



CANADIAN STROKE BEST PRACTICE RECOMMENDATIONS

Acute Stroke Management Seventh Edition, Update 2022

**Box 5D: (NEW FOR 2022) Pre- and Post-Management of Patients
Undergoing Endovascular Thrombectomy**

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Canadian Stroke Consortium*

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Note: The following information is provided as general management considerations for patients with stroke undergoing EVT. All EVT-enabled sites should follow local post-procedural protocols and assessment algorithms for neuro vitals, puncture site and extremity perfusion assessments, and patient mobilization restrictions.

5D.1 General Management Before and During Endovascular Thrombectomy

1. **Team Communication:** Maintain ongoing open communication between the stroke physician and the interventionalist for treatment decision-making; and before, during and after the EVT procedure.
2. **Airway:** Adequate airway control and oxygenation should be ensured, with a goal of maintaining oxygen saturation at >92%.
3. **Intubation:** Intubation may be necessary for patients with reduced oxygenation, those who are vomiting, or those who require significant sedation to remain calm for the procedure.
4. **Anesthesia:** Some EVT providers may be comfortable administering their own procedural sedation for EVT. Consultation with anesthesiology may be considered for patients who are anticipated to have airway difficulties or marked difficulties cooperating with the procedure.
5. **Contrast allergy:** A contrast allergy is not an absolute contraindication to EVT. If the patient has a known or suspected contrast allergy:
 - a. Pre-treat with:
 1. H1 antagonist 50 mg IV diphenhydramine
 2. Steroid 40 mg IV methylprednisolone or 200mg IV hydrocortisone
 3. H2 blockers: ranitidine 50mg IV or famotidine 20mg IV;
 - b. Consider:
 1. Supplemental oxygen
 2. Epinephrine
 3. Intubation (if severe laryngeal edema)
6. **Cardiac monitoring:** Blood pressure should be maintained according to targets for patients who receive thrombolysis; however, aggressive blood pressure lowering should be avoided, especially before reperfusion is achieved. Patients should be monitored for arrhythmias.
7. **Temperature regulation:** The goal is to aim for euthermia. There is no known benefit to hypothermia.
8. **Hyperglycemia:** The goal is to aim for normoglycemia. Hyperglycemia is associated with harm in acute ischemic stroke.
9. **Catheter:** Insertion of a foley catheter could be considered only if necessary to reduce patient distress and movement during the procedure and should not delay reperfusion.

5D.2 General Management After Endovascular Thrombectomy

1. Patient should remain supine for the first 2 to 6 hours, with the head of the bed at not >30 degrees.
2. The puncture site (groin or wrist) should be closed by manual compression, sandbag, or other device.

3. The puncture site should be assessed for swelling or hematoma Q15 minutes for the first hour, then Q30 minutes for the next hour, then Q1 hourly for the next 1 to 5 hours depending whether a vascular closure device was used and on the access location.
4. Pulses at the puncture site and distal to it should be assessed along with vital signs as per local protocols.
5. Puncture site hematoma should be suspected if there is local bleeding, groin swelling, bruising, pain or unexplained reduction in hemoglobin or hematocrit.
6. If puncture site hematoma is suspected, on-call physician should be called, and prolonged manual compression applied. A stat CBC should be obtained and repeated Q4 to 6 hours.
7. If puncture site hematoma persists despite manual compression, a CT angiogram, or ultrasound if CT not available, should be obtained to assess for pseudoaneurysm or other abnormality, and consultation with vascular surgery for thrombin injection or other intervention should be considered.
8. Retroperitoneal hemorrhage should be suspected if the patient has back pain, flank bruising (Grey Turner sign), abdominal distention with periumbilical ecchymosis (Cullen sign), hypotension and tachycardia, or unexplained anemia. This is most often seen in the first 24 hours.
9. If retroperitoneal hemorrhage is suspected, a three-phase CT of the abdomen should be obtained as soon as possible, and fluid resuscitation, blood transfusion or surgical consultation should be considered.
10. If there is neurologic deterioration, stat CT and CTA should be obtained, to assess for hemorrhagic conversion, reperfusion injury, extracranial occlusion, or intracranial occlusion.
11. If extracranial occlusion is detected, particularly after stenting, urgent endovascular intervention should be considered, in consultation with a stroke specialist and interventional radiology specialist.
12. If intracranial reocclusion is detected, urgent EVT should be considered, in consultation with a stroke specialist and interventional radiology specialist.
13. Creatinine should be obtained and assessment for contrast-induced nephropathy conducted.
14. If contrast-induced nephropathy is identified, local protocols should be followed and consultation with nephrology considered.
15. The ideal blood pressure target after EVT is unknown. Blood pressure targets should be individualized based on clinical factors, such as the degree of recanalization achieved, whether there was an intraprocedural complication, whether intravenous thrombolysis was given, and the patient's baseline blood pressure. *Refer to Section 4 Emergency Department Evaluation and Management of Patients with Transient Ischemic Attack and Acute Stroke for additional information on managing blood pressure in acute stroke.*