

**MANAGEMENT OF WOUND
HEMATOMA FOLLOWING
NECK SURGERY**

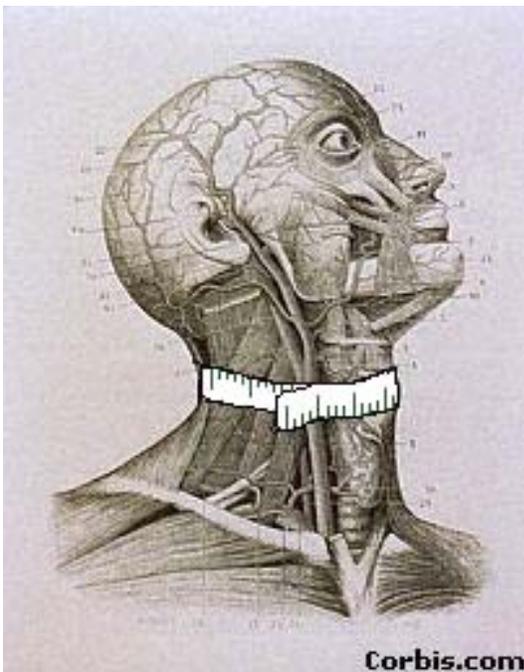
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**USE ORDER
ENTRY #92 IN
CPRS**

Wound hematoma following neck surgery can be a potentially life threatening problem. The hematoma can be either above or below the platysma muscle, with superficial hematomas appearing more impressive in terms of neck swelling. Deeper hematomas are much more dangerous, as they compress and deviate the trachea and *loss of the airway is the life-threatening problem*, not blood loss into the hematoma or compression of carotid flow (which rarely occurs as the pressure exerted by the hematoma does not exceed systolic pressure). Airway obstruction may be due to direct tracheal compression by the hematoma, it may be due to edema secondary to direct mucosal tracheal trauma from the operative intubation or it can be due to lymphatic and venous congestion resulting from hematoma formation. The time to airway compromise may be dependent on the mechanism but there may be a surprisingly short time period between development of the hematoma and respiratory arrest. Endotracheal intubation of the externally compressed airway is difficult and can be complicated by fatal laryngospasm.

THE SFVAMC WET NECK PROTOCOL: IN CPRS - SELECT ORDER ENTRY #92 AFTER EVERY CAROTID TEA AND ANY NECK OPERATION.

Here is what you are ordering the nurses in the TCU to do –



Place a measuring tape around the patient's neck, mark the location on the skin. Measure the circumference of the neck at this point and record it on the patient's flow sheet. Repeat measurements of the neck circumference at the same interval as the vital signs.

Record all neck circumference measurements on the patient's flow sheet.

Notify house officer for ANY INCREASE IN NECK CIRCUMFERENCE.

House officer will personally examine the patient and notify the chief/senior resident and attending if:
The size increase is 1 cm (or greater) in one hour or less
The size increase is >0.5 cm in two consecutive hours
A total size increase of 2 cm (or greater) occurs over any time

A. If a surgical house officer receives a call from the nursing staff that there has been a change in the measured diameter of the patient's neck, the house officer should immediately do the following, in the following order:

1. If the patient is having respiratory symptoms, get the crash-cart brought to the bedside, have the nurse call the in-house anesthesia resident IMMEDIATELY, deliver hi-flow oxygen via nasal prongs or face mask, pour Betadine solution on the incision, put on sterile gloves, get a pair of sterile scissors and with sterile technique, open the neck incision. The closure of most neck incisions (and all carotid endarterectomy cases) consists of a subcuticular closure of the skin over a running Dexon closure of the platysma. You will usually need to open both these layers to get to the hematoma. Do NOT be afraid of injuring or cutting the carotid artery as it is far deeper in the neck than you think (about 4 –5 cm below either of these layers).

Remember than the most important thing is for you to get the hematoma out quickly and efficiently to relieve pressure on the airway. Bleeding (usually minor) will be dealt with in the operating room later. Manually evacuate the hematoma to relieve the mass effect on the airway. Hold gentle constant pressure (as to not occlude either the trachea or the carotid artery). Do not leave the patient's bedside. Have the nursing staff call the surgery chief resident, the attending surgeon, and the nursing supervisor to get ready for operative re-exploration and closure of the wound.

2. If the patient is not yet in distress, deliver hi-flow oxygen via nasal prongs or face mask, examine the patient with specific emphasis on subtle changes in voice quality, tracheal deviation, size of hematoma and respiratory symptoms (anxiety, agitation, hoarseness, stridor, dyspnea, tachypnea). Have the nurse call the in-house anesthesia resident to come and examine the patient. Call the surgery chief resident to come and examine the patient.
3. Have the nurse bring the crashcart to the bedside. Everything you need is in the crashcart. There is an emergency cricothyroidotomy catheter kit in the bottom drawer of the crashcart which you should use to perform a percutaneous cricothyroidotomy. There is a cutdown and airway management tray in the bottom drawer of the crashcart which contains all the necessary equipment (knife, tracheal hook, clamps) to perform an open cricothyroidotomy if needed.
4. Remain by the patient's bedside with the in-house anesthesia resident until the chief resident arrives. Keep instruments available to open the surgical incision and evacuate the hematoma if needed.

B. The chief resident should examine the patient and then:

1. If there are any respiratory symptoms (anxiety, agitation, hoarseness, stridor, dyspnea, tachypnea) pour Betadine solution on the incision, put on sterile gloves, get a pair of sterile scissors and with sterile technique, open the neck incision (there will most likely be a two layer closure performed with Dexon suture to get through). Manually evacuate the hematoma to relieve the mass effect on the airway. Tell the junior resident to hold gentle constant pressure (as to not occlude either the trachea or the carotid artery), while you call the attending surgeon.
2. If the patient is not yet in distress, immediately call the attending surgeon and discuss the situation and decide whether the hematoma should be observed, immediately evacuated at the bedside, or evacuated emergently in the operating room.
3. If a decision is made to evacuate the hematoma in the operating room, a surgical house officer who is capable of independently evacuating the hematoma should stay at the patient's bedside (with instruments for such a procedure) until the patient is intubated in the operating room.

C. The Anesthesia Resident should examine the patient and then:

1. Decide on the urgency of the clinical situation:

In patients with respiratory compromise the neck wound should be opened using sterile technique. Then call your anesthesia attending and the OR.

In situations without respiratory compromise, call your anesthesia attending and the OR, the patient can then be taken to the operating room.

2. Decide on an intubation technique: Are there patient characteristics that will make intubation even more difficult? Was the patient intubated previously? How hard was it? Is the neck swollen to the point where intubation will now be difficult? Remember to consider all options (awake, awake fiber, direct laryngoscopy, blind nasal, laryngeal mask, cricothyroidotomy). Blind techniques may be impossible with neck swelling.
3. Control the airway.

References:

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