

# Spindle Coma: Observations and Thoughts

Aurea Nogueira de Melo, Gregory L. Krauss and E. Niedermeyer

## Key Words

Brainstem Reticular Formation  
CNS Damage, Acute  
Coma  
Electroencephalography  
Sleep vs Coma  
Spindle Coma

## INTRODUCTION

The occurrence of sleep spindles in patients with impaired consciousness and possible coma was first noted by Jasper and Van Buren;<sup>1</sup> these patients suffered from deep-seated neoplastic lesions (hypothalamus, posterior fossa). On a larger scale, spindle activity as well as vertex waves and K complexes in comatose patients with CNS trauma were reported by Chatrian and coworkers.<sup>2,3</sup>

The reports of Chatrian and his associates kindled much interest in spindle coma and the existence of this type of coma was subsequently confirmed.<sup>4-16</sup> In these studies, cranio-cerebral trauma was found to be the predominant or even sole cause of spindle coma. Nevertheless, spindle coma has proved to be of polyetiological nature; this has been most clearly confirmed by Britt<sup>12</sup> who presented 36 nontraumatic cases.

The conjunction of physiological sleep EEG patterns and coma has not ceased to baffle the investigators of this phenomenon, which asks for an explanation. Hardly any hypothesis or concept has been offered with the remarkable exception of Chatrian.<sup>17</sup>

Spindle coma is a thought-provoking electroclinical entity. This mere fact has been the incentive for this report.

## MATERIAL AND METHODS

This study is based upon 11 patients who were observed over a 32 month period from January 1987 to August 1989. There were 4 male and 7 female patients; their ages were 7 months, 15, 16, 19, 21, 22, 25, 27, 28, 34 and 46 years. The depth of coma was regarded as light in 3 and profound in 8 patients. "Light coma"

resembled "stupor";<sup>18</sup> these patients were shortly responsive to strong arousing stimuli.

The etiologies of the comatose state are listed in Table 1. All patients had nontraumatic etiologies. This fact, however, is related to sampling, since patients with acute severe CNS trauma were usually treated in the Neurological Critical Care Unit where the use of EEG is essentially limited to complications in the course. The patient material was collected from the files of the EEG Laboratory; the clinical data were gleaned from the charts.

Almost all of the EEG studies were done as bedside (portable) recordings with the use of a 10-channel EEG apparatus. Gold-plated silver cup electrodes were placed according to the International (10-20) System. All of these EEG studies were routine recordings of rather limited duration; no prolonged diurnal or nocturnal sleep recording was carried out.

## RESULTS

### Case Reports

The most relevant clinical and EEG data are presented in Table 1. Two cases, however, with unusual clinical and EEG features are singled out as case reports.

### Case S.E.

#### CLINICAL DATA

A 19-year-old woman was admitted with meningoencephalitis associated with fever, progressive stupor, coma and CSF lymphocytosis. The patient was mechanically ventilated and treated with general medical support. Neurological examination was significant for deep

Dr. Nogueira de Melo is Assistant Professor at Faculdade de Medicina, Universidade Estadual Paulista, Botucatu, Sao Paulo, Brazil. She presently is Visiting Assistant Professor in Electroencephalography at the Department of Neurology, Johns Hopkins University School of Medicine, Baltimore, Maryland. Dr. Krauss is a Fellow in Epileptology (Neurology), and Dr. Niedermeyer is Professor of Neurology and Neurological Surgery, Johns Hopkins University School of Medicine, Baltimore, Maryland.

Requests for reprints should be addressed to Ernst Niedermeyer, M.D., The Johns Hopkins Hospital, Meyer 2-147, 600 North Wolfe Street, Baltimore, Maryland 21205.

# Thoughts From A Coma

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