Landriel Ibañez classification

Complications were defined as any deviation from the normal postoperative course occurring within 30 days of surgery.

A four-grade scale was proposed based on the therapy used to treat the complications:

Landriel Ibañez classification for neurosurgical complications:

Grade I represents any non-life threatening complication treated without invasive procedures

Grade II is complications requiring invasive management

Grade III is life-threatening adverse events requiring treatment in an intensive care unit (ICU)

Grade IV is death as a result of complications.

Each grade was classified as surgical complications or medical complication. An observational test of this system was conducted between January 2008 and December 2009 in a cohort of 1190 patients at the Hospital Italiano de Buenos Aires.

Of 167 complications, 129 (10.84%) were classified as surgical, and 38 (3.19%) were classified as medical complications. Grade I (mild) complications accounted for 31.73%, grade II (moderate) complications accounted for 25.74%, and grade III (severe) complications accounted for 34.13%. The overall mortality rate was 1.17%; 0.84% of deaths were directly related to surgical procedures.

The authors present a simple, practical, and easy to reproduce way to report negative outcomes based on the therapy administered to treat a complication. The main advantages of this classification are the ability to compare surgical results among different centers and times, the ability to compare medical and surgical complications, and the ability to perform future meta-analyses [1)].

Patients undergoing neurosurgical procedures were enrolled in an observational longitudinal study at Neurological Institute Carlo Besta from January 2012 to September 2013. We evaluated patients' health status before surgery, at discharge, and follow-up with the Karnofsky Performance Status Scale (KPS), whereas the Landriel-Ibañez Classification was used to record complications. Descriptive statistics were performed to illustrate the distribution of sociodemographic and clinical data. We used nonparametric tests to compare KPS scores of patients with different grades of complication and to evaluate the differences between preoperative KPS scores, KPS scores at discharge and follow-up. The effect sizes were also calculated. RESULTS:

We enrolled 1008 patients. We registered 228 complications (139 grade 1 complications, 63 grade 2 complications, 20 grade 3 complications, and 6 grade 4 complications). All patients with a complication showed KPS scores at discharge that were lower than preoperative scores and KPS scores at follow-up greater than scores at discharge. After patients with grade 4 complications, who had the worst outcomes, those with grade 3 complications were the most compromised after surgery whereas patients with grade 2 complications seemed to have a better health status than patients with grade 1 complication.

Our study highlights the impact of neurosurgical complications on patients' life and contributes to the debate on how define and classify adverse events because a classification only based on treatment seems to be not adequate [2].

Bartek et al., conducted a retrospective review of 98 adult patients (≥16 years) treated with microvascular decompression (MVD) between 1 January 1994 and 1 June 2013. Adverse events occurring within 30 days were classified according to the Landriel Ibañez classification for neurosurgical complications.

Patients' median age was 61 years (range 26-83), and 64 (65 %) were females. Indications for MVD were trigeminal neuralgia (n = 77, 79 %), glossopharyngeal neuralgia (n = 4, 4 %), hemifacial spasm (n = 16, 16 %) and combined trigeminal neuralgia and hemifacial spasm (n = 1, 1 %). The overall 30-day complication rate was 20 %, with 14 % grade I complications, 5 % grade II complications and 1 % grade III complications. The comparison with the literature was hampered by the diverse and unsystematic way of reporting complications.

They provide a standardized report of postoperative complications in a consecutive patient series undergoing MVD. Due to the heterogeneous and non-standardized reporting of complications in the literature, it is difficult to know if the 20 % complication rate is low or high. Standardized reporting is a necessity for meaningful and more valid comparisons across studies. The safety of MVD, a fairly standardized neurosurgical procedure, is well suited for comparisons across centers provided that complications are reported in a standardized manner [3].

1)
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