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Early Detection of Oral Cancer in General Practice – 30 Years of Searching

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This year of 2020, has, without doubt, been momentous. Readers will all have reasons for remembering this year. My hope was that my cohort of graduates from the class of 1990 would have a fantastic 30-year reunion with all of the usual excesses of meeting up with old friends and reminiscing until the early hours. Qualifying as a dentist back then meant that our Oral Medicine tutors would tell us that there were about 3000 new cases of oral cancer, now more appropriately termed mouth cancer (MC) on the advice of Professor Mike Lewis in the present issue, every year and that, if we turned out to be good, observant dental practitioners, then we would probably spot one squamous cell carcinoma (SCC) in our practising career (Figure 1).

Table 1 shows the rise in numbers of MC since the 1980s. At first sight, there would appear to be an exponential rise in cases; but the devil is in the detail. Back in the 1980s, it was classified as 'mouth cancer'. The first big jump in figures coincides with a name change to 'oral cancer', which began to include the oro-pharynx. Nowadays, it has been incorporated into 'head and neck cancer', which also includes the sinuses, salivary glands, nasopharynx, larynx, etc. This may be considered confusing when you want to compare like with like.

Owing to the possible confusion, I have broken down the total head and neck cancer figures and shown just the mouth cancer figures in the bottom row. Therefore, there were 5939 new cases of mouth and tonsil cancer in the UK in 2017.

Figures from Cancer Research UK (CRUK)[1] advise that the incidence of head and neck cancer has increased by 33% since the early 1990s. Clearly, the spotting of one SCC in each dentist's practising career needs to be revised upwards, probably by a factor of three.

How can we help?

As general practitioners, how can we help? In 2012, the General Dental Council (GDC) made 'early detection of oral cancer' a recommended topic in dentists' CPD syllabus. That would seem to be a logical step. Let's remember that, if we miss taking a bitewing radiograph by a year, then the patient might get caries and need a restoration. If we miss a squamous cell carcinoma by a year, then the patient may die.

I have therefore established that we need to be observant. Regular soft tissue examinations of the oral cavity, alongside observation and palpation of the head and neck, will give clinicians the best chance of spotting a head and neck cancer, including skin cancer. Figure 2 shows one of my patients in general practice. He was intrigued over the fact that dentists were checking behind their patients' ears.

He was eventually delighted that I found this cutaneous SCC behind his left ear and it confirmed in my mind that the checks I was doing were worthwhile.

Early detection saves lives

The title of this article includes the phrase 'early detection'. It is a matter of general knowledge that noticing any cancer early greatly increases the chances of the patient surviving 5 years and more. Table 2 supports this claim for mouth cancer.

In this regard, readers should be aware of the following statement:

'The most important prognostic factor is tumour size on presentation'

Put simply, the smaller the cancer is when it is found, the longer the patient will survive. It is, therefore, vitally important that we spot these cancers early. Over the last 30 years this has not changed.

To emphasize the point, I will mention two SCCs that occur about 2 cm away from each other and yet their outcomes are vastly different.

The first is shown in Figure 3, which shows a cutaneous SCC of a male patient's lip. From the picture you can probably tell that he has had a mostly outdoor working life. There are signs of

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Figure 1. SCC of the right tongue. The type of oral cancer that we would have expected to see in the 1980s. (Courtesy of Insight magazine).

Figure 2. Cutaneous SCC posterior aspect of the left pinna. Image taken in dental practice.

Figure 3. Cutaneous SCC of the lower lip. (Courtesy of Insight magazine).

Figure 4. Right sublingual oral SCC. (Courtesy of Insight magazine).

Year	New cases	Classification
1984	3030	Mouth cancer
2013	7591	Oral and perioral cancer
2017	12312	Head and neck cancer
2017	5939	Mouth cancer

Table 1. Incidence of mouth cancer/oral cancer with time.

Stage	TNM	Approx % survival at 5 years
I	T1N0M0	85
II	T2N0M0	65
III	T3N0M0 T1, T2 OR T3N1M0	40
IV	Any T4, N2, N3 OR M1	10

Table 2. A graphic illustration of how prognosis falls as the size of the tumour increases.

generalized sun damage around the mouth. Back in my day the example was of an 'Australian sheep farmer'. The example was chosen more as an aide-memoire, I think. People who work outside in sunny places are more likely to get skin cancer. The lower lip is at far higher risk as the sun beats down on it from above.

The point I want to make with this particular patient is that he will probably go and get this examined early. A non-healing ulcer on the lower lip is very obvious. A visit to the GP or to the dentist would lead to an early referral followed by excision and relatively simple reconstruction. In males, the 5-year survival rate of stage 1 lower lip SCC is as high as 95%.

Now take a look at Figure 4. This shows an oral SCC on the ventral surface of the tongue and the right floor of mouth, of a female patient this time. The patient will have had a non-healing ulcer that was probably not painful for many months. It will have only been obvious to her, and no one else will have been able to see it. She will probably have put off going to a healthcare professional for any number of reasons; indifference, the thought that it will just go away, economic pressures, time pressures, who knows? Whatever the reason, this is now a stage 4 oral SCC with a 10% survival rate at 5 years. This patient can expect to survive those 5 years only if she goes through huge resection and reconstruction surgery with post-operative radiotherapy.

The stark difference in outcome for these two patients is multi-factorial: however, the size of the lesion on first presentation is by far the most important.

Highlighting high-risk patients

We are busy people. There are limited resources within NHS and private practices alike. Performing full head and neck examinations on 12-year olds is not necessary and will be a waste of our valuable time. On a 70-year-old chap who has smoked all of his adult life, such an examination is going to be a more efficient use of our time.

Personally, I perform full intra-oral soft tissue examinations, as well as neck palpation of lymph nodes, on all of my patients over the age of 18 in general practice. The youngest patient I have come across with oral SCC was 27 years of age, and he had no risk factors and was HPV-16 negative. Risk factors for head and neck cancer will be well known to all of us. The headliners are still smoking and drinking alcohol, particularly when those two are in combination.

Chewing the derivatives of the areca nut, betel quid chewing, is not a Western past-time, but in South and South-east Asia it is prevalent, and our patients who have ancestry in these areas may carry on the tradition. This would also put them in a higher-risk category.

The final risk factor I am going to mention is the human papilloma virus, particularly type 16 and, to a lesser extent, type 18. It may be considered that the increase in MC has partly been driven by the rise in HPV-related tumours. These cancers tend to happen further back in the mouth, classically on the tonsil (Figure 5) or posterior third of the tongue.

The most likely place where we will now see an SCC in a male patient in our practices is on his tonsil. He may be younger than we expect and have none of the other traditional risk factors of smoking and drinking. Interestingly, the most likely site for a female patient is still the tongue. This would therefore still be more likely to be associated with smoking and drinking.

Figure 6 shows an HPV-16-positive SCC on the tonsil of a 34-year-old male with no other risk factors. He had the foresight to take a 'selfie' of it at various stages, which showed the rapid progression of its growth.

The subject of HPV has certainly been a hot topic in recent years. The case of Michael Douglas has greatly raised awareness. It is an orally and sexually transmitted virus that the vast majority of the population will have contracted at some time in their lives. Fortunately, 90% of us will have raised an effective immune response to the virus and it will never bother us again. It is the same virus that causes cervical cancer, hence the vaccination of girls as a preventive measure. Thanks to the lobbying of the politicians by our professional bodies, boys are now also being vaccinated.

It would therefore seem that we need to ask our patients about their addictive habits in order to highlight our high-risk patients. I remember being embarrassed to ask my patients such questions when I was younger. I felt I might be prying unnecessarily into their private lives. Be reassured, we are not being nosey, we are asking relevant clinical questions. An adjunct to our questioning would be to ask about their addictive habit behaviour on a medical history questionnaire prior to them coming into the surgery.

The head and neck examination

As with all of our examinations, teeth, BPE, etc, performing them in a logical, repeatable sequence is key to ensuring that we don't miss anything. I start extra-orally, before I even lie the patient flat to examine his/her mouth. Palpation of the lymph nodes in turn is important. A significant number of head and neck tumours occur in places we will never get to see. For instance, in males the most likely place to get any cancer in the whole of the head and neck is in the larynx. A massive 26% of tumours are found here in males. The first visible or palpable sign of this may be a change in the patient's voice or a persistent lymphadenopathy in the neck (Figure 7).

For the intra-oral soft tissue examination, I start at the front and work backwards. So, in turn, lips, gingivae, buccal mucosae, dorsum, lateral margins and ventral tongue with the floor of the mouth. Then hard and soft palate and depress the tongue to view the oropharynx.

Performing this soft tissue examination with a good light source is still the gold standard MC check.

What if I find something?

Rapid referral to your local Maxillofacial or Oral Medicine unit is vital. The clock has been ticking on your patient's cancer for months if you have been able to see it or palpate it. You will know your local arrangements for rapid referral, but it is worth referring through a number of media: letters, emails, phone calls would all work. Cancer grows quickly. Every 8 days that pass, the cancer will potentially double the number of cells involved.

Without doubt, there will be a number of lesions, which are referred that turn out to have benign pathology. Genuine over-referral is not a problem. In the hospital where I work, between 2% and 3% of the 2-week wait referrals turn out to be cancer. Will the COVID-19 pandemic make a difference? I have no proof, but my instinct tells me that we will be seeing later referrals and therefore expecting a poorer prognosis for our patients in the months to come.

My hope is that this article has merely been revision for all readers. This knowledge is imparted to us during our undergraduate courses and, with some timely CPD, we can keep on top of our skills and knowledge. I may be biased, but this is the most important part of being in general practice. We could actually play a part in saving a patient's life.

Figure 5. HPV-16-positive SCC of the right tonsil. (Courtesy of Professor MAO Lewis).

Figure 6. HPV-16-positive SCC of the right tonsil.

Figure 7. A persistent neck swelling of 3 weeks or more with no obvious cause warrants a rapid referral. (Courtesy of Insight magazine).

Compliance with Ethical Standards

Conflict of Interest: The authors declare that they have no conflict of interest.

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Reference

1. Cancer Research UK. Head and neck cancers incidence statistics. **www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer-type/head-and-neck-cancers** (accessed October 2020).