

Aquamantys

<https://europe.medtronic.com/xd-en/healthcare-professionals/products/general-surgery/electrosurgical/aquamantys-bipolar-sealers.html>

Transcollation devices appear to be an effective and safe addition to the armamentarium of neurosurgical hemostatic options in intracranial tumor resection in which there is a high risk of intraoperative hemorrhage ¹⁾

Aquamantys® is a novel bipolar coagulation device that employs a new bipolar coagulation technique combining radiofrequency energy and saline to achieve hemostatic sealing by denaturing collagen fibers. This offers the possibility of achieving adequate hemostasis even in giant intraventricular tumors in infants to obtain GTR resection with minimal blood loss ²⁾

The most common complication after lumbar discectomy is reherniation. Although many studies have investigated factors that may increase the reherniation risk, few are agreed upon all. It has been suggested that limited nucleus removal is associated with higher reherniation risk, while more aggressive nucleus removal can result in increased disc degeneration. Here, we assessed the efficacy of a coblation-assisted microdiscectomy in adult patients undergoing single-level disc surgery.

Methods: We prospectively compared the reherniation rate in 75 patients (Group 1) undergoing single-level lumbar disc surgery completed with the radiofrequency bipolar system Aquamantys® (Medtronic, Minneapolis, MN, USA) to that of a historical control group (n = 75) matched for variables related to herniation level and characteristics (Group 2). Patients were followed up to 4 years. Reherniations were assessed, pain and function were monitored throughout, and imaging was performed at annual follow-up.

Results: The overall symptomatic reherniation rate was 4%. In particular, one case (1.3%) was observed in Group 1 and five (6.7%) in Group 2 ($P < 0.05$). Magnetic resonance imaging identified a total of 4 (2.7%) asymptomatic reherniations at 12 months, 6 (4%) at 24 and 36 months, and 7 (4.7%) at 48 months. Overall, Group 1 contained one (1.3%) asymptomatic reherniation case, while six (8%) were observed in Group 2 ($P < 0.05$).

Conclusions: The low reherniation rate in patients treated by the coblation-assisted microdiscectomy suggests that this technique may reduce the reherniation risk. Clinical outcomes for pain and function at 4 years follow-up compared favorably with literature data. Randomized controlled trial could confirm these results ³⁾

Adequate [hemostasis](#) in cranial and [spinal tumor](#) surgery is of paramount importance in neurosurgical practice. Generalized ooze bleeding from the surgical walls cavity, coming from neoplastic vessels or nervous tissue, may be problematic. Recent technical advances have dramatically reduced intraoperative complications related to blood loss. Several techniques are usually employed to control hemostasis in tumor surgery, including preoperative embolization, intraoperative hypotension, electrical coagulation, and the local application of [fibrin sealants](#) or hemostatic matrix, which

influence coagulation.

Material and methods: Our aim in this study was to evaluate the efficacy and the safety of the Aquamantys® system (Medtronic Advanced Energy, Portsmouth, NH, USA), a novel bipolar coagulation device that incorporates a new bipolar coagulation technique. This device has been used in 10 consecutive patients affected by cerebral tumor along with the standard microsurgical technique and well-known intraoperative tools. The technique is associated with simultaneous delivery of bipolar radio frequency energy and conductive fluid through its electrode tip. The volume of saline passing by the electrode tip prevents charring and maintains a clean tip. This cools the tissue as it raises the temperature sufficiently to shrink the collagen of veins and arteries.

Results: Effective hemostasis was achieved in all the cases. No complications or unwanted reactions associated with the device have been observed.

Conclusions: Our findings suggest that the Aquamantys® system may be a highly effective adjuvant tool in minimizing blood loss in a patient with a brain tumor, as well as reducing the time of surgery ⁴⁾

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Last update: **2024/02/06 23:03**

