Advanced metastatic disease presenting with acute airway crisis: what would you do?

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Date accepted for publication 30 March 2012

Abstract

Metastatic involvement of the thyroid is extremely rare and can present many years after the primary. Rarely, they cause critical airway obstruction and death as a result. This article describes the case of a previously well 68-year-old man, who on presentation with left shoulder pain and mild shortness of breath, was found to have extensive and longstanding left cervical metastatic disease involving the thyroid and left clavicle. With the primary unknown, airway obstruction ensued and the patient died within 5 days of presentation. Several treatment options are available for palliation of airway obstruction, yet it is still a subject that perplexes and divides clinicians. This report aims to inspire debate about end-of-life issues, and emergency management of airway crisis in patients already dying from an aggressive malignant process.

Keywords

Airway obstruction; metastasis; palliative care; tracheostomy.

Introduction

Metastatic disease involving the thyroid is rare, and time from primary diagnosis to detection of thyroid secondaries is extensive. However, acute airway obstruction is a distressing cause of death in these patients. End-of-life issues and palliative management of acute airway compromise in the presence of metastatic disease continues to perplex and divide clinicians.

Case history

A 68-year-old retired lorry driver was referred to ENT at a district general hospital in southern England. He gave a history of left shoulder pain for 5 weeks and of hard left neck masses for 18 months, previously seen by his GP and now associated with hoarseness of voice, dysphagia, progressive shortness of breath and orthopnoea. He had intermittent stridor for 1 day. He denied any weight loss, fever, night sweats or systemic illness.

On examination he was well generally, afebrile with vital signs all within normal limits. Respiratory rate 10 breaths/min, oxygen saturation 95%. He had mild inspiratory stridor, which
improved with nebulized salbutamol and adrenaline. There was a $6 \times 8$ cm hard firm and fixed mass palpable at the left base of the neck, with associated left supraclavicular lymphadenopathy. Examination of the oropharynx, chest and abdomen were unremarkable.

**Computed tomography neck/thorax/abdomen report**

The computed tomography scans showed advanced aggressive neoplastic process, predominantly centred in the left lower cervical region with involvement of the left clavicle, thyroid gland and secondary thrombosis of the left internal jugular vein. Bilateral lung and adrenal metastases were present with several enlarged nodes in the lower neck bilaterally, some necrotic. Enlarged superior mediastinal and right retrocrural nodes were also present (Figs. 1 and 2). Fine-needle aspirate was reported as likely metastatic adenocarcinoma. The primary carcinoma remained unknown.

Three days after admission the patient became intermittently confused and was hallucinating. A do not attempt resuscitation (DNAR) form was discussed and completed. Stridor was worse, but intermittent and positional. After the ward round the next day, the patient became distressed and very combative; he was refusing all treatment or monitoring. He now had severe stridor with massively increased respiratory effort.

With airway obstruction and respiratory exhaustion clear and oxygen saturation at 68% on air, the ENT registrar planned to insert an emergency mini-tracheostomy. However, the ENT consultant disagreed. The patient was sedated and intubated on the ward by the consultant anaesthetist. Oxygen saturation immediately went up to 95% on high flow oxygen.

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**Fig. 1.** A chest radiograph 1 month prior was reported as normal, despite metastatic involvement of the left clavicle.

**Fig. 2.** Advance metastatic disease of the left neck: (A) coronal plane; (B) transverse plane.
The ENT consultant decided to keep the patient sedated with a midazolam and morphine infusion with additional boluses, thus allowing the family to attend and say their goodbyes. However, adequate sedation was difficult and the patient became intermittently agitated. During the afternoon, the patient received a morphine bolus 8 times the prescribed dose. Although no respiratory depression was evident, the palliative care consultant advised reversal with naloxone. This further distressed the patient, meaning that more morphine and midazolam was subsequently required.

Later in the evening with the patient settled and the family in agreement, the orotracheal tube was removed and the patient continued on the end-of-life pathway with subcutaneous morphine and midazolam. One hour later he was certified dead.

Discussion

Tracheal bronchial obstruction is a distressing cause of morbidity and mortality in patients with metastatic disease involving the thyroid. The question here is one that divides many professionals. How should we manage patients presenting with acute airway compromise who are already dying from an aggressive malignant process?

A literature search revealed a case of a 73-year-old man presenting with stridor due to thyroid metastasis from a renal cell carcinoma. He was intubated and taken to theatre for an emergency total thyroidectomy. Although not curative, this could be considered a palliative procedure.

Few doctors receive specific end-of-life training and approach it with little confidence. Many are agreed that we should do all that we can to ensure that the dying process is as peaceful as possible. Palliative care specialists have identified unresolved pain and shortness of breath as 2 of the major causes for somatic and psychological distress to the patient and their relatives. These are often cause for concern and the subject of public controversy.

Breathlessness can develop slowly or present rapidly associated with acute airway compromise as in this case. Often this indicates that death is imminent and is a common feature in the last days.

Respiratory distress can present with cough, chest pain, fatigue, agitation or air hunger. Its cause is complex and often varied. Head and neck cancers not only produce breathlessness through infiltration and compression of the airway, but are also associated with copious amounts of secretions. Still there is no guidance on management of acute compromise, and it appears decisions very much depend on the physician attending to the patient.

In the above case, we see 3 senior doctors disagree on the line of management. Each preferring either emergency tracheostomy, a temporary definitive airway or palliation and end-of-life care. Although such a rapid deterioration would have been difficult to predict, earlier discussion with the patient and his relatives may have facilitated a calmer and more structured approach, alleviating the anxiety for all involved.

There are many options available for palliation of airway obstruction. The initial choice depends on the urgency of the situation, the extent of the disease process and the surgeon's preference.

Palliative care is defined by the World Health Organization as the act of total care of patients whose disease is not responsive to curative treatment. Control of symptoms, psychological and social problems is paramount, and the therapy should not be worse than the disease. Although therapy may prolong life, this is not considered a requirement. Treatment should therefore be brief; it should be effective with minimal adverse effects.

Still the question remains, should we allow the patient to effectively suffocate to death, do we make this a more comfortable process with opiates and sedatives, and when should we intervene with more aggressive measures? In reality no structured guidance exists because there is no right or wrong way, and treatment options should be discussed in advance with the patient and their family.

As well as the central effects of opiates, they help to alleviate anxiety and make the patient less aware of respiratory fatigue. However, for the agitated and diaphoretic patient, no palliative intervention will have as dramatic an effect as a surgical airway. The patient suddenly becomes calm and peaceful. Medical literature suggests that this should be considered in all patients with airway obstruction, including patients with unresectable laryngeal or pharyngeal tumours, and patients with metastatic disease.

Even with a surgical airway in place, further palliative measures are readily used. Palliative radiotherapy is the most commonly used modality when time permits. However, symptoms often reoccur and complications of malignant disease often cause death in the interim.
Tracheal stenting has proven safe and effective in symptomatic relief of obstruction especially in patients with recurrent symptoms\textsuperscript{[10]}.

**Conclusion**

Airway obstruction when death is imminent is extremely distressing for an awake patient, relatives and even staff. Eliminating this agitation may not be possible. Even with potent sedatives and profound analgesia, the patient may not be completely comfortable, but this ultimately is still the aim. Death may come earlier as a result. However, this is not the same as euthanasia\textsuperscript{[4]}. It is therefore imperative that the wishes of the dying person and their relatives are explored as early as possible and the intended results and unintended consequences (e.g. hastening of death) are explicitly explained. Although patients with metastatic disease may present challenging clinical problems and even place added pressure on resources, through emergency airway management an experienced surgeon can achieve rewarding results. Increased education on treatment and care options should promote free and open debate amongst clinicians on end-of-life issues.

**Teaching points**

Although patients with metastatic disease may present challenging clinical problems and even place added pressure on resources, through emergency airway management an experienced surgeon can achieve rewarding results. Increased education on treatment and care options should promote free and open debate amongst clinicians on end of life issues. The Liverpool Care Pathway\textsuperscript{[12]} informs clinicians’ management in such cases.

**Disclosure**

The author reports no conflicts of interest.

**References**