Psychosurgery

W. JEFF ELIAS, M.D.¹ AND G. REES COSGROVE, M.D., F.R.C.S.C.²

¹Department of Neurosurgery, University of Virginia Health System, Charlottesville, Virginia;
and ²Department of Neurosurgery, Lahey Clinic Medical Center, Burlington, Massachusetts

SURGERY for psychiatric disease is experiencing a rebirth as neurosurgeons employ deep brain stimulation techniques and show an improved understanding of limbic circuitry obtained from functional cerebral imaging. These treatments have now been welcomed by psychiatrists and their patients, who have been without surgical options for decades. The rampant use and abuse of frontal leukotomy in the mid 20th century remains a sobering memory.

WE ARE PLEASED to introduce the July 2008 issue of *Neurosurgical Focus*, which is devoted to the topic of psychosurgery. Tremendous advances in our knowledge of limbic circuitry and neurochemistry have invigorated numerous investigative centers around the world to employ rigorous and honest scientific methods in the study and treatment of patients with mood and anxiety disorders.

The first series of papers in this issue is devoted to the history of psychiatric surgery. A paper by Manjila and colleagues notes that an unknown pioneer in the field, Dr. Gottlieb Burckhardt, performed the first human experiments for psychological disorders by excising regions of the cerebral cortex in the 19th century—for which he was roundly criticized. Soon thereafter, the psychiatric environment changed and became more favorable so that Dr. Egas Moniz was able to perform the first human prefrontal leukotomy, as noted in the paper by Wind and associates. Elias et al. observe that much of our current understanding regarding the parallel limbic circuitry of the striatum was obtained later from the neuroanatomist Dr. Lennart Heimer,

who developed a track-tracing method and used it to discover the pathways of the ventral striatum.

We are also very pleased to present several contemporary clinical articles pertaining to neurosurgical procedures for mood disorders including depression, anxiety, addiction, and aggression. These articles form an excellent reference set for future clinical trials and studies. The clinical section begins with a comprehensive discussion from two renowned experts (Abosch and Cosgrove) regarding the biological basis for neurosurgical intervention. This written work alone serves as an authoritative reference for what is currently understood about the biology of depression, and we are pleased to provide a podcast as well (<http://nsforum.org/>) with further thoughts from the authors. Contemporary ablative procedures are still quite effective, and Dr. Eljamel discusses his experience with stereotactic cingulotomy and anterior capsulotomy. Addiction, a disorder so constantly present in our society, is reviewed by Visser-Vandewalle and colleagues as a potential target for future neurosurgical techniques. Last, Dr. Fountas reviews the management of aggression using stereotactic amygdalotomy.

The final section of the issue is devoted to laboratory investigations in the field of psychiatry. It is a true sign of the future to observe neurosurgical groups such as Wekenhuyzen and colleagues actively studying psychiatric conditions such as anorexia nervosa. This is only the beginning of new developments in this field, and we anticipate much more interest in the science and treatment of psychiatry by neuroscientists and clinicians. We hope you enjoy this issue.