M. Kiefer and R. Eymann

Gravitational shunt complications after a five-year follow-up

Acta Neurochir Suppl 106: 107-12, 2010

Abstract:
INTRODUCTION: Gravitational shunts (G-valves) for ventriculo-peritoneal (VP) shunting have been available since 1996. We analyzed shunt complications in patients with a complete minimum follow-up of 5 years. MATERIAL AND METHODS: Between 1996 and 2002, we implanted 282 VP G-valves in various forms of adult chronic hydrocephalus, of which 130 provided a complete data set with an annual follow-up. Adjustable and non-adjustable G-valves were used: the Miethke Dual-Switch valve, the Miethke GAV-valve and a combination of adjustable Codman-Hakim valves with the Miethke Shunt-Assistant. In cases of supposed mechanical shunt failure, the explanted shunts were examined in a bench test. RESULTS: The total complication rate was 21%:3% shunt infections, 3% catheter dislocation/fracture, 5% underdrainage and 9% overdrainage occurred. Half of the overdrainage complications could be managed conservatively. Underdrainage complications resulted from the chosen opening pressure being too high (n = 3), a secondary increase in intraperitoneal pressure (n = 2) or from "real" shunt failure in one case according to bench test results. CONCLUSION: G-valves demonstrate sufficient long-term performance over multiple years, and real shunt-related complications are rare. The frequency of revision due to overdrainage is low (4.5%).

ISBN/0065-1419 (Print)
0065-1419 (Linking)
http://www.springerlink.com/content/u44m548314522893/