by thermocoagulation. This procedure takes place under conditions of an outpatient procedure in the conscious patient (no anesthesia), is non-invasive and painless. It reaches exactly the target under continuous high-resolution visual magnetic resonance guidance and thermometry. The therapeutic effect comes immediately and proceeds over months for some symptoms.

This breakthrough therapy, which attacks the invisible disease without invasive surgery, opens new horizons for treating various neurological and neuropsychiatric disorders.

Thalamocortical dysrhythms represent a neurophysiological marker through which Professor Jeanmonod and his colleagues attempt to explain the positive and negative symptoms caused by neurological disorders (e.g., neurogenic pain) and neuropsychiatric (e.g., obsessive compulsive disorders and psychosis). These dysrhythms represent a dysfunction of the thalamocortical network. The anatomofunctional exploration of these dysrhythms is a must to locate dysfunctional thalamic areas in order to heal them.
