SHORT COMMUNICATION

Remote triaging of urgent suspected head and neck cancer referrals: our experience during the first wave of the COVID-19 pandemic

Hesham Kaddour[1] · Guled M. Jama[1] · Sami Stagnell[2] · Sarah Kaddour[3] · Karen Guner[1] · Gaurav Kumar[1]

Abstract

Purpose In response to the coronavirus disease 2019 (COVID-19) pandemic, otolaryngology departments across the United Kingdom have adopted non-face-to-face clinics with consultations being carried out remotely, via telephone or video calls. By reducing footfall on hospital sites, the aim of this strategy was to limit direct contact and curb the spread of infection. This report outlines our experience of conducting a telephone triage clinic in the assessment of urgent suspected head and neck cancer referrals during the first wave of the COVID-19 pandemic.

Methods New patients who were referred on the urgent suspected head and neck cancer pathway were prospectively identified between 1 May 2020 and 31 August 2020. Patients were triaged remotely using telephone consultations. Risk stratification was performed using the 'Head and Neck Cancer Risk Calculator' (HaNC-RC v.2).

Results Four-hundred and twelve patients were triaged remotely during the 4-month study period. Of these, 248 patients were deemed 'low risk' (60.2%), 78 were classed as 'moderate risk' (18.9%) and 86 were considered 'high risk' (20.9%) according to the HaNC-RC v.2 risk score. Twenty-four patients who were assessed during the study period were diagnosed with head and neck cancer (5.82%).

Conclusion The use of teleconsultation, supported by a validated, symptom-based risk calculator, has the potential to provide a viable and effective adjunct in the assessment and management of new suspected head and neck cancer patients and should be considered as part of the inherent re-shaping of clinical service delivery following the ongoing pandemic.

Keywords Head and neck neoplasms · Referral and consultation · Triage · Risk assessment · Telemedicine · COVID-19

Introduction

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus responsible for causing coronavirus disease 2019 (COVID-19), was first reported in Wuhan (China) in December 2019 [1]. The first case in the United Kingdom (UK) was detected on 29th January 2020 [2]. On 11th March 2020, the World Health Organization (WHO) declared COVID-19 a global pandemic [3]. On 23rd March 2020, the UK Government ordered a national lockdown, implementing a 'stay at home' message and restricting non-essential travel to curb the spread of the virus [4].

In response to the pandemic, NHS England has adapted existing cancer waiting time guidance and recommended the use of telephone triage consultations to stream patients directly to a test, where appropriate, and minimise interactions and appointments with health services [5]. Furthermore, in a statement during the initial peak of the pandemic, the British Association of Head and Neck Oncologists (BAHNO) advocated prioritising referrals that are likely to represent malignancy and deferring or discharging those with a lower likelihood of cancer [6].

To help triage new suspected head and neck cancer referrals and support clinical decision making, the British Association of Otorhinolaryngology—Head and Neck Surgery (ENT UK) recommended the use of an online, symptom-based risk calculator which uses a combination of relevant symptoms, patient demographics and social history factors

✉ Guled M. Jama
guled.jama@nhs.net

[1] Department of Otolaryngology, Queen's Hospital, Romford, UK

[2] Department of Oral Surgery, East Surrey Hospital, Redhill, UK

[3] Public Health England, London, UK

to provide a personalised probability of head and neck cancer [7, 8].

The aim of this report was to outline our early experience of implementing a remote triaging clinic in the assessment of new patients who were referred to our department with suspected head and neck cancer during the first wave of the COVID-19 pandemic.

Methods

Patients who were referred by their general practitioner on the urgent suspected head and neck cancer pathway to the Department of Otolaryngology at Queen's Hospital in Romford were prospectively identified over a 4-month period between 1 May 2020 and 31 August 2020.

Consultations were conducted using telephone appointments. Patients were notified by letter and text message prior to their appointments. Eight new referrals were booked into each clinic session, equivalent to 4 h, allowing for a maximum of 30 min per patient. Consultations took place from a secured office to help maintain patient privacy and confidentiality. Details of each patient, including their referral letter, relevant medical background information and the results of prior investigations, were available to the consultant via an electronic patient record platform. All consultations in the current study were conducted by the first author (HK).

The consultant made contact with patients on their preferred telephone number as previously provided and would introduce himself at the beginning of the call, confirm the patient's identity, explain the reason for the call and obtain their verbal consent to proceed with the consultation. A full detailed medical history would then be taken and documented. Patients' reported symptoms, signs and relevant details from their social history were elicited and recorded. Risk stratification was performed using the 'Head and Neck Cancer Risk Calculator' (HaNC-RC v.2), an online tool which is freely available at: http://orlhealth.com/risk-calculator-2.html. Patients were stratified into 'low risk' ($< 2.2\%$), 'moderate risk' ($2.2–7.09\%$), or 'high risk' ($\geq 7.1\%$) groups according to their risk scores.

A provisional diagnosis if reached, including a plan of management, would be explained to the patient. Subsequent investigations, if required, were requested remotely and a letter to the referring physician, including a copy to the patient, were dictated electronically at the end of each consultation.

Where patients did not respond or were not available to take the call, a second attempt would be made 30 min later. If no reply was received, the patient would then be marked as 'Did Not Attend' (DNA) and a further telephone appointment would be offered typically the following week, if available.

Details for each patient's referral, including patient demographics, clinical presentation, risk score and outcome, including any investigations requested, were recorded prospectively in an electronic spreadsheet (Microsoft Excel 2018, Microsoft Corporation, Redmond, VA, USA).

All patients were followed up for a period of 12 months following their initial assessment.

Results

Four-hundred and fifty-one referrals were received during the 4-month study period. These included 194 male and 257 female patients (M:F ratio 1:1.32). The mean age of the cohort was 51.8 years (± 17.4 years). Thirty-nine patients were not contactable on their first telephone appointment and, therefore, had their consultations rescheduled for a later date (8.6%). The remaining 412 patients were available and were remotely triaged for the purpose of the analysis (91.4%).

The majority of referrals received were deemed 'low risk' (248 patients) (60.2%). Seventy-eight patients were classed as 'moderate risk' (18.9%), while the remaining 86 referrals were considered 'high risk' (20.9%) according to their HaNC-RC v.2 scores (Fig. 1). Outcomes after the initial telephone consultation were recorded as either 'discharged', 'deferred', 'urgent investigation offered' or 'urgent face-to-face appointment offered'. The majority of low-risk patients were given a deferred appointment or were discharged back to the referring physician after initial assessment via telephone. In contrast, most patients in the high-risk group were sent for urgent investigations or were called in for an urgent face-to-face appointment.

With regards to the final oncological outcome, 388 out of the 412 patients who were assessed during the study period were deemed to be free from head and neck cancer (94.2%). This included a follow-up period of 12 months after initial assessment. Twenty-four patients were found to have head and neck malignancy (5.8%). Of these, the majority were in the high-risk group. Almost one in four patients who were initially stratified to the high-risk group were diagnosed with head and neck malignancy (20/86 patients) (23.3%). In contrast, cancer was detected in only 5.1% of moderate-risk patients (4/78). None of the patients who were stratified into low-risk group were diagnosed with cancer (Fig. 2).

Discussion

The emergence of COVID-19 in early 2020 brought about significant changes in the conventional diagnosis and management of cancer. This was particularly highlighted in specialties such as otolaryngology, head and neck surgery and

Fig. 1 Patient groups according to risk stratification

n = 412

■ Low risk
■ Moderate risk
■ High risk
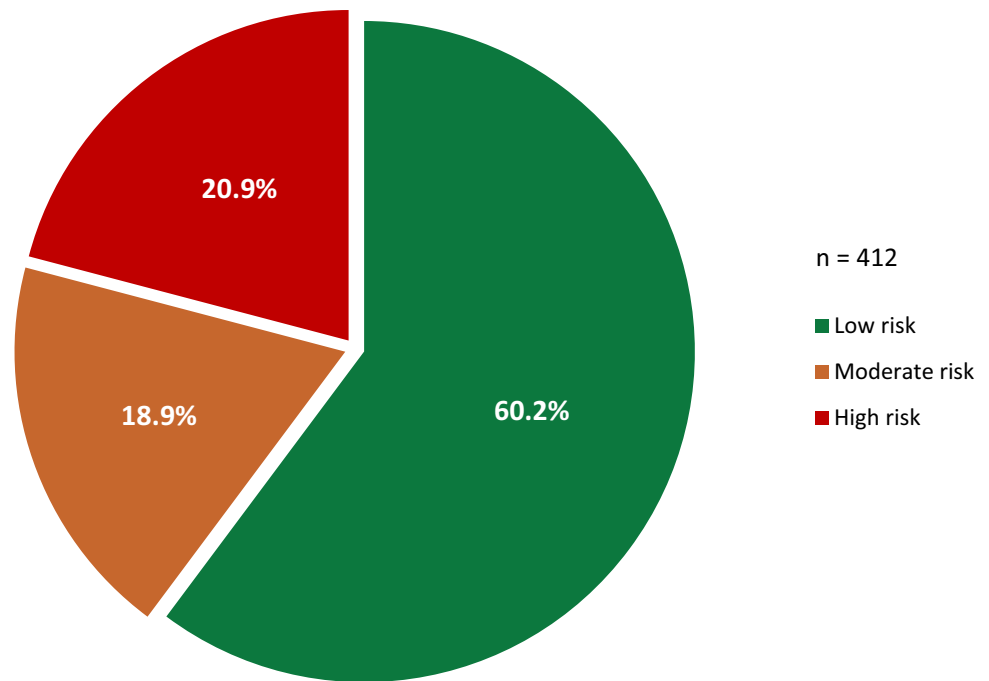
Fig. 2 Head and neck cancer detection rates
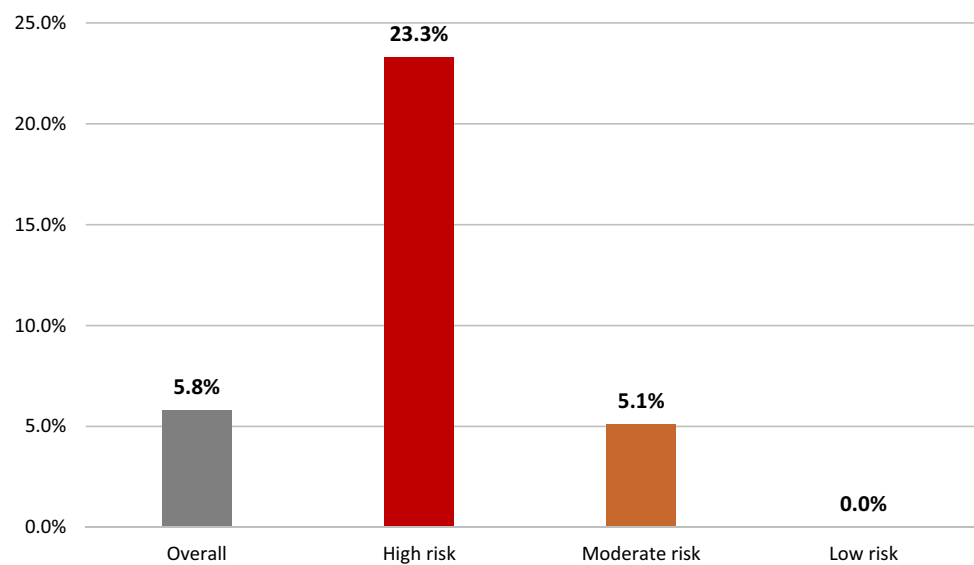
oral medicine, where aerosol-generating procedures were commonplace [9]. In ordinary times, physical examination, combined with flexible transnasal endoscopy of the upper aerodigestive tract, where indicated, were considered the mainstay of new patient assessment. However, to control the spread of infection and to protect patients and staff, there was a need for departments to adopt virtual clinics and protocols to minimise direct contact [10].

The 'Head and Neck Cancer Risk Calculator' (HaNC-RC v.2) was previously developed in the United Kingdom and was validated based on the clinical data from approximately 10,000 new patients with suspected head and neck cancer

[11]. Using a combination of significant symptoms, patient demographics and social history factors, without the need for physical examination, blood tests or radiology, it provides a robust and personalised probability of head and neck cancer, rendering it uniquely suitable for teleconsultation and remote triaging.

Telemedicine is not new to the field of otolaryngology. There have been successful precedents in each of the main subspecialties, including its use in remote assessment of new patients and follow-up of patients in the postoperative period [12]. As an alternative to the traditional office encounter, it refers to the live (synchronous), two-way,

interactive communication between a patient and a clinician to deliver care at a distance [13]. This is facilitated by the use of technology, such as telephones, videoconferencing, email, and text messaging to collect and transmit patient data [14]. However, with advances in modern technology, the ubiquity of cameras, better access to high-speed internet, and the adoption of electronic medical records, there is a greater potential for telemedicine to evolve from a primarily telephone-based platform to a virtual consultation room, where face-to-face contact may be reproduced [15].

Previous studies have demonstrated that virtual methods of consultation are valuable and can meaningfully progress patient care [16]. Furthermore, studies investigating patient experience with teleconsultation have shown a generally high degree of patient satisfaction [12, 16]. In our cohort, we found a positive patient engagement with this hitherto unconventional method of consultation. The overwhelming majority of our patients understood the reason for this approach and none of the patients we were able to contact declined their telephone appointments when offered.

When appropriately implemented, the use of remote triaging in the evaluation of suspected head and neck cancer referrals can be safe. A recently published multicentre study conducted in the United Kingdom, involving 41 centres and 4568 patients, found widespread adoption during the first wave of the pandemic and an overall low risk of harm to patients [17]. Analysis of our own data showed that no patients who were deemed to be 'free of cancer' after initial assessment were subsequently found to have head and neck cancer at 12-month follow-up.

The overall rate of cancer detected in our patient cohort was 5.8% (24 out of 412 patients). This is consistent with rates previously reported in the literature which range from 3.6% to 11.8% [18, 19]. The United Kingdom sees an average of 100,000 referrals to secondary care with suspected head and neck cancer per annum with a cancer detection rate, on average, of less than 10% [20]. As referral numbers are set to increase and detection rates continue to diminish, there is an important need to risk stratify patients. The use of teleconsultation presents a unique opportunity to triage patients remotely. It facilitates more targeted investigations for high-risk patients and prevents unnecessary hospital visits for those who are at lower risk, ensuring that healthcare resources are appropriately allocated [17].

We have calculated that, in our hospital trust, the cost of running a multidisciplinary face-to-face specialist clinic session is approximately £450. This includes expenses for personnel, including a receptionist, a healthcare assistant, a trained nurse and a specialist nurse. The cost for conducting a telephone clinic session is around £248. This could mean an average saving of approximately £200 per clinic session, or £25 per new patient referral. The financial implication associated with assessing 412 patients in the current study

remotely amounts to £10,300 in cost savings. Given that over the last 5 years our hospital trust has received an average of 2,000 referrals with suspected head and neck cancer per year, extrapolating this figure may indicate an annual direct cost saving of around £50,000 in our department alone.

We acknowledge the following limitations: the use of local follow-up data means that some patients who subsequently presented to other centres may have been missed. Patients who were not contactable, after at least one further attempt at telephone consultation, were excluded from the cohort, further reducing the sample size. Finally, we present data from a single centre during the first wave of the COVID-19 pandemic. The acceptability and patient satisfaction of this method of consultation for patients with suspected head and neck in the absence of a prevailing pandemic has yet to be determined.

Conclusion

The use of a remote triaging clinic, supported by a validated, symptom-based risk calculator, has the potential to provide a viable and cost-effective adjunct to managing new suspected head and neck cancer patients. It should be considered as part of the inherent re-shaping of clinical service delivery brought about by the changes seen as a result the COVID-19 pandemic.

Declarations

References

1. Zhou P, Yang XL, Wang XG et al (2020) A pneumonia outbreak associated with a new coronavirus of probable bat origin. Nature 579:270–273
2. Lillie PJ, Samson A, Li A et al (2020) Novel coronavirus disease (Covid-19): the first two patients in the UK with person to person transmission. J Infect 80:578–606

3. Cucinotta D, Vanelli M (2020) WHO declares COVID-19 a pandemic. Acta Biomed 91:157–160

4. UK Government. Prime Minister's statement on coronavirus (COVID-19): 23 March 2020. In: https://www.gov.uk/government/speeches/pm-address-to-the-nation-on-coronavirus-23-march-2020

5. NHS England and NHS Improvement. Cancer alliance information on managing cancer referrals. In: https://www.england.nhs.uk/coronavirus/wp-content/uploads/sites/52/2020/03/cancer-alliance-information-on-managing-cancer-referrals-19-march-2020.pdf

6. British Association of Head and Neck Oncologists. BAHNO statement on COVID-19. In: https://bahno.org.uk/bahno_statement_on_covid-19.aspx

7. ENT UK. Remote triaging or urgent suspected head and neck cancer referrals during Covid-19 pandemic. In: https://www.entuk.org/sites/default/files/files/ENTUK_2WW_Telephone_Triage_Letter.pdf

8. Symptom based risk calculator for head and neck cancer referrals v2 (HaNC-RC.2) (2019). In: http://www.orlhealth.com/risk-calculator-2.html

9. Mick P, Murphy R (2020) Aerosol-generating otolaryngology procedures and the need for enhanced PPE during the COVID-19 pandemic: a literature review. J Otolaryngol Head Neck Surg 49:29

10. Warner E, Scholfield DW, Adams A et al (2020) North East London coronavirus disease 2019 protocol for diagnostics in two-week wait head and neck cancer patients. J Laryngol Otol 134:680–683

11. Tikka T, Kavanagh K, Lowit A et al (2020) Head and neck cancer risk calculator (HaNC-RC)-v2. Adjustments and addition of symptoms and social history factors. Clin Otolaryngol 45:380–388

12. Singh AK, Kasle DA, Jiang R et al (2021) Review of telemedicine applications in otorhinolaryngology: considerations during the coronavirus disease of 2019 pandemic. Laryngoscope 131:744–759

13. Layfield E, Triantafillou V, Prasad A et al (2020) Telemedicine for head and neck ambulatory visits during COVID-19: evaluating usability and patient satisfaction. Head Neck 42:1681–1689

14. Kichloo A, Albosta M, Dettloff K et al (2020) Telemedicine, the current COVID-19 pandemic and the future: a narrative review and perspectives moving forward in the USA. Fam Med Community Health 8:e000530

15. Lurie N, Carr BG (2018) The role of telehealth in the medical response to disasters. JAMA Intern Med 178:745–746

16. Watters C, Miller B, Kelly M et al (2021) Virtual voice clinics in the COVID-19 era: have they been helpful? Eur Arch Otorhinolaryngol 278:4113–4118

17. Hardman JC, Tikka T, Paleri V et al (2021) Remote triage incorporating symptom-based risk stratification for suspected head and neck cancer referrals: a prospective population-based study. Cancer. https://doi.org/10.1002/cncr.33800

18. Langton S, Siau D, Bankhead C (2016) Two-week rule in head and neck cancer 2000–14: a systematic review. Br J Oral Maxillofac Surg 54:120–131

19. Douglas CM, Carswell V, Montgomery J (2019) Outcomes of urgent suspicion of head and neck cancer referrals in Glasgow. Ann R Coll Surg Engl 101:103–106

20. Paleri V, Hardman J, Tikka T et al (2020) Rapid implementation of an evidence-based remote triaging system for assessment of suspected referrals and patients with head and neck cancer on follow-up after treatment during the COVID-19 pandemic: model for international collaboration. Head Neck 42:1674–1680