Predictive Factors of Postoperative Outcome in Patients with Primary Cerebellar Hemorrhage

Tsung-Han Lee MD; Chu-Mei Lan PhD; Tsung-Ming Su; Yu-Hua Huang; Chih-Feng Chen MD; Hui-Ping Tsai BS; Cheng-Hsien Lu; Tao-Chen Lee MD; Aij-Lie Kwan MD, PhD

1. Division of Neurosurgery, Department of Surgery, Kaohsiung Chang Gung Memorial Hospital and Chang Gung University College of Medicine, Kaohsiung, Taiwan

2. Graduate Institute of Medicine, College of Medicine, Kaohsiung Medical University, Kaohsiung, Taiwan

Introduction

Intracerebral hemorrhage (ICH) causes 10% to 15% of first-ever stroke, with a 30-day mortality rate of 35% to 52%. Death at 1 year varies by location of ICH: 51% for deep hemorrhage, 57% for lobar, and 42% for cerebellar. Only 21% to 38% of patients with ICH were independent at 6 months. The purpose of this study was to describe prognostic factors for postoperative outcome in patients with acute cerebellar hemorrhage.

Methods

Over a period of 5 years (2007-2011), 48 adult patients, retrospectively identified as having acute cerebellar hemorrhage using preexisting standardized evaluation forms at Kaohsiung Chang Gung Memorial Hospital underwent neurological surgery. Baseline demographic and clinical data were recorded. Outcome was assessed 2 years following neurological surgery using the 5-point Glasgow outcome scale (GOS). Good outcome was defined as GOS 5 and 4; poor outcome was GOS 3, 2, and 1.

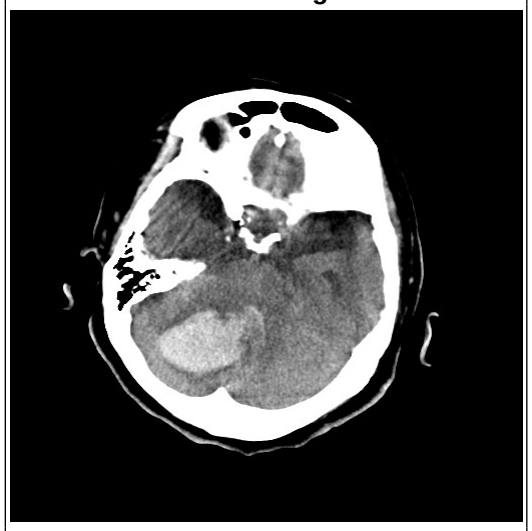
Results

There were 48 patients with acute cerebellar hemorrhage greater than 3 cm in diameter undergoing neurological surgery which included suboccipital craniectomy and/or external ventricular drainage (EVD). Mean age was 63 years old. 9 patients underwent suboccipital craniectomy only; 38 for both suboccipital craniectomy and EVD. Overall mortality rate was 35.4%. 14 patients (29.2%) had good outcome. Poor outcome on the GOS 2 years after surgical treatment of acute cerebellar hemorrhage was identified as association with NIHSS scores at discharge.

Conclusions

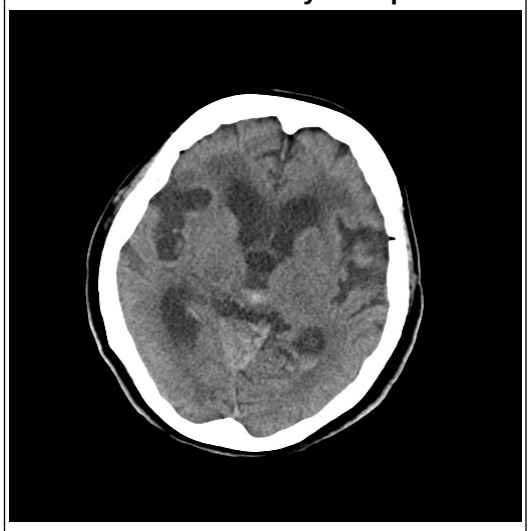
In summary, our study demonstrated that an addition of one NIHSS point at discharge will increase the probability of 2-year postoperative poor outcome by 27.6% in patients with acute spontaneous cerebellar hemorrhage undergoing neurological surgery.

Acute spontaneous cerebellar hemorrhage



A preoperative brain computed tomography without contrast showing acute hematoma in the right cerebellum with intraventricular rupture.

Acute obstructive hydrocephalus



A preoperative brain CT without contrast showing acute ventricular dilatation.