Correspondence

Levodopa for Parkinsonism

To the Editor.—During 1970, three patients were operated upon at Ekmanska Hospital, Gothenburg (Sweden) while receiving levodopa therapy for parkinsonism. One patient, a 75-year-old man, had had slight asthma, coronary insufficiency, and Parkinson's disease with tremor and akinesia for 10 years. Levodopa, 1,200 mg/day, led to considerable improvement. He underwent prostatectomy while anesthetized with droperidol, fentanyl, succinylcholine, and nitrous oxide. The second patient, a 60-year-old man, had a 10-year history of Parkinson's disease which had been significantly alleviated by levodopa, 3,200 mg/day. Bladder stones were successfully removed during anesthesia with barbiturate, nitrous oxide, halothane, and succinylcholine. The third patient, a 74-year-old woman, had some cardiac insufficiency and a 15-year history of Parkinson's disease which had been considerably alleviated by levodopa, 1,750 mg/day. This patient underwent right mastectomy for carcinoma during anesthesia with barbiturate, nitrous oxide, and halothane. No unusual circulatory responses, including hypertension, hypotension or arrhythmias, were noted during or after operation. Details concerning these patients were reported in Opuscula Medica 16: 21, 1971.

In all these patients levodopa was continued up to the night before operation and reinsti-

uted the morning after operation with no observable adverse effects on their neurologic status. This observation is in accord with observations reported by Rao (Lancet II: 470, 1970). The neurologic improvement appears to be dependent more on the concentration of dopamine in the brain than on the concentration in serum.

The serum level of levodopa is extremely variable (Anden et al., Acta Med. Scand. 187: 247–255, 1970), and the circulatory state seems to be dependent on this factor. Since the half-life of levodopa is a matter of a few hours, discontinuance 12 hours before anesthesia and operation seems to allow a safe margin, in accord with my observations and the predictions of Goldberg (Anesthesiology 34: 1–3, 1971). The above-mentioned techniques of anesthesia were not likely to stimulate the sympathoadrenal system, provided hypoxia and/or hypovolemia did not occur. In operations without complications, circulatory homeostasis seems to be preserved in patients withdrawn from levodopa for 12 hours, and 24 hours of withdrawal does not seem to endanger their neurologic status.

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Accuracy of HbO₂ Determinations

To the Editor.—The recent report by Theye¹ on the calculation of blood O₂ content from optically determined Hb and HbO₂ confirms older observations.²–⁴ These reports indicate that the percentage of oxyhemoglobin measured by the spectrophotometric method was higher than that measured by the Van Slyke method. None of the explanations offered could account completely for such discrepancies. A factor not discussed by any of the authors is that hemolysis of blood will dilute 2,3-DPG ⁵ and alter its binding on the hemoglobin molecule so as to increase the affinity of heme for oxygen. Such a factor would be most marked on the steep portion of the curve. Therefore, one might expect a