Head and Neck Oncologic Emergencies

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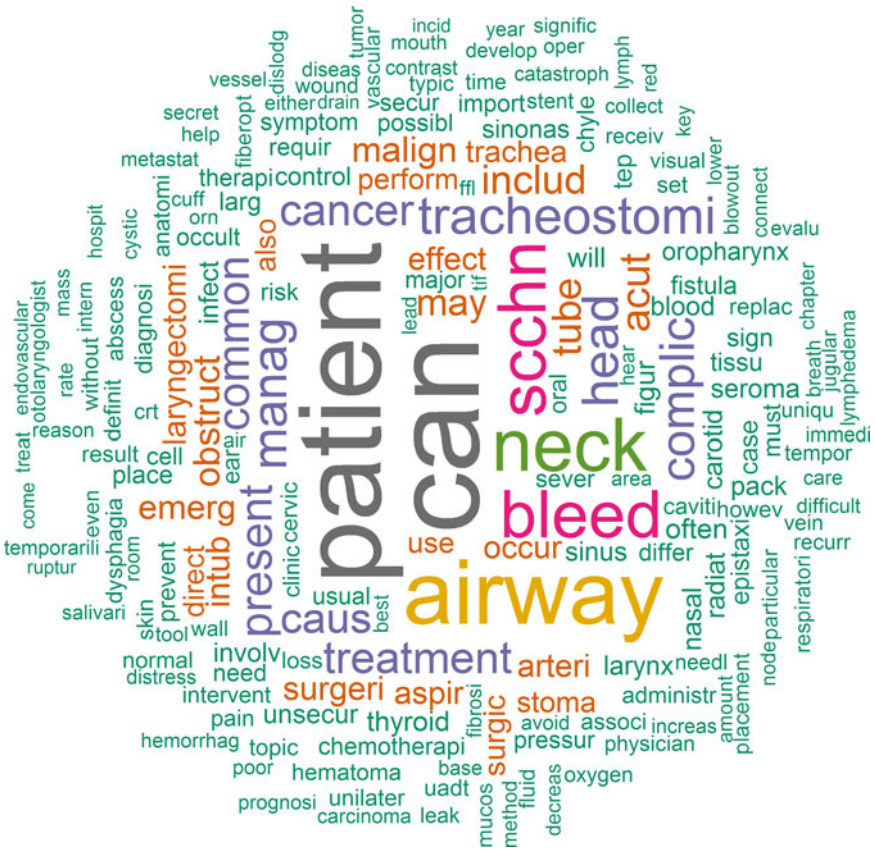

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Introduction

Head and neck cancer is the fifth most common cancer worldwide with almost 53,000 people diagnosed each year in the United States [1]. These include malignancies of the upper aerodigestive tract (UADT) which begins at the lips and nose and extends to the mucosal surfaces of the cervical trachea and esophagus. The UADT includes the oral cavity, oropharynx, hypopharynx, larynx, nasal cavities, and paranasal sinuses. The most common malignancy of the UADT is squamous cell carcinoma of the head and neck (SCCHN), making up over 97 % [2]. For simplicity, SCCHN will be the focus of this chapter. Other pathologies in the head and neck including carcinoma of the major and minor salivary glands, thyroid, and skin will not be covered.

Uncontrolled SCCHN can result in life-threatening emergencies, principally from compromise of the airway and/or bleeding. Patients with undiagnosed SCCHN may present to the emergency department (ED) in distress because SCC of the base of the tongue and larynx can grow to be large with relatively few symptoms [3]. In this chapter, we will discuss acute management of the airway in patients with SCCHN. We will also review management of emergent bleeding in patients with SCCHN. Finally, we will cover common complications from treatment of SCCHN and end with clinical pearls for acute management of SCCHN in the ED.

Airway Management

Airway obstruction due to malignancy of the UADT affects up to 80,000 patients annually, with most patients presenting to the ED for acute care [4]. Ideally, discussions about airway management in patients with SCCHN should occur well before an emergency. This may include prophylactic tracheostomy. In addition to acute airway obstruction, SCCHN patients have increased rates of aspiration pneumonia because of dysphagia and difficulty handling even normal oral secretions [5]. The 1-year and 5-year incidence of clinically meaningful aspiration in SCCHN patients is 15.8 % and 23.8 %, respectively, with 84 % of these patients being hospitalized [6]. For the purposes of this chapter, we have divided the airway into unsecure and secure.

Unsecured Airway

Undiagnosed SCCHN can lead to signs of obstruction before causing other symptoms such as pain [7]. Metastatic cervical adenopathy can also cause obstructive lymphedema and direct extrinsic compression of the airway. Patients with undiagnosed SCCHN may present with orthopnea, hoarseness, dysphagia, odynophagia, and hemoptysis [7]. Stridor and/or drooling can be signs of an unsecured airway.

In stable patients, a contrasted computed tomography (CT) of the head, neck, and chest can be performed quickly to assess the location and extent of the obstruction [7]. This imaging study provides important staging information if malignancy is confirmed. Flexible fiber-optic laryngoscopy (FFL) is a critical tool for assessing the airway and is the most direct method to evaluate for impending obstruction (Fig. 1). Skilled management of the FFL is important for evaluating a potentially tenuous airway. Topical administration of lidocaine and oxymetazoline or phenylephrine to the nasal cavities makes FFL more tolerable and safe (Fig. 1). The management of a suspected unsecure airway starts with optimal position to make the patient as comfortable as possible. Administration of supplemental oxygen may be helpful but should be used with caution in patients with uncompensated chronic obstructive pulmonary disease (COPD). Administrating nebulizers and steroids is unlikely to improve the airway but may temporarily help palliate the patient. The use of Heliox, a mixture of helium and oxygen, has been described in the acute management of patients with an unsecure airway. The decreased viscosity of Heliox can temporarily improve airflow and reduce stridor. Because it is an inert gas, it can assist in temporizing an unsecure airway but may not be readily available in the ED [8].

Don't see labels on Figure 1.

SCCHN patients with acute respiratory failure from an unsecure airway should be managed expeditiously. Transoral intubation is preferred if FFL predicts that direct visualization of the endolarynx can be achieved safely. The use of laryngeal mask anesthesia (LMA) is not recommended in these cases because of likely distortion of the normal anat-

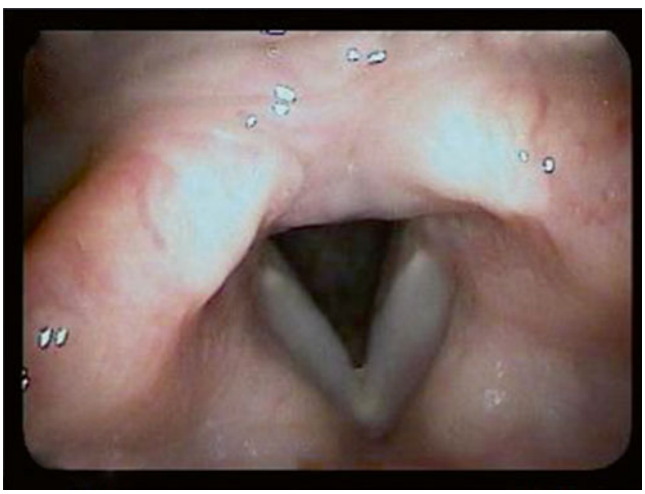

Fig. 1 Flexible fiber-optic laryngoscopy demonstrating normal larynx. *A* airway; *VC* vocal cord

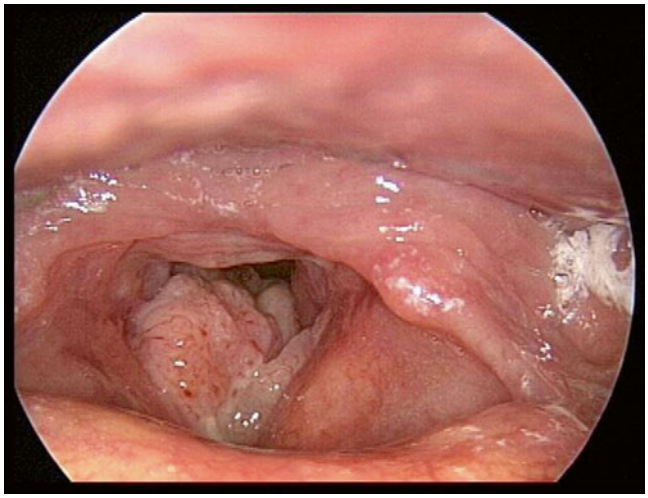

Fig. 2 Flexible fiber-optic laryngoscopy demonstrating obstructing mass of the larynx. Note loss of visualization of the vocal cords and the markedly decreased diameter of the airway (A)

omy. In cases where oral intubation is not possible (e.g., obstructing mass, trismus), awake fiber-optic transoral or nasotracheal intubation is an option. Nasotracheal intubation is preferred over awake fiber-optic oral intubation to decrease patient gagging but requires a unique skill set and is probably best performed by experienced anesthesiologists or otolaryngologists. Successful intubation can avoid an emergent surgical airway and allow a controlled environment for formal tracheostomy [3]. SCCHN involving the larynx is most likely to result in an unsecured airway (Fig. 2). Intubation of a patient with locally advanced SCC of the larynx can be hazardous because of the distorted anatomy and risk of bleeding during laryngoscopy. In these cases, the airway is best managed in the operating room by an experienced anesthesiologist and/or otolaryngologist.

If attempted intubation is unsafe or unsuccessful, then a surgical airway via cricothyroidotomy or tracheostomy should be performed. Awake tracheostomy can be performed under local anesthesia in select SCCHN patients with an unsecure airway. This is best performed in the operating room. If an urgent airway is needed (e.g., acute obstruction), then a "slash" cricothyroidotomy should be performed. A vertical incision is usually advised in this setting as a midline dissection is critical to minimize bleeding and allowing for identification of the airway across a vertical range. In cases where the trachea is deviated, a needle on a saline-filled syringe with negative pressure can be used to locate the trachea by visualization of air bubbles [9]. Transtracheal catheterization has also been described if cricothyroidotomy or tracheostomy cannot be performed [10].

Some head and neck cancers, particularly thyroid cancers, can cause paralysis to one or both of the vocal cords via direct involvement of the recurrent laryngeal nerves (Fig. 3).

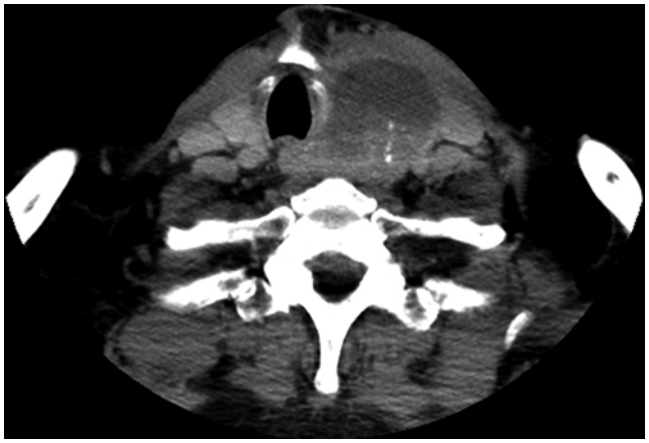

Fig. 3 Axial computed tomography (CT) of the neck demonstrating a left-sided thyroid mass with invasion into the cricoid cartilage. This patient presented with a paralyzed ipsilateral vocal cord secondary to involvement of the recurrent laryngeal nerve

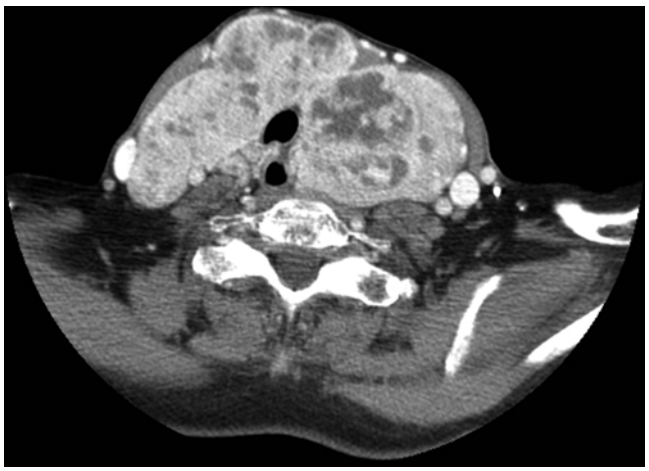

Fig. 4 Axial computed tomography (CT) of the neck demonstrating a large goiter with narrowing of the airway (A) but no obstruction

This is in contrast to large goiters that can distort the airway over time but rarely cause respiratory distress (Fig. 4). Acute bilateral vocal fold paralysis, either by direct tumor involvement or iatrogenic after thyroid surgery, can cause respiratory distress marked by stridor. These patients typically require intubation and subsequent tracheostomy if possible. Anaplastic thyroid cancer is the prototypic malignancy to cause acute airway obstruction by direct tracheal involvement, recurrent laryngeal nerve involvement, or both. Fortunately, anaplastic thyroid carcinoma comprises only 1.7 % of all thyroid cancers [11]. The management of the airway in patients with anaplastic thyroid cancer is complex and controversial particularly given the dismal prognosis associated with the disease [12]. For this reason, current American Thyroid Association guidelines recommend against elective tracheostomy [11].

Secured Airway

The airway management of SCCHN patients with a tracheostomy or laryngectomy stoma requires some familiarity with changes to the anatomy with these procedures. Most clinicians are familiar with tracheostomy patients whereby the oral cavity, oropharynx, and larynx are bypassed by a tube directly into the trachea. In contrast, laryngectomy patients are obligate "neck breathers" with no remaining connection between the mouth and trachea.

As with all patients presenting with respiratory distress, conservative measures should always be initiated including oxygen administration. However, nasal cannula or facemask administration may have no effect if the patient breathes through a surgically created stoma in the neck. Oxygen can be applied to both the face and stoma for tracheostomy patients but only the stoma for laryngectomy patients. Fiberoptic tracheoscopy can be a valuable tool to rule out a proximal obstruction. The scope can be introduced inside the stoma or tube in place to visualize the carina and proximal main stem bronchi.

SCCHN patients with a tracheostomy are at risk of life-threatening complications, including bleeding, tube dislodgement with airway obstruction, and death [13]. There are known late complications of tracheostomy in up to 65 % of patients that are possible including granulation tissue formation, tracheomalacia, tracheoinnominate fistula (TIF), tracheoesophageal fistula, pneumonia, and aspiration [14]. These potential complications from tracheostomy tubes are important to recognize in the acute setting.

Patients can present to the ED with airway obstruction despite having a tracheostomy tube. If a tracheostomy tube dislodges, then every effort should be made to replace the tube as the stoma can close substantially in a matter of hours. If the original tracheostomy tube is too large for the tracheostomy stoma at the time of replacement, then the tract can be dilated with a nasal speculum or a smaller tube can be inserted. An endotracheal tube can even be used temporarily to secure the airway if needed. However, it is important to keep the cuff visible near the stoma to avoid a main stem bronchus intubation.

Mucous p lugging of a tracheostomy tube can cause acute airway obstruction and death. For this reason, most commercially available tracheostomy tubes have an interchangeable inner cannula. Patients need appropriate humidification of air and also frequent suctioning of the tube to prevent mucous buildup. Applying small amounts of saline bullets and suctioning with a soft flexible catheter can soften and remove hardened mucous.

There are special considerations regarding emergency management of laryngectomy patients. A survey of members of the National Association of Laryngectomy Clubs in the United Kingdom underscored concerns regarding the quality of care they receive in the emergency setting [15]. So it is incumbent upon ED physicians to be familiar with the anatomy of patients after laryngectomy and common complications that can occur. For example, it is important to realize that either a standard tracheostomy tube or more customized laryngectomy tube may be used for comfort or to stent the stoma. In the superior posterior wall of the trachea, a tracheoesophageal puncture (TEP) device may be present which provides a one-way valve for air to flow from the trachea into the esophagus for speech (Fig. 5). If a patient needs to be mask ventilated, then the laryngectomy patient should be intubated through the stoma either with a cuffed endotracheal or tracheostomy tube past the TEP if present. The rate of 30-day unplanned readmission independent of complications following laryngectomy ranges from 26.5 % to 42 % [16]. Most of these patients present for stomal or TEP complications [16]. Non-humidified air entering the proximal trachea can cause thickened respiratory secretions that are difficult to clear. These secretions can dry into dense circumferentially crusts which can obstruct the airway. Post-laryngectomy patients also frequently come to the ED for TEP dislodgement. When this happens, a chest film must be taken to rule out aspiration of the device as aspiration has been reported to occur in up to 13 % of patients [17]. If the patient comes with a dislodged TEP device in hand, replacement can be difficult without extensive experience and specialized tools. Replacement of the TEP is usually done by a speech and language pathologist or otolaryngologist. If replacement is not an immediate option, then placement of a temporary red rubber catheter through the TEP site can help prevent closure of the puncture itself and aspiration.

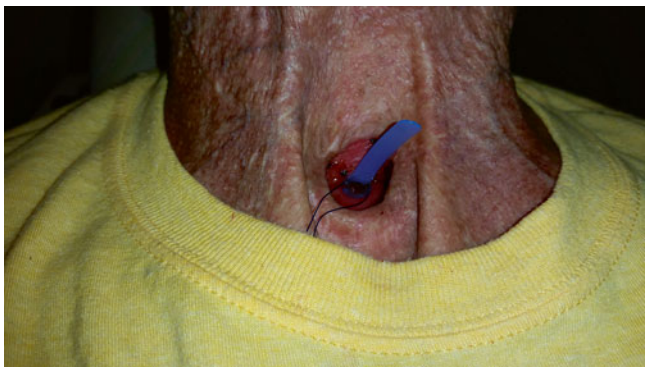

Fig. 5 Laryngectomy stoma with blue tracheoesophageal puncture (TEP) voice prosthesis in place

Bleeding Management

Patients with head and neck cancer, most notably SCCHN, can develop life-threatening bleeding. There is a rich vascular supply to the head and neck region. Bleeding can occur

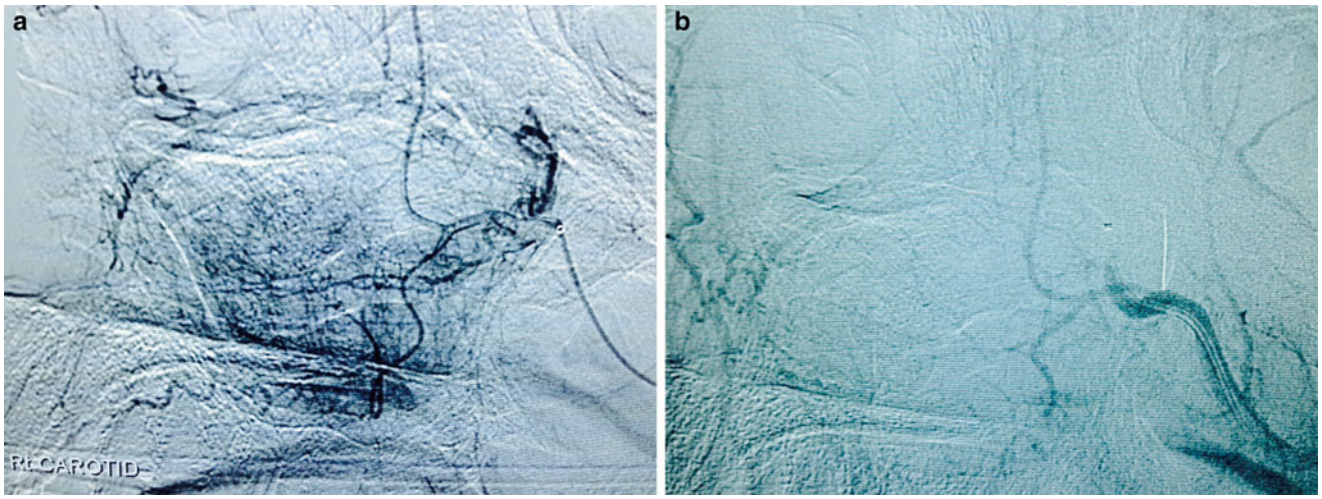

Fig. 6 Angiogram of the right internal maxillary artery in a patient with epistaxis from a sinonasal cancer before (**a**) and after (**b**) embolization

from direct tumor involvement and/or as a side effect of treatments [18]. The most common cause of bleeding is poor wound healing after surgery or radiation. The initial management of bleeding in head and neck cancer patients is no different than the general population. The patient must first be stabilized. The ABCs (airway, breathing, and circulation) of shock trauma should be addressed. Two large-bore intravenous lines should be obtained. Warmed isotonic electrolyte solutions such as lactated Ringer's solution or normal saline should be administered in bolus fashion. Transfusion of packed red blood cells (pRBC) should be considered. When administering large amounts of pRBC, calcium supplementation should be considered as there are chelating agents of calcium in these blood products [19]. Laboratory studies including complete blood count (CBC), prothrombin time (PT), activated partial thromboplastin time (aPTT), and other coagulation labs should be performed and corrected as needed to assist in hemostasis.

Acute Arterial Bleeding

Acute arterial bleeding from the mouth or neck can occur after treatment of SCCHN. Surgery can strip the vascular supply of the arterial wall. Radiation therapy can cause obliteration of the vasa vasorum, premature atherosclerosis, adventitial fibrosis, and fragmentation of tunica media elastic fibers leading to weakening of the arterial wall [20]. Patients with head and neck cancer have other factors that contribute to poor wound healing including poor tissue perfusion, soft tissue exposure to salivary enzymes, and infections [21].

Major arterial bleeding is often preceded by a sentinel bleed, usually from a pseudoaneurysm, that can be profuse but self-limited [21]. A spontaneous cessation of brisk bleeding in a patient with SCCHN can give the emergency physician a false sense of safety. Immediate diagnostic work-up followed by treatment should be obtained to prevent a catastrophic bleed. CT imaging may show irregular thickening of the arterial wall of major vessels [7]. If the patient is stabilized, CT angiography (CTA) can be an effective screening tool for locating site of hemorrhage and can also assist in procedures performed by the intervention neuroradiologist [21]. Prophylactic treatment of the diseased vessel can prevent catastrophic events (Fig. 6a, b).

Direct pressure is key to temporarily controlling any acute bleeding. In the head and neck, there is the additional challenge of managing the airway. So if the bleeding is coming from the mouth, then the airway must be secured before effective pressure can be applied. With the airway secured, bleeding from the mouth can generally be stopped with a throat pack. If a tracheostomy tube is present, the cuff should be immediately inflated to prevent aspiration of blood into the lower airway and lungs. If the tracheostomy tube does not have a cuff, then it should be replaced with a cuffed tracheostomy tube. If a significant amount of blood becomes static in the trachea and the bronchial tree, then clots will cause total obstruction of the airway. This risk is much lower in laryngectomy patients since the oral cavity and oropharynx have no connection to the airway. Even so, it is advisable to intubate the trachea for protection in these patients during any significant bleeding episode. Once the airway is secure, the underlying cause of bleeding can be investigated and managed by a head and neck surgeon and/or interventional neuroradiologist.

Carotid Blowout

The most feared bleeding complication from SCCHN is carotid rupture (aka carotid blowout). Without immediate, aggressive intervention, carotid blowout is uniformly fatal.

Before interventional angiography, hemostasis for carotid artery rupture was obtained via an open surgical approach. This was associated with 60 % neurological morbidity and 40 % mortality. More recently, endovascular stenting of a carotid artery rupture has shown >80 % survival and far fewer neurological events. However, endovascular stent placement without further treatment has a recurrent bleeding up to 26 % [21]. So, the patients who are successfully resuscitated and stented should undergo subsequent definitive surgical management (e.g., overlying soft tissue flap reconstruction) to prevent further bleeding episodes [22]. In dire cases, the ipsilateral carotid artery can be permanently occluded, albeit with at least a 15–20 % risk of delayed cerebral complications [23].

Internal Jugular Vein Bleeding

Internal jugular vein bleeding, although rarer than carotid artery bleeding, can occur after treatment of SCCHN. These are typically less severe, characterized by multiple episodes, and aggravated by coughing [24]. Internal jugular vein bleeding is almost uniformly associated with a pharyngocutaneous fistula [24]. The treatment is surgical exploration of the wound and ligation.

Tracheoinnominate Fistula

A tracheoinnominate fistula (TIF) is a connection from the trachea to the innominate artery. It is a rare complication after tracheostomy placement ranging from 0.1 to 1 % in incidence and usually occurring between postoperative days 7 and 14 [23]. There a number of factors that can predispose a tracheostomy patient to this complication including lower placed tracheotomies, overinflated cuffs causing erosion of the trachea, and anomalies of the innominate or other large-caliber arteries [25]. Before this catastrophic event, there may be an ominous sign of milder pulsating bleeding from the tracheostomy (sentinel bleed) [25].

TIF has a high rate of mortality as it causes rapid exsanguination in combination with aspiration of large amounts of blood. The mortality rate approaches 100 %, even when surgical intervention is taken [26]. Definitive management of a TIF requires a sternotomy and vascular repair in the operating room. Placing direct pressure against the anterior tracheal wall can temporize the bleeding. This can be done either digitally with a finger or placing a cuffed tube, creating a temporary tamponade [25]. Endovascular embolization or placement of a stent graft of the innominate artery has also been described[23].

Epistaxis

Epistaxis is a common reason for presentation to the ED. Management of epistaxis from head and neck malignancy or after surgery is different from ordinary epistaxis and merits special considerations. A typical case of epistaxis can usually be watched and stopped with digital pressure and lubrication of the nasal mucosa with nasal saline spray and antibiotic ointment. Epistaxis in the setting of a sinonasal cancer can be more serious and should be handled more aggressively.

With active epistaxis, visualization with anterior rhinoscopy or endoscopy may not be possible depending on the volume of bleeding. The patient should be sitting up and positioned leaning forward to allow the bleeding to exit the nares and not down the airway. If the bleeding is severe, the airway may need to be secured with intubation. Packing if often required to tamponade uncontrolled epistaxis. There are dissolvable packing materials, such as cellulose polymers (Surgicel) and porcine skin gelatin (Gelfoam), and non-dissolvable packing materials, such as cross-linked polyvinyl alcohol (Merocel) and balloon packs (Rapid Rhino). A headlight, nasal speculum, and bayonet forceps should be used for the placement of packing. Other products such as topical thrombin components (Floseal) can be topically placed inside the nose to aid in hemostasis.

Management of Treatment Complications

Surgical Complications

There are risks of complications after surgery for SCCHN beyond those already covered in this chapter (airway and bleeding). The most common complications after surgery are edema and seroma formation.

After neck dissection (cervical lymphadenectomy), it is common for patients to develop lymphedema of the lower face and neck. Patients who receive adjuvant treatment including radiation therapy and chemotherapy can have profound lymphedema during after treatment. This most commonly presents in the neck and submental region with pitting and non-pitting edema [27]. Seroma is a collection of sterile, straw-colored serous fluid in a dead space of the surgical field and most commonly happens after neck dissection and thyroidectomy. A seroma can easily be mistaken for an abscess if the skin is red and tender. A white blood cell (WBC) may not be helpful as this can be elevated after surgery without infection. A key difference is that there are typically no clinical signs of severe infection (e.g., fever, sepsis) with seroma. If there is uncertainty, then sterile

Fig. 7 Hematoma of the upper neck 24 h after neck dissection. Note ecchymosis of the overlying skin

needle aspiration of the fluid can be diagnostic. Seromas do not require emergent treatment.

In contrast to seroma, a hematoma is a collection of blood within the surgical bed and can occur in up to 4 % of all major head and neck cancer surgeries [28]. A hematoma can be distinguished from seroma by the presence of bruising and turgor of the overlying skin (Fig. 7). An expanding hematoma of the neck should be recognized as an emergency because of the potential for airway compression. The treatment of an expanding hematoma is evacuation of the hematoma and control of any bleeding vessels. This is best performed sterilely in the operating room to reduce the risk of infection but may be necessary at the bedside if the patient develops an unstable airway.

A chyle leak is an uncommon complication that can occur after surgery in the low neck. A chyle least can present in a similar manner to a seroma. The defining difference is that chyle has a characteristic milky color and can have inflammatory effects. Chyle leaks present soon after major neck surgery often when drains are still in place. Most chyle leaks occur on the left due to the presence of the thoracic duct emptying in the left subclavian vein near the internal jugular vein. Needle aspiration of a suspected chyle leak will be unproductive. Most chyle leaks can be managed conservatively with a no-fat diet and continuation of drain.

Salivary fistula is a complication distinct to surgery of the head and neck. A salivary fistula can present like a seroma but is treated differently. There may be other signs of infection including erythema, turbid fluid in the drain, purulence, or wound breakdown. Needle aspiration can be performed but the fluid should be tested for amylase which would be unique to saliva. Pharyngocutaneous fistula, when there is a connection from the pharynx to the skin, can occur after major head and neck surgery particularly in patients who have had prior treatment with radiation [29]. Treatment typically includes incision, drainage, and packing of the wound.

Radiation Therapy Complications

Radiation therapy (RT) is a commonly used method of treatment for head and neck cancer, particularly SCCHN. RT-related toxicities in the head and neck include erythema, ulceration, xerostomia, lymphedema, fibrosis, and osteoradionecrosis (ORN). RT has early and late effects on normal tissue. The early effects are caused by DNA damage and reactive oxygen species formation with resultant cell death to ciliated epithelium, blood vessels, and secretory glands [30]. The late effects are caused by ischemia from microvascular damage and fibrosis, which cause tissue edema, erythema, hemorrhage, and thickened secretions [30]. The combination of chemotherapy and radiation therapy (CRT) in the head and neck causes a synergistic effect on cancer cells but also has this effect on normal cells causing increased and more severe toxicities [31]. A large population-based study showed that 62 % of head and neck cancer patients receiving CRT and 46 % of patients receiving RT alone had a hospitalization or ED visit for an acute adverse effect [1]. The most prominent side effect of RT or CRT is dysphagia. Dysphagia is the result of tissue fibrosis, mucositis, laryngopharyngeal dysmotility, and xerostomia [32]. Severe dysphagia can lead to malnutrition, aspiration, and pneumonia.

A complication unique to RT of the head and neck is osteoradionecrosis (ORN) of the jaw. ORN of the jaw is a result of direct and indirect (loss of saliva) tissue effects that culminate in poor bone healing [33]. The patient can present with recurrent or chronic pain, mandible fracture, and exposed bone in the oral cavity. ORN of the jaw after RT is often precipitated by a dental procedure. Radiation-induced necrosis of cartilage is also a well-known complication of RT. For example, radiation-induced necrosis of the larynx can occur even years after treatment [34]. Differentiating radionecrosis of the larynx from recurrent cancer can be difficult. Diagnosis is based on examination and clinical suspicion.

Chemotherapy Complications

Patients receiving chemotherapy can manifest complications in the head and neck. For primary SCCHN, chemotherapy is often used in combination with RT for definitive treatment or

alone a palliative therapy. Some common agents used for SCCHN include cisplatin, carboplatin, 5-fluorouracil, docetaxel, and cetuximab. These drugs can cause nausea and vomiting, renal failure, myelosuppression, thrombocytopenia, mucositis, and neuropathy. The majority of patients treated with CRT experience severe mucositis [35]. This can lead to decreased quality of life, weight loss, gastrostomy dependence, and increased ED visits and hospitalizations [36]. When symptoms are severe enough, up to one-third of SCCHN patients will require hospitalization [37]. The most common reason for presentation to the ED during or after CRT is dehydration and malnutrition. Symptoms can be ameliorated with topical lidocaine or "magic mouthwash," which usually includes topical lidocaine, steroid, antifungal, and antibiotic. Finally, acute hearing loss can occur from the administration of chemotherapy, most notably cisplatin. Sudden-onset tinnitus may be an early sign of acute hearing loss. Steroids and discontinuation of cisplatin may limit the loss of hearing. However, cisplatin-induced hearing loss is generally permanent.

Common Pitfalls

Neck Abscess Versus Occult SCCHN Cystic Cervical Lymph Node Metastasis

The work-up of a patient presenting to the ED with a neck mass often includes a contrast-enhanced CT of the neck. It is common that the only abnormality observed is a fluid-filled collection with peripheral rim enhancement (Fig. 8a, b). In an adult, this almost invariably represents occult SCCHN metastatic to a cystic or necrotic lymph node in the neck. It can unfortunately be misinterpreted as an abscess, particularly if there is redness of the skin and tenderness [38]. Unlike an abscess, these patients will usually lack the cardinal findings of infection, fever, and elevated WBC. Fine-needle aspiration (FNA) biopsy is the most appropriate diagnostic test of any persistent neck mass >2 cm in an adult patient. Incision and drainage is strongly discouraged without a definitive diagnosis of abscess as it can substantially alter the management of a patient with occult SCCHN metastatic to a cervical lymph node.

Sinusitis Versus Occult Sinonasal Malignancy

Acute bacterial sinusitis is a common diagnosis for patients presenting to the ED. Sinonasal cancer, on the other hand, is exceptionally rare. However, patients with cancer involving the sinuses are often treated unsuccessfully for sinusitis for weeks or months before an alternative diagnosis is entertained. The result is a delay in diagnosis that can impact the stage of disease, treatment options, and prognosis.

There are a few key differences between patients with sinusitis and sinonasal malignancy. First, the clinical presentation is strikingly different. Patients with sinonasal cancer most often present with unilateral, rather than bilateral symptoms. Unilateral nasal obstruction, persistent nasal bleeding, facial pain or pressure, facial numbness, visual changes, and/or epiphora should be carefully evaluated for a possible sinonasal malignancy. This could most readily be accomplished with a sinus CT. Any unilateral opacification of the sinuses should prompt timely referral to an otolaryngologist (Fig. 9).

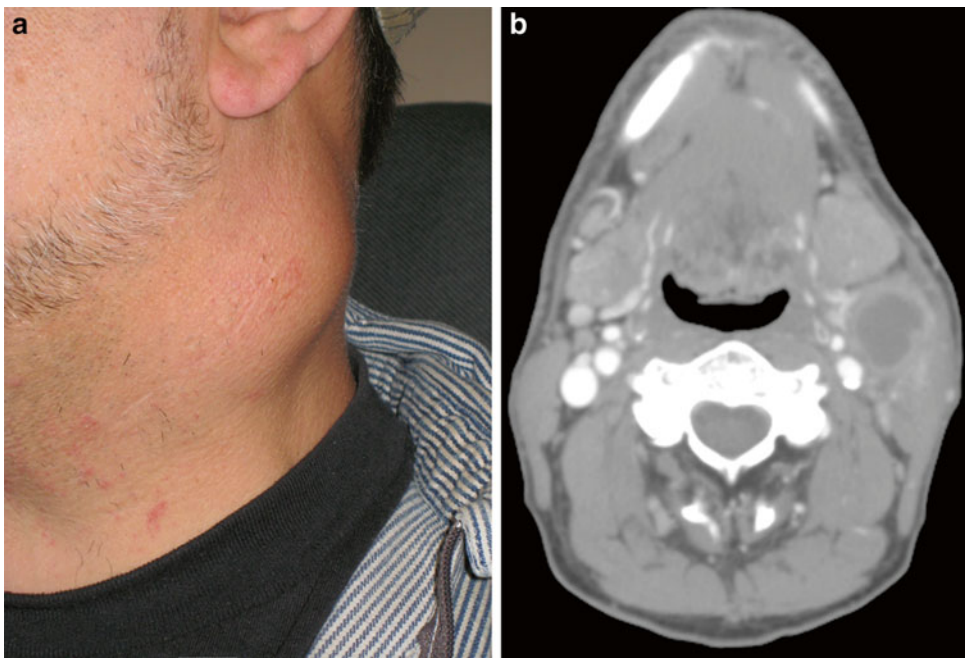

Fig. 8 Patient presenting with a non-tender left-sided neck mass (**a**) which appears cystic on axial computed tomography (CT) imaging (**b**). Any lateral neck mass in an adult should be considered cancer until proven otherwise, regardless of smoking status or other risk factors

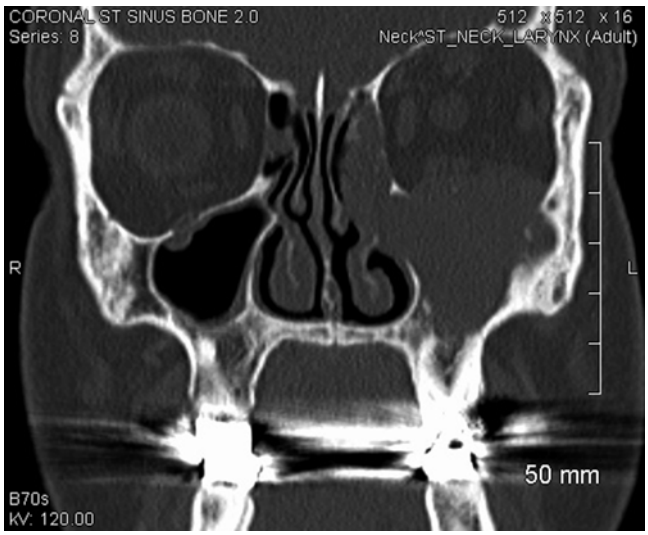

Fig. 9 Coronal computed tomography (CT) of the sinuses demonstrating a left-sided nasal cavity mass with opacification of the left maxillary sinus and ethmoid sinuses and invasion into the ipsilateral orbit. Any unilateral opacification of the sinuses is concerning for malignancy

Ear Infection Versus Occult SCCHN of the Oropharynx

Unilateral otalgia is a common presenting symptom of SCCHN involving the oropharynx, including the tonsil or base of the tongue. Other common causes of ear pain are infection and temporal mandibular joint (TMJ) disorder. It is important for medical practitioners in the ED to be able to distinguish between benign and malignant causes of ear pain. Similar to occult sinonasal malignancy, a delay in diagnosis is common for patients with SCCHN of the oropharynx.

The incidence of SCCHN involving the oropharynx (tonsil or base of the tongue) continues to increase dramatically [39]. This has been attributed to the human papillomavirus (HPV) which is now associated with >70%of these cases. Patients with HPV-associated SCCHN tend to be younger and are more often nonsmokers [40]. So they are often not thought to be at risk of head and neck cancer. However, unilateral otalgia without clinical findings of an ear infection (e.g., ear drainage, middle ear effusion, painful ear canal) should prompt a thorough evaluation of the oropharynx by a specialist to rule out occult malignancy.

Summary

The UADT is a complex area where functions of breathing and eating take place in a highly vascularized area. Patients with SCCHN will present to the ED with difficult airways. The initial physician must have a preconceived plan for airway control in these patients. Anatomy and physiology of the surgically altered airway in patients with tracheostomies and laryngectomies are essential topics to know for appropriate acute care of neck breathers. Bleeding related to treatment of SCCHN can be catastrophic. Therefore, control of the airway along with methods to temporize the patient is important. The use of pressure to tamponade a hemorrhage along with shock trauma principles can be employed before definitive management by the head and neck surgeon. There are other complications of treatment related to surgery, radiation therapy, and chemotherapy that must be recognized to prevent further complications. To avoid common pitfalls of SCCHN management, the ED physician must also be aware of distinctions between signs of malignancy and common otolaryngologic symptoms, as improper treatment can significantly decrease a patient's prognosis.

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