Between 1996 and 2002, Kieferand Eymann 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.

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.

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%) [1].

1)
Kiefer M, Eymann R. Gravitational shunt complications after a five-year follow-up. Acta Neurochir Suppl. 2010;106:107-12. doi: 10.1007/978-3-211-98811-4_18. PMID: 19812930.