Milan Complexity Scale

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The Milan Complexity Scale-a new practical grading scale designed to estimate the risk of neurological clinical worsening after performing surgery for tumor removal-is presented. METHODS A retrospective study was conducted on all elective consecutive surgical procedures for tumor resection between January 2012 and December 2014 at the Second Division of Neurosurgery at Fondazione IRCCS Istituto Neurologico Carlo Besta of Milan. A prospective database dedicated to reporting complications and all clinical and radiological data was retrospectively reviewed. The Karnofsky Performance Scale (KPS) was used to classify each patient's health status. Complications were divided into major and minor and recorded based on etiology and required treatment. A logistic regression model was used to identify possible predictors of clinical worsening after surgery in terms of changes between the preoperative and discharge KPS scores. Statistically significant predictors were rated based on their odds ratios in order to build an ad hoc complexity scale. For each patient, a corresponding total score was calculated, and ANOVA was performed to compare the mean total scores between the improved/unchanged and worsened patients. Relative risk (RR) and chi-square statistics were employed to provide the risk of worsening after surgery for each total score. RESULTS The case series was composed of 746 patients (53.2% female; mean age 51.3 \pm 17.1). The most common tumors were meningiomas (28.6%) and glioblastomas (24.1%). The mortality rate was 0.94%, the major complication rate was 9.1%, and the minor complication rate was 32.6%. Of 746 patients, 523 (70.1%) patients improved or remained unchanged, and 223 (29.9%) patients worsened. The following factors were found to be statistically significant predictors of the change in KPS scores: tumor size larger than 4 cm, cranial nerve manipulation, major brain vessel manipulation, posterior fossa location, and eloquent area involvement (Nagelkerke R(2) = 0.286). A grading scale was obtained with scores ranging between 0 and 8. Worsened patients showed mean total scores that were significantly higher than the improved/unchanged scores (3.24 ± 1.55 vs 1.47 ± 1.58 ; p < 0.001). Finally, a grid was developed to show the risk of worsening after surgery for each total score: scores higher than 3 are suggestive of worse clinical outcome. CONCLUSIONS Through the evaluation of the 5 aforementioned parameters-the Big Five-the Milan Complexity Scale enables neurosurgeons to estimate the risk of a negative clinical course after brain tumor surgery and share these data with the patient. Furthermore, the Milan Complexity Scale could be used for research and educational purposes and better health system management 1 .

1)

Ferroli P, Broggi M, Schiavolin S, Acerbi F, Bettamio V, Caldiroli D, Cusin A, La Corte E, Leonardi M, Raggi A, Schiariti M, Visintini S, Franzini A, Broggi G. Predicting functional impairment in brain tumor surgery: the Big Five and the Milan Complexity Scale. Neurosurg Focus. 2015 Dec;39(6):E14. doi: 10.3171/2015.9.FOCUS15339. PubMed PMID: 26621412.

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