

Main Article

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Palliative care management of head and neck cancer patients among otolaryngology surgeons: a novel national survey assessing knowledge, decision making, perceived confidence and training in the UK

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Abstract

Objective. Management of head and neck cancer patients provides unique challenges. Palliation serves to optimise quality-of-life by alleviating suffering and maintaining dignity. Prompt recognition and management of suffering is paramount to achieving this. This study aimed to assess perceived confidence, knowledge and adequacy of palliative training among UK-based otolaryngologists.

Method. Eight multiple-choice questions developed by five palliative care consultants via the Delphi method were distributed over five weeks. Knowledge, perceived confidence and palliative exposure among middle-grade and consultant otolaryngologists were assessed, alongside training deficits.

Results. Overall, 145 responses were collated from middle-grade ($n = 88$, 60.7 per cent) and consultant ($n = 57$, 39.3 per cent) otolaryngologists. The mean knowledge score was 5 out of 10, with 22.1 per cent ($n = 32$) stating confidence in palliative management. The overwhelming majority ($n = 129$, 88.9 per cent) advocated further training.

Conclusion. A broad understanding of palliative care, alongside appropriate specialist involvement, is key in meeting the clinical needs of palliative patients. Curriculum integration of educational modalities such as simulation and online training may optimise palliative care.

Introduction

Head and neck squamous cell carcinoma (SCC) is one of the most prevalent cancers worldwide. In 2018, there were 450 000 deaths from head and neck SCC and a further 890 000 newly diagnosed individuals across the globe.¹ In the UK alone, there are over 12 000 new cases per year, and it is the eighth most common cancer overall, rising to fourth most common within the male demographic.² There are over 4000 deaths from head and neck SCC in the UK yearly, with death rates increasing by 17 per cent over the last 10 years.² Cases are often correlated with excess alcohol and tobacco use. More recently, association with human papilloma virus 16/18 or Epstein-Barr virus has also been recognised.¹ Rates of head and neck SCC continue to rise worldwide and approximately by 30 per cent since 1990 in the UK.²

With over 60 per cent of head and neck cancers presenting with advanced disease,³ palliation is often the focus of management. Relieving serious health-related suffering, be it physical, psychological, social or spiritual, is the core principle of palliative care and is paramount in maintaining dignity and comfort and improving quality of life.⁴ Patients with head and neck cancer often require palliative care input, whether their disease is curable or not, because of the extensive morbidity associated with both the consequences of the disease process and the treatment interventions.⁵

Palliation of head and neck cancer patients is a complex area requiring a multi-disciplinary team approach. The control of distressing advanced symptoms of head and neck SCC, including pain, bleeding, anxiety, agitation, dyspnoea and dysphagia alongside management of nutritional and hydration needs can present extreme challenges to the otolaryngology team.³ Furthermore, an awareness of the framework and timely consideration of appropriate levels of medical intervention, including 'do not attempt cardiopulmonary resuscitation' orders is imperative.

Despite the frequent involvement of otolaryngologists in the management of head and neck cancer patients, little emphasis is placed upon palliative care within the higher surgical training curriculum, leading to a distinct lack of perceived confidence in the management of such patients.

According to the Intercollegiate Surgical Curriculum Programme for Otolaryngology (August 2021),⁶ clinicians are expected to develop the ability to manage the dying patient appropriately, in conjunction with the palliative care team. Trainees are expected to have

the palliative care knowledge to be able to care for a terminally ill patient and appropriately use analgesia, antiemetics and laxatives.⁶ Yet despite such expectations, the majority of knowledge is likely accrued through self-directed learning and direct exposure, which can be variable based on unit expertise and geographic location.

Furthermore, the considerable disruption to oncology services⁷ caused by the coronavirus disease (Covid-19) pandemic is expected to significantly intensify demands on palliative care services. Delays in cancer detection and expected significant backlogs will inevitably lead to more advanced disease at presentation.⁸ It is thus imperative that otolaryngologists possess the knowledge and confidence to adequately assess and manage non-complex palliative care needs and terminal oncological events, such as major haemorrhage.

This study aimed to evaluate knowledge, decision-making and perceived confidence surrounding the palliative management of head and neck cancer patients among middle-grade and consultant otolaryngologists within the UK.

Materials and methods

A national 14-point confidential online survey was distributed among middle-grade and consultant otolaryngologists over a 5-week capture period. Dissemination was via social media platforms as well as central circulation through internal mailing lists and deanery training programme directors.

The survey included eight knowledge and scenario-based multiple-choice questions, which were developed collaboratively by a group of ENT surgeons and five palliative medicine consultants. Scenario formulation was based on a suitable range of real-life palliative head and neck patient encounters. Answers were ratified using a modified Delphi method to obtain global consensus. An adequate baseline knowledge and understanding of palliative head and neck cancer management was required to answer correctly, with a maximal attainable score of 10.

Further, respondent demographic data, such as training grade, subspecialty and deanery, were collated in addition to participants' exposure to formal palliative training. Perceived confidence was assessed using a 5-point Likert scale (1 = strongly agree, 5 = strongly disagree), with further questioning on the adequacy of education to date and scope for further integration within the otolaryngology curriculum.

Results

Respondent demographic and perceived confidence

In total, 145 responses were collated from middle-grade ($n = 88$, 60.7 per cent) and consultant ($n = 57$, 39.3 per cent) otolaryngologists across the UK. The majority of responses were received from the West Midlands ($n = 67$, 46.2 per cent), London ($n = 16$, 11.0 per cent) and the South West ($n = 15$, 10.3 per cent) deaneries (Figure 1). Only three respondents (2.1 per cent) indicated that they had undertaken a palliative care rotation during their postgraduate training. Response to the statement 'I am confident in the palliative management of head and neck cancer' was as follows: strongly agree, $n = 2$ (1.4 per cent); agree, $n = 30$ (20.7 per cent); neutral, $n = 58$ (40 per cent); disagree, $n = 37$ (25.5 per cent); and strongly disagree, $n = 18$ (12.4 per cent).

Mean score of knowledge-based questions

The mean overall knowledge score attained was 5 of 10. The mean scores among middle grades and consultants were 5.2 of 10 and 4.3 of 10, respectively (Figure 2 and 3).

Knowledge-based question breakdown

On the question relating to end-of-life anticipatory medication prescribing (Figure 4), 55 (37.9 per cent) respondents correctly selected subcutaneous boluses, which was option (b). Option (c) was selected by 46 (31.7 per cent), option (d) by 18 (12.4 per cent), option (a) by 7 (4.7 per cent) and 19 (13.1 per cent) were uncertain.

Regarding first line treatment of neuropathic pain (Figure 5), 43 (29.7 per cent) respondents correctly opted for gabapentin, which was option (c). Morphine sustained release, pregabalin and diclofenac were selected by 26 (17.9 per cent), 59 (40.7 per cent) and 1 (0.7 per cent), respectively, and 16 (11 per cent) were uncertain.

On do not attempt cardiopulmonary resuscitation decision-making (Figure 6), correct options (b) and (c) were selected by 114 (78.6 per cent) and 104 (71.7 per cent), respectively. Options (a) and (d) were chosen by 69 (47.6 per cent) and 34 (23.4 per cent), respectively, with 4 (2.7 per cent) indicating uncertainty.

With regard to managing catastrophic bleeding in a palliative patient (Figure 7), 41 (28.3 per cent) selected the correct option of 10 milligrams of intramuscular midazolam, which was option (c). Incorrect options (a), (b) and (d) were opted for by 5 (3.4 per cent), 31 (21.4 per cent) and 53 (36.6 per cent) respondents, respectively, with 15 (10.3 per cent) who were uncertain.

In the case of aggressive and rapidly progressive anaplastic thyroid cancer (Figure 8), the majority of respondents correctly opted for option (d); however, far fewer respondents also correctly selected tracheal stenting (a) for symptomatic relief. Surgical tracheostomy and palliative radiotherapy were inappropriately selected by 12 (8.3 per cent) and 34 (23.4 per cent) respondents, respectively. A small number of respondents ($n = 10$, 6.9 per cent) indicated they were unsure.

In a challenging scenario involving significant blood loss secondary to oropharyngeal malignancy (Figure 9), only 35 (24.1 per cent) opted for the most appropriate management option (b). The majority ($n = 74$, 51 per cent) selected option (d), omitting blood transfusions from their management strategy. Small numbers chose options (a) and (c) involving embolisation ($n = 11$, 7.6 per cent and $n = 17$, 11.7 per cent, respectively). Only 8 (5.5 per cent) selected uncertainty.

In a case relating to lasting power of attorney (Figure 10), the most appropriate option would be for admission with best supportive care (b) as per the daughter's wishes, selected by 60 respondents (41.4 per cent). A similar number ($n = 62$, 42.8 per cent) opted for option (a), involving computerised tomography (CT) which would only be merited if invasive intervention was planned contrary to the lasting power of attorney decision. Very few selected options (c) and (d) involving surgical tracheostomy ($n = 5$, 3.4 per cent and $n = 3$, 2.1 per cent, respectively), with 15 (10.3 per cent) uncertain.

The scenario shown in Figure 11 was the least divisive with 117 (80.7 per cent) respondents correctly selecting option (c) involving ceiling of care based on collaborative decision-making with the patient. Small numbers opted for alternative strategies: (a), $n = 7$ (4.8 per cent); (b), $n = 8$ (5.5 per cent); (d), $n = 3$ (2.1 per cent); and 10 (6.9 per cent) uncertain. See Appendices 1–8 for further information.

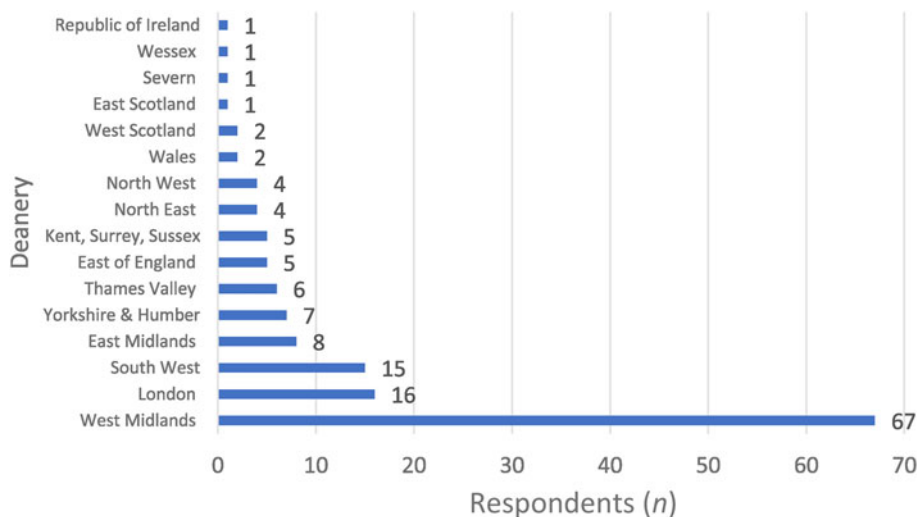


Fig. 1. Total number of respondents per UK deanery.

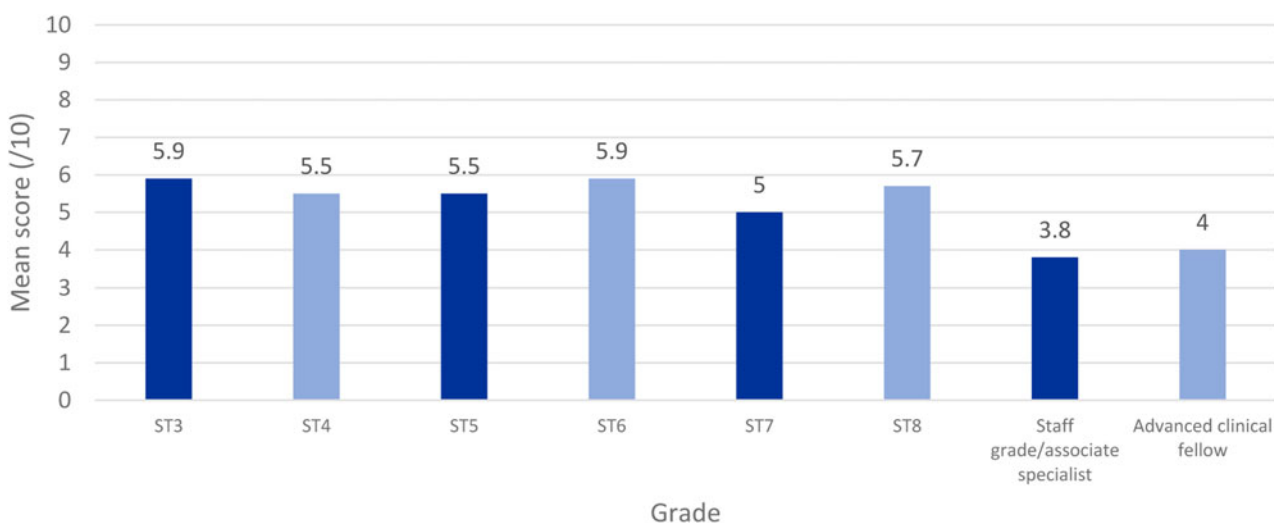


Fig. 2. Mean knowledge score (out of 10) by grade amongst middle-grade otolaryngologists. ST = specialty trainee year

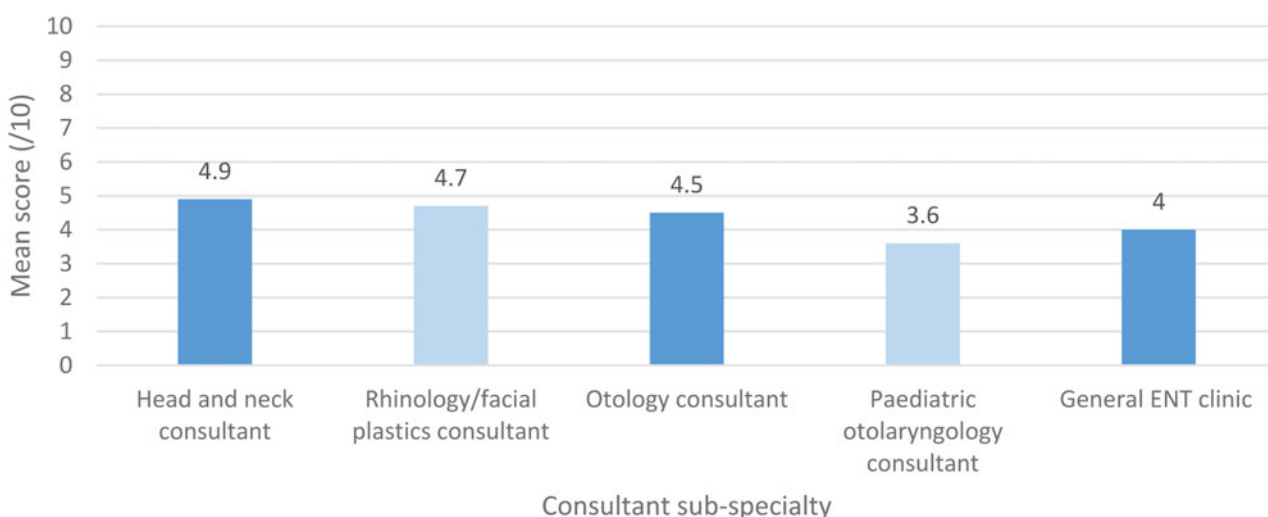


Fig. 3. Mean knowledge score (out of 10) by sub-specialty among otolaryngology consultants.

Further training

The considerable majority of respondents, 129 (88.9 per cent), agreed that further palliative care training should be incorporated into the current otolaryngology curriculum. Only four (2.8 per cent) respondents disagreed. Regarding educational

modalities by which further palliative care education could be delivered, 94 (64.8 per cent) selected group sessions, 71 (49.0 per cent) selected online modules, 57 (39.3 per cent) chose simulation, 49 (33.8 per cent) opted for lecture-based teaching and 2 (1.4 per cent) suggested a period of attachment to a palliative care team (Figure 12).

- 1) A 59-year-old HIV positive patient with metastatic SCC of the oropharynx has rapidly deteriorated with trismus, dysphagia and pain. He has declined all further nutritional support, does not wish to be resuscitated, and has no active symptoms at present. The nursing team are providing ward-based end of life care and are requesting anticipatory medications to be prescribed. What would be the most appropriate initial regime to prescribe on an 'as required' basis?
- Oral morphine, oral midazolam, oral cyclizine, oral hyoscine butylbromide
 - Subcutaneous bolus morphine, subcutaneous bolus midazolam, subcutaneous bolus cyclizine, subcutaneous bolus hyoscine butylbromide
 - Syringe driver with morphine, midazolam, cyclizine and hyoscine butylbromide
 - Intravenous bolus morphine, intravenous bolus midazolam, intravenous bolus cyclizine, intravenous bolus hyoscine butylbromide
 - Unsure

Fig. 4. Multiple choice question 1 regarding a human immunodeficiency virus (HIV) positive patient with metastatic squamous cell carcinoma (SCC) of the oropharynx.

- 2) A 62-year-old man with a metastatic adenoid cystic parotid tumour with fungating neck mass and facial nerve involvement is complaining of hyperalgesia with radiating facial pain. He has tried oramorph 10 mg TDS with no benefit. What would be the next most appropriate analgesia to commence?
- MST (morphine sustained release) 50 mg BD
 - Pregabalin 150 mg BD
 - Gabapentin 300 mg OD
 - Diclofenac 50 mg TDS
 - Unsure

Fig. 5. Multiple choice question 2 regarding a patient with a metastatic adenoid cystic tumour. TDS = three times a day; BD = twice daily; OD = once daily

- 3) Regarding DNACPR (do not attempt cardiopulmonary resuscitation) decisions, which of the following statements are correct? (Select ALL that apply)
- DNACPR decisions need to be made in agreement with the patient wishes
 - A second professional opinion should be offered if a patient, or their relative, does not agree with a DNACPR decision
 - DNACPR decisions should be discussed with patient, unless there is a clear risk of psychological harm
 - DNACPR decisions must be made by the consultant in charge of care
 - Unsure

Fig. 6. Multiple choice question 3 on do not attempt cardiopulmonary resuscitation (DNACPR) decisions.

Discussion

At its peak, the Covid-19 pandemic led to an unprecedented disruption of healthcare services and a necessary shift in priority towards identifying and treating Covid-19 infected patients.⁹ As such, routine cancer surveillance, two-week

wait referrals and cancer surgery were suspended for variable periods of time. An audit of cancer diagnoses in Italy found a reduction of 39 per cent during the initial pandemic period in contrast to the previous 2 years.¹⁰ The true impact of cancer diagnosis delay is yet to be fully determined in the UK as

- 4) In a palliative head and neck cancer patient actively experiencing catastrophic haemorrhage, which of the following actions should be undertaken?
- Administration of 10mg intramuscular morphine
 - Administration of 10mg subcutaneous diamorphine
 - Administration of 10mg intramuscular midazolam
 - Administration of 5mg intramuscular morphine and 5mg intramuscular midazolam
 - Unsure

Fig. 7. Multiple choice question 4 regarding a palliative head and neck regarding catastrophic haemorrhage.

- 5) A 34-year-old female with two young children has recently been diagnosed with metastatic anaplastic thyroid carcinoma with tracheal involvement. Over a two-week period, she has developed dyspnoea and stridor. She has expressed that she wishes to have end of life care at home. Choose the most appropriate management options. (Select ALL that apply)
- Tracheal stenting
 - Undertake a surgical tracheostomy
 - Undertake palliative radiotherapy
 - Discharge home with palliative care support and end of life care medications
 - Unsure

Fig. 8. Multiple choice question 5 regarding a patient with metastatic anaplastic thyroid carcinoma with tracheal involvement.

- 6) A 41-year-old male with a recurrence of T₄N₃M₀ oropharyngeal malignancy is admitted to A&E with an active bleed from an extensive fungating neck wound. His haemoglobin count has dropped from 70mg/dl to 50mg/dl. He has previously expressed a desire for comfort-focused care. Which is the most appropriate management?
- Patient to remain for resuscitation, blood transfusion and embolisation
 - DNACPR, blood transfusion and ward-based care with anticipatory medications
 - DNACPR, blood transfusion and embolisation
 - DNACPR, not for further blood transfusions, ward-based care with anticipatory medications
 - Unsure

Fig. 9. Multiple choice question 6 regarding a patient with recurrence of T₄N₃M₀ oropharyngeal malignancy. A&E = accident and emergency; DNACPR = do not attempt cardiopulmonary resuscitation

normal oncological services resume. However, UK-based modelling studies, unfortunately and somewhat unsurprisingly, predict a substantial rise in avoidable cancer deaths in the foreseeable future because of delayed diagnoses,⁸ with two thirds of cases initially presenting with advanced disease prior to Covid-19.³

Specialist input from palliative care teams is often sought by clinicians at an early stage to ensure optimal management of these patients. Management of this subset of patients is uniquely complex and challenging. By nature of anatomical location, head and neck cancer and its management may have significant adverse effects on the most basic human functions, such as breathing, eating and speaking.¹¹ Furthermore,

cosmetic disruption of the head and neck, inability to verbally communicate and alternative routes of nutrition may amount to significant adverse psychological impact on both patients and their family members.¹² With oncological burden among all specialties expected to rise profoundly as a result of the Covid-19 pandemic, specialist services are likely to become more stretched and less readily available for routine palliative care management, resulting in an expectation that head and neck disease and incidents of major haemorrhage, including carotid blowout, may increase. Therefore, sound knowledge of anticipatory medications and catastrophic haemorrhage protocol is also fundamental.

7) A 69-year-old male with dementia, COPD and Parkinson’s disease, has been admitted from a nursing home with new-onset stridor. Flexible nasendoscopy confirms a bilateral vocal cord palsy but no evidence of malignancy. His daughter has lasting power of attorney (LPA) for health and welfare. She does not wish her father to have any invasive intervention. Select the most appropriate option.

- a) Admission, nebulised adrenaline, intravenous dexamethasone, and CT base of skull to diaphragm
- b) Admission to ward with best supportive care
- c) Consent form 4 for a surgical tracheostomy in best interests
- d) Challenge the daughter’s LPA status in order to perform a surgical tracheostomy
- e) Unsure

Fig. 10. Multiple choice question 7 regarding a patient with dementia, chronic obstructive pulmonary disease (COPD) and Parkinson’s disease. CT = computed tomography

8) A 70-year-old male with T4aN2bM0 right base of tongue SCC who underwent a tracheostomy was recently admitted to ITU for chest sepsis. Subsequently he developed left hemiparesis due to cerebral infarct but retains capacity for medical decisions. He is no longer fit for radiotherapy but has been having intermittent bleeding from the tumour, requiring repeated frequent blood transfusions. What would be the most appropriate management approach?

- a) Pack oropharynx, transfer to ITU and consider embolisation
- b) Continue transfusions with aim to keep haemoglobin above 80mg/dl
- c) Decide on ceiling of treatment including discontinuing transfusions, based on shared decision-making with patient
- d) Discontinue transfusions in best interests of the patient
- e) Unsure

Fig. 11. Multiple choice question 8 regarding a patient with T₄aN₂bM₀ right base of tongue squamous cell carcinoma (SCC). ITU = intensive care unit

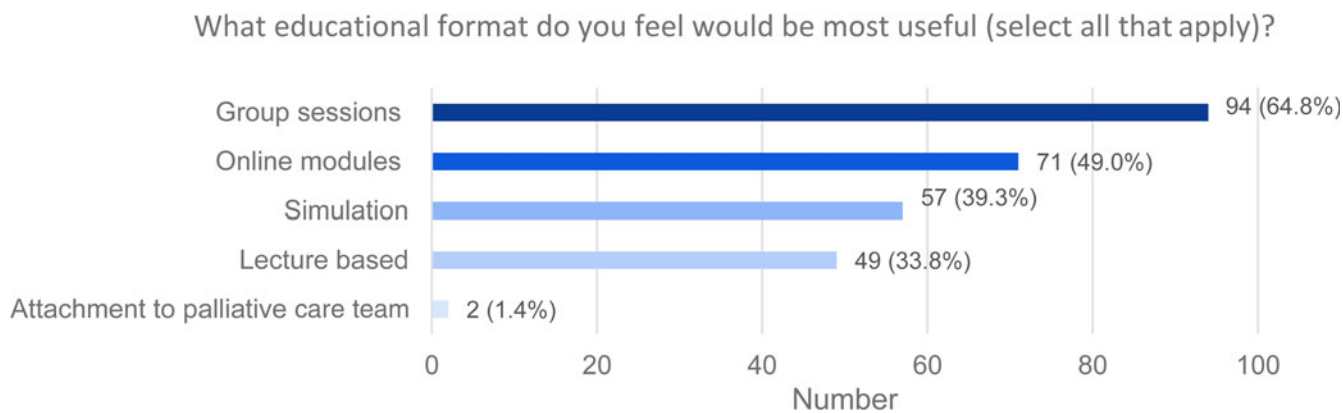


Fig. 12. Educational modalities selected by respondents.

An understanding of medical and surgical management of palliative head and neck cancer patients, as well as knowledge of complications associated with surgical and non-surgical management, are core competencies outlined in the

intercollegiate otolaryngology curriculum.⁶ However, our experience suggests that current coverage of palliative head and neck cancer in the specialty curriculum is relatively sparse and inconsistent, with many trainees relying on prerequisite

knowledge and principles acquired from rotations during junior medical training. Our survey has shown a general lack of palliative care experience, with only 2.1 per cent having undertaken a postgraduate palliative care rotation. A lack of perceived confidence among the surveyed cohort was also demonstrated, with 55 (37.9 per cent) stating a lack of confidence, 58 (40 per cent) stating neutrality and only 32 (22.1 per cent) respondents indicating that they are confident in palliative head and neck cancer management.

Our novel survey, designed and ratified by five palliative care consultants utilising the Delphi Method, included eight multiple-choice questions based on real-life patient scenarios. They were specifically designed to test knowledge and decision-making surrounding key elements of palliative care management, including prescribing, do not attempt cardiopulmonary resuscitation considerations and end-of-life care decisions relating to invasive and non-invasive interventions.

Each of the three questions assessing prescribing knowledge around anticipatory medications were answered correctly by less than half of the surveyed cohort. Regarding prescribing of anticipatory medications on an 'as required' basis, 37.9 per cent ($n = 55$) correctly opted for subcutaneous bolus injections for symptom-control. National Institute of Health and Care Excellence (NG31)¹³ recommend either subcutaneous or intravenous administration; however, in the palliative head and neck cancer patient with poor nutritional status, intravenous access is likely to cause further distress, making subcutaneous injection the more appropriate option. Furthermore, in the event of a palliative head and neck cancer patient experiencing catastrophic bleeds, such as in cases of carotid blowout, the aim of therapy is to alleviate anxiety and distress.¹⁴ Because of its rapid onset of action and administration, midazolam is the most frequently recommended drug in cases of terminal haemorrhage.¹⁵ Considering preparation and administration time, intramuscular administration of 10 milligrams of midazolam was the most suitable option in our survey relating to catastrophic haemorrhage, selected by only 28.3 per cent ($n = 41$) of respondents.

With a 5-year survival between 19 and 59 per cent, prognosis for head and neck cancer patients is relatively poor, making do not attempt cardiopulmonary resuscitation a vital consideration. Do not attempt cardiopulmonary resuscitation decisions are made where cardiopulmonary resuscitation is clinically judged very unlikely to be effective and should always be discussed with the patient and family where possible.¹⁶ Clinicians should be aware of the principles surrounding do not attempt cardiopulmonary resuscitation decision-making. Our survey question corresponding to do not attempt cardiopulmonary resuscitation decision-making was answered correctly by the majority, with 78.6 per cent ($n = 114$) acknowledging the need for a second professional opinion in cases where patients or relatives disagree with a do not attempt cardiopulmonary resuscitation decision taken and 71.1 per cent ($n = 104$) correctly determining that do not attempt cardiopulmonary resuscitation decisions should be discussed with patients unless there is a clear risk of causing psychological harm.¹⁶

Questions assessing end-of-life care decision-making, clinical application and invasive versus non-invasive intervention were answered with variable accuracy. In the scenario involving a relatively young patient with anaplastic thyroid cancer, expressing the desire for end-of-life care at home, most respondents ($n = 115$, 79.3 per cent) acknowledged the need to provide palliative care support at home in line with the patient's wishes. However, given the short history of dyspnoea

and stridor signalling impending airway compromise, far fewer respondents ($n = 43$, 29.7 per cent) also opted for tracheal stenting as a necessary and life-preserving intervention. Similarly, in the scenario involving an actively bleeding fungating neck wound in a patient desiring comfort-focused care, the majority ($n = 74$, 51 per cent) opted for do not attempt cardiopulmonary resuscitation, ward-based care with anticipatory medications and no further blood transfusions. However, 24.1 per cent ($n = 31$) correctly opted to follow this same management strategy with the exception of giving blood transfusions to provide symptomatic relief.

With regards to lasting power of attorney (LPA) the attorney is designated to make health and welfare decisions in the best interests of the person they represent, when a patient has lost capacity to make decisions for themselves.¹⁷ LPA decisions may only be overridden by a medical professional where the lasting power of attorney does not act in a patient's best interests or contradicts a previous advanced directive made by the patient. In the scenario we described, the patient's daughter, who has lasting power of attorney, wishes to avoid invasive intervention. Thus, in this case of new-onset stridor in a patient with significant co-morbidities, admission to the ward with best supportive care would be the most appropriate action, selected by 41.1 per cent ($n = 60$) of respondents. A similar number ($n = 62$, 42.8 per cent) also opted for CT of the base of skull to diaphragm. However, since invasive treatment is to be avoided based on the lasting power of attorney decision, any findings on CT scan would be unlikely to alter management.

The final question is based on a patient with advanced base of tongue squamous cell carcinoma (SCC), stepped down from intensive care following chest sepsis and a recent cerebral infarct, and now intermittently bleeding from his tumour. This question provoked the least discrepancy in responses, with the majority ($n = 117$, 80.7 per cent) correctly opting to determine a ceiling of care based on shared decision-making with the patient.

Although palliative care decisions are by no means binary and rely on sound clinical judgement applied on a case-by-case basis, our survey has evidenced global knowledge deficits, with an overall mean score of 5.0 out of 10 amongst the 145 participating clinicians of both middle grade and consultant level. Educational interventions will certainly help otolaryngologists manage increasing austerity and pressure as the National Health Service, as a whole, attempts to tackle enormous backlogs of cancer patients in the wake of the Covid-19 pandemic.

- Palliative medicine is an integral part of multi-disciplinary team approach to head and neck cancer patients at end-of-life
- Head and neck cancer can present in advanced disease, and patients can suffer catastrophic events
- Coronavirus disease 2019 has caused delay in cancer diagnosis and management, with increased presentation of advanced disease
- This study highlights a lack of palliative care education and exposure, with a consequent lack of perceived confidence and knowledge
- A significant majority of surveyed otolaryngologists advocated for specific palliative care education in the national otolaryngology curriculum

Ballou and Brasel (2019) noted that although palliative care is a central component of surgical practice, postgraduate education and training opportunities are limited.¹⁸ At present, there is a lack of consensus in the literature regarding the optimal modality through which palliative care education can be delivered. However, simple interventions, such as palliative

care based workshops, have been shown to significantly improve palliative care knowledge and attitudes in the short term.^{19,20} As well as group sessions, online modules were also favoured as a potential educational modality among our surveyed cohort ($n = 94$, 64.8 per cent and $n = 71$, 49 per cent, respectively). Online palliative care training has been trialled amongst undergraduate nurses and subjectively gauged to be successful.²¹ The authors were unable to find evidence in the literature of this approach amongst surgical faculty but acknowledge that online training provides a convenient and accessible means by which education can be widely disseminated. Furthermore, simulation-based education is becoming increasingly commonplace, with the clear advantage of being able to learn and acquire valuable skills through practice without the risk of causing patient harm.²² Simulation-based education has been shown effectively to improve confidence and competencies in palliative care among other healthcare specialties and disciplines.^{23–25}

Conclusion

The Covid-19 pandemic combined with evolving patient demographics has resulted in an unprecedented demand for palliative care services globally. Head and neck cancer patients provide complex clinical challenges for healthcare professionals involved in their care, and a broad working knowledge of palliative care is imperative. The results of our novel survey suggest an association between a lack of postgraduate palliative care experience, and reduced confidence in the management of palliative head and neck cancer patients by otolaryngologists. Timely involvement of core multidisciplinary team members, combined with the incorporation of educational resources, and more clearly defined learning objectives within the higher surgical training curriculum may ease patient suffering and improve quality of life.

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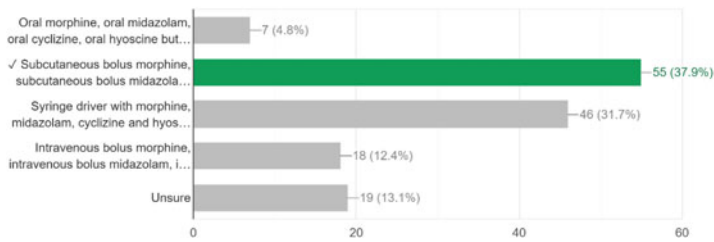
Competing interests. None declared

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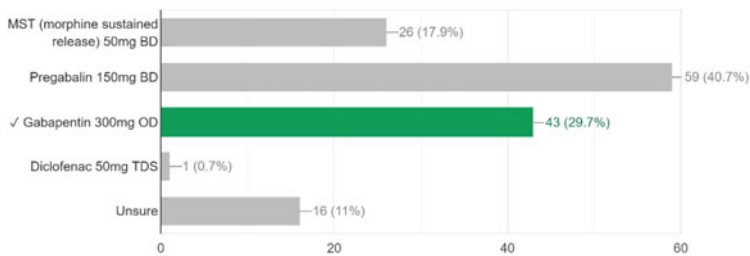
Appendix 1. Chart of performance in question 1

5. A 59-year-old HIV positive patient with metastatic SCC of the oropharynx has rapidly deteriorated with trismus, dysphagia and pain. He has a current regime to prescribe on an 'as required' basis?
55 / 145 correct responses



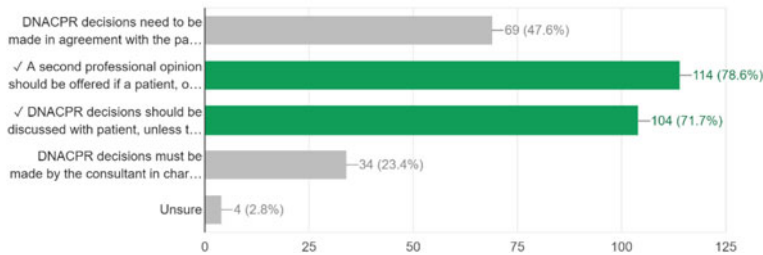
Appendix 2. Chart of performance in question 2

6. A 62-year-old man with a metastatic adenoid cystic parotid tumour with fungating neck mass and facial nerve involvement is complaining of hyaline secretions. What is the next most appropriate analgesia to commence?
43 / 145 correct responses



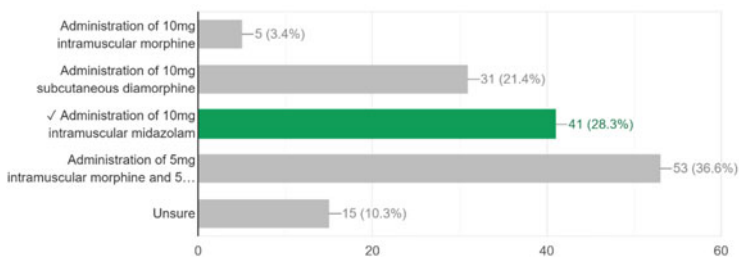
Appendix 3. Chart of performance in question 3

7. Regarding DNACPR (do not attempt cardiopulmonary resuscitation) decisions, which of the following statements are correct? (Select ALL that apply)
33 / 145 correct responses



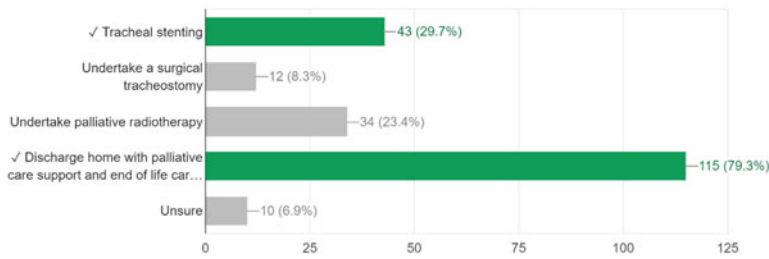
Appendix 4. Chart of performance in question 4

8. In a palliative head and neck cancer patient actively experiencing catastrophic haemorrhage, which of the following actions should be undertaken?
41 / 145 correct responses



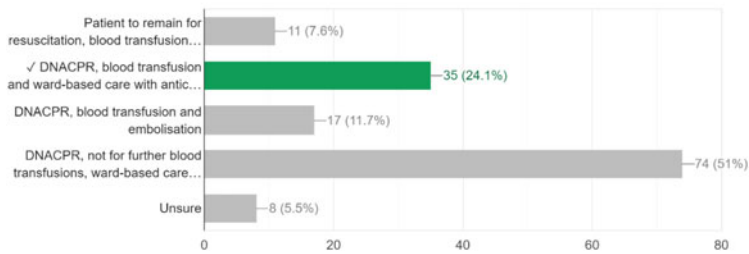
Appendix 5. Chart of performance in question 5

9. A 34-year-old female with two young children has recently been diagnosed with metastatic anaplastic thyroid carcinoma with tracheal involvement. What are the most appropriate management options. (Select ALL that apply)
10 / 145 correct responses



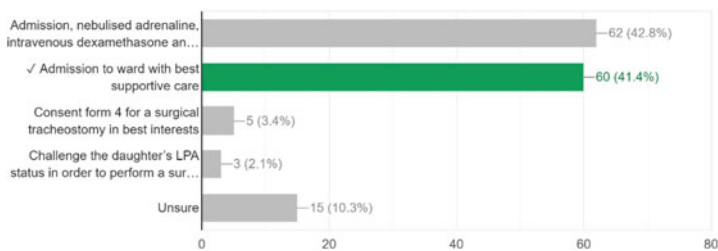
Appendix 6. Chart of performance in question 6

10. A 41-year-old male with a recurrence of T4bN3M0 oropharyngeal malignancy is admitted to A&E with an active bleed from an extensive fungating ulcer. What is the most appropriate management?
35 / 145 correct responses



Appendix 7. Chart of performance in question 7

11. A 69-year-old male with dementia, COPD and Parkinson's disease, has been admitted from a nursing home with new-onset stridor. Flexible nasendoscopy is planned. What is the most appropriate option.
60 / 145 correct responses



Appendix 8. Chart of performance in question 8

12. A 70-year-old male with T4aN2bM0 right base of tongue SCC who underwent a tracheostomy was recently admitted to ITU for chest sepsis. What should be the most appropriate management approach?
117 / 145 correct responses

