CLINICAL INFORMATION

Progressive hematoma in anterior neck after endovascular treatment of middle cerebral artery aneurysm

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KEYWORDS
Superior thyroid artery; Cervical hemorrhage; Airway obstruction; Aneurysm endovascular treatment

Abstract
Background: Cervical hematomas can lead to airway compromise, a life threatening condition, regardless of the cause. The following case is the first presentation of cervical hematoma as a complication of endovascular treatment of middle cerebral artery aneurysm.

Case report: A 49 year-old woman was scheduled for stent placement under general anesthesia for middle cerebral artery aneurysm. Few days before intervention, acetyl salicylic acid and clopidogrel treatment was started. Following standard monitoring and anesthesia induction, the patient’s trachea was intubated with a 7.5 mm endotracheal tube and the procedure was completed without any complications. Three hours later, dyspnea developed and physical examination revealed progressive swelling and stiffness in the neck. Endotracheal intubation was performed with a 6 mm diameter uncuffed tube with the aid of sedation. The vocal cords were completely closed due to compression. There was no leak around the endotracheal tube. The rapidly performed computerized tomography scans showed an enormous hematoma around the neck and extravasation of contrast medium through superior thyroid artery. After coil embolization of superior thyroid artery, she was taken to the intensive care unit as intubated and sedated. Surgical exploration of the hematoma was not recommended by the surgeons, because she was on clopidogrel. After two days, the patient’s trachea was extubated safely ensuring that the swelling was sufficiently ceased and leak detected around the endotracheal tube.

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Background and objectives

Cervical hematoma due to superior thyroid artery (STA) dissection can be a life threatening condition because of airway compromise. It is encountered mostly after thyroid surgeries, traumas and tumors and rarely spontaneously. Main symptoms are dysphonia, dysphagia, neck swelling, hoarseness and eventually respiratory distress and suffocation.

To the best of our knowledge, the following case is the first presentation of cervical hematoma as a complication of endovascular treatment of middle cerebral artery aneurysm.

Case report

A 49 year-old woman was scheduled for stent placement under general anesthesia for middle cerebral artery aneurysm. She had hypertension and a history of stroke. In addition, balloon angioplasty was performed for treatment of stenotic right internal carotid artery. Few days before intervention, acetyl salicylic acid and 300 mg clopidogrel treatment was started. On arrival to the operating room; electrocardiogram, non-invasive blood pressure and peripheral oxygen saturation was monitored. Propofol 2 mg.kg⁻¹, fentanyl 1 mcg.kg⁻¹ and rocuronium 0.5 mg.kg⁻¹ were administered for induction of general anesthesia and maintenance was achieved with 2% sevoflurane and remifentanil infusion. The patient’s trachea was intubated with 7.5 mm endotracheal tube without any difficulty. The procedure was completed without any complications. Three hours later, in the postanesthesia care unit, dyspnea developed and physical examination revealed progressive swelling and stiffness in the neck. Endotracheal intubation was performed with a 6 mm diameter uncuffed tube with the aid of sedation with 100 mg propofol and 3 mg midazolam. The vocal cords were completely closed due to compression, Cormack-Lehane laryngoscopic view was Grade II. There was no leak around the endotracheal tube. The rapidly performed computerized tomography scans showed an enormous hematoma around

Conclusions: Securing the airway rapidly by endotracheal intubation is the most crucial point in the management of cervical hematomas. Diagnostic and therapeutic procedures should be performed only afterwards.

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use an armed endotracheal tube to ensure the patency of the airway because conventional endotracheal tubes can be compressed by an enlarging hematoma. We did not have an armed tube in reach so we preferred not to wait for one and intubated the patient’s trachea as soon as possible.

Although airway control is the mainstay of the management of cervical hematomas, the risk of hemodynamic deterioration due to a possible baroreflex mediated mechanism should not be forgotten. Sethi et al. reported a case of cervical hematoma following anterior cervical spine surgery who experienced severe hypotension and bradycardia after intubation and adequate ventilation. The authors suggested that this situation was based on the mass effect of the hematoma on the carotid sinus resulting in baroreceptor reflex because the hemodynamic instability had reverted by evacuation of the hematoma. Our patient was hemodynamically stable during all the follow-up.

Surgical exploration and evacuation of the hematoma is usually suggested to facilitate the extubation and shorten the duration of hospital stay. Also, Yu et al. used partial hematoma decompression under local anesthesia to facilitate intubation in their case with delayed bleeding due to STA dissection 16 days after anterior cervical discectomy. After decompression they intubated the patient easily and safely. Since our patient was hemodynamically stable and the surgery was thought unsafe, we decided to wait for spontaneous cessation of the hematoma unlike the other cases in the literature.

In conclusion; securing the airway rapidly by endotracheal intubation is the most crucial point in the management of cervical hematomas. Diagnostic and therapeutic procedures should be performed only afterwards.

## Conflicts of interest

The authors declare no conflicts of interest.

## References