Postoperative magnetic resonance imaging after acoustic neuroma surgery: influence of packing materials in the drilled internal auditory canal on assessment of residual tumor.

Authors: Umezu H, Seki Y

Publication Date: 1999

Abstract:

Serial magnetic resonance (MR) images taken after acoustic neuroma surgery were analyzed to evaluate the pattern and timing of postoperative contrast enhancement in 22 patients who underwent acoustic neuroma removal via the suboccipital transmeatal approach. The opened internal auditory canal (IAC) was covered with a muscle piece in nine patients and with fibrin glue in 13. A total of 56 MR imaging examinations were obtained between days 1 and 930 after surgery. MR imaging showed linear enhancement at the IAC within the first 2 days after surgery, and revealed nodular enhancement on day 3 or later in patients with a muscle piece. MR imaging tended to show linear enhancement at the IAC, irrespective of the timing of the examination in the patients with fibrin glue. Postoperative MR imaging on day 3 or later showed the incidence of nodular enhancement in patients with muscle was significantly higher than in patients with fibrin glue. The results illustrate the difficulty in differentiating nodular enhancement on a muscle piece from tumor by a single postoperative MR imaging study. Therefore, fibrin glue is generally advocated as a packing material of the IAC because it rarely shows masslike enhancement on postoperative MR imaging. When a muscle piece is used in patients at high risk for postoperative cerebrospinal fluid leaks, MR imaging should be obtained within the first 2 days after surgery, since benign enhancement of muscle will not occur and obscure the precise extent of tumor resection.