

Audit on the Effectiveness of Oral Cancer Screening in Primary Care

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Abstract

Introduction: Oral cancer is increasingly common. The need for early detection and promoting prevention is greater than ever. The main focus of this audit is to evaluate the completeness and quality of oral cancer screening checks within the practice. This was achieved by setting a standard using internal and external resources.

Method: 90 clinical records were audited spanning three dentists over 3 months. These were chosen at random and were compared to the standard set to check if was being met.

Action plan: A list of recommendations was drawn up for future improvements to ensure targets were being met. The results of the audit were discussed with all team members involved in patient note handling. A re-audit was carried out after 3 months to assess improvements which showed standards were being met.

Conclusion: The standard was not being met.

Introduction

Oral cancer is an all-encompassing term and can be seen as a group of cancers, these include; cancer of the lip, tongue, mouth, oropharynx, piriform sinus, hypopharynx and other ill- defined sites of the lip, oral cavity and pharynx. All of the above sites are routinely examined in primary care dentistry and ideally abnormalities detected should be fast tracked to the appropriate secondary care provider. This however is not always the case and we still find incidences and cases of oral cancer being missed or unidentified. Why is this so? Is oral cancer not being effectively examined for in primary care dentistry?

With the increasing rise in incidences of oral cancer over the past decade it is become ever more apparent that there is a severe need for regular screening. Oral Cancer kills roughly 1 person per hour in the US and approximately one fifth of cases in the UK occur in people aged 75 and over [1].

In 2012, in Europe, around 61,400 new cases of lip and oral cavity cancer were estimated to have been diagnosed. Worldwide, it was estimated that more than 300,000 new cases of lip and oral cavity cancer were diagnosed.

Ultimately an early diagnosis is key and on average can generally ensure a 5-year survival. It is with this belief that the need for routine screening is felt paramount and that this audit has surfaced.

Aim and Objective

The aim of this audit is to carry out a retrospective study to evaluate the completeness and quality of oral cancer screening checks within the practice.

All dentists in the practice were audited and this was carried out over a period of 3 months. Results obtained were compared to an internal standard.

Standard

Currently there is no official set standard for the routine screening of oral cancer. An internal observational standard has been formulated using various external resources, one being a protocol from the Mouth Cancer Screening Accreditation Scheme (MCSAS) [2]. This accredited protocol for soft tissue examination was combined with the current internal practice standard to form a more comprehensive guide. The complete standard is as follows:

Extra - Oral Examination

1. Observe the face and neck looking for swellings, skin abnormalities, moles and asymmetry.
2. Look for any changes in the colour or texture of the vermilion border of the lips and mouth.
3. Palpate the lymph nodes in the neck feeling for any enlargement or abnormality.

Intra - Oral Examination

1. With the mouth half open, examine the labial mucosa and sulcus.
2. Then observe the maxillary and mandibular sulci on both sides.
3. Then, retract the cheek and examine the buccal mucosa on that side. Look for changes in colour and texture. Repeat for other side also.
4. Then, examine the tongue at rest and protruded for changes in colour, texture, symmetry. Mobility and distribution of papillae.
5. Holding the tip of the tongue and alternately retracting the cheeks, inspect and palpate the lateral borders of the tongue.

6. Lift the tongue and inspect and palpate the ventral surface and the floor of the mouth.
7. Depress the tongue and examine the soft and hard palates. Ask the patient to say “Ah” and inspect the oropharynx, uvula and pillars of the fauces.

A sample of 90 patient records was looked at and this spanned 3 dentists of varying experience. Not to compare between dentists but to collect a broader range of results that are more representative of the practice. Records were chosen at random. 10 records per dentist per month were used. Results were analyzed after information was obtained by the pro forma where a simple yes or no was given for each.

History

1. Was the smoking history checked?
2. Was the alcohol history checked?

The sample size was maintained for each of the cycles that the audit was carried out.

A 100% standard to achieve the above points has been set.

Cycle 1 was to gain baseline information and decide recommendations. Cycle 2 was to see if improvements had been made since the recommendations.

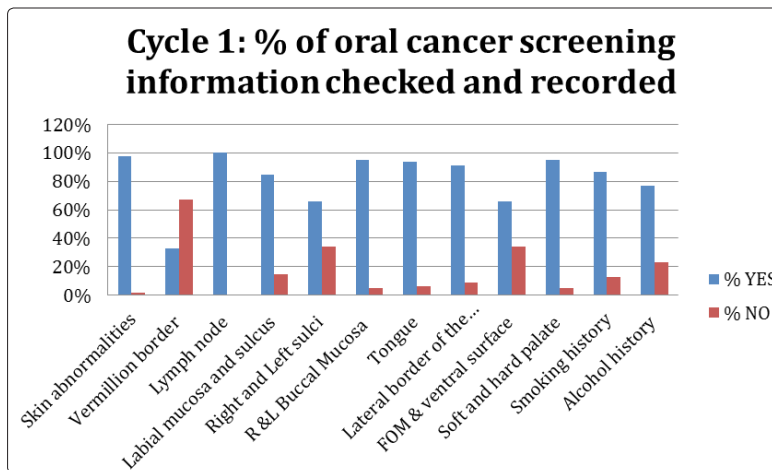
Methodology

A checklist pro forma was drawn up and the relevant data was obtained in accordance to the above guidelines.

Results

Cycle 1

% RESULTS												
	1.1 Skin abnormalities checked	1.2 Vermillion border checked	1.3 Lymph nodes Checked	2.1 Labial mucosa and sulcus	2.2 Right and Left sulci	2.3 R &L Buccal Mucosa checked	2.4 Tongue checked	2.5 Lateral border of the tongue	2.6 FOM & ventral surface checked	2.7 Soft and hard palate checked	3.1 Smoking history checked	3.2 Alcohol history checked
% YES	98%	33%	100%	85%	66%	95%	94%	91%	66%	95%	87%	77%
% NO	2%	67%	0%	15%	34%	5%	6%	9%	34%	5%	13%	23%



Cycle 1: Analysis/ Discussion of Results

The graph above shows the 12 sub-domains recorded for oral cancer screening.

Extraorally, a large difference in results was seen where 100% of lymph nodes were palpated and documented, compared to the vermilion border which was examined for only 33% of patients. This difference could be down to dentists being aware of the importance of checking for lymph nodes due to the nature of metastatic spread of cancer and infection. With the levels of oral cancer rising, a large proportion of oral cancers are related to sun damage which makes checking the vermilion border and skin ever so more important. A low result for the vermilion border does not necessarily mean it is not being checked, as a dentist generally appraises a patient's well-being on entering the surgery. This highlights that the dentist may be carrying the screening out but is not documenting it properly.

Also, it was found 98% of patients the dentist checked for facial abnormalities; one may argue and classify checking the vermilion border falling within the same category which explains the high result attained.

On intraoral examination, there were 7 different checks that needed to be performed and a range of 66-95% was found. For 85% of patients the labial sulcus and mucosa was recorded, this finding was unforeseen. Examination of soft tissues should follow a logical sequence to ensure completeness; it is good practice to start from the front and move back to difficult areas where a mirror is needed [3]. This is a personal choice but it could be the reason why for 15% cases this check was neglected.

The accredited Mouth Cancer Foundation standard states the maxillary, mandibular sulci and mucosa should be checked on both sides. Pre malignant lesions such as leukoplakia are often found in these areas so the virtual importance for them to be checked is high [1]. Dentists are aware that these well demarcated precancerous lesions are at increased risk of malignant change. Therefore visual inspection as part of routine examination is requisite to aid diagnosis, as it may be lifesaving [3]. Data obtained shows 95% the buccal mucosa was checked compared to the sulci only being recorded in 66% of patients. This area could have been overlooked due to poor visibility or it could be argued it being checked but not documented [1].

The tongue and floor of the mouth are considered high risk areas for oral cancer. It was found that for 91-94% of patients the tongue and its lateral borders were assessed. However, 34% of records failed to illustrate screening of the floor of the mouth and the ventral surface of the tongue. The low result attained raises concerns as dentists are fully aware of the importance of looking out for changes and abnormality in such areas. They have an important role towards secondary care as early cancer detection increases the chances of recovery and improves the quality of life. In total 66%, so in 30 patients the floor of the mouth and tongue ventral surface was not checked. This poses many concerns as research by Copper et al shows half of the cancers would have undergone metastasis by the time of detection which would decrease the 5 year survival rate by 50% further [4]. Clearly the results show the clinicians are aware of the importance of checking the tongue so either the dentist has failed to undertake the screening or it has not been documented properly.

The hard and soft palate was checked for 95% of patients. This result could be due to the clinicians documenting it very well as it is an easy area to remember.

Smoking and alcohol are risk factors which consumed together have a synergistic effect and increase the risk of oral cancer by 30 times [5]. The results collected showed 87% of patients were asked whether or not they smoked and 77% where asked whether or not they consumed alcohol. Smoking and alcohol histories are part of medical history forms and should form part of routine dental examinations in screening for oral cancer. Within the practice there is a procedure where medical history forms are updated every visit. Due to the different means this information could be collected it was anticipated the results would be high; however the lower than expected results obtained could again be ruled down to poor record keeping.

Oral cancer screening should form an integral part of routine examinations. Close analysis of the audit results identified there were three cases where no screening took place besides a lymph node exam. The assumption can be made that these cases were urgent appointments as lymph nodes were palpated. This is common when assessing emergency pain patient's for example dental abscesses. With oral cancer being on the rise, the question now arises whether oral cancer screening should be included and checked for regardless of whatever reason the patient is seen. This will further increase the chances of earlier diagnosis and improve the chances of cure.

From the data one can conclude dentist 3 inadequately carrying out oral cancer checks. Dentist 3 was omitting high risks areas for example the floor of the mouth and vermilion border, where statistically the highest rates of oral cancer are found. Failure to document adequately could be the reason why lower results have been reported. From a medico-legal point the lack of information recorded within the notes states that it has not been undertaken.

Conclusion

In conclusion this audit shows that standards prescribed were not met. It can be seen that there were varying approaches to oral cancer checks even within a small practice as illustrated by the results above. The differences seen can be due to an array of reasons such as education, awareness and the level of experience. It is the author's opinion that a variable approach to OC screening in terms of time taken to carry it out, the difference in examination sequelae and documentation creates inaccuracies within the audit. This however cannot be avoided as there is no set standard for oral cancer screening.

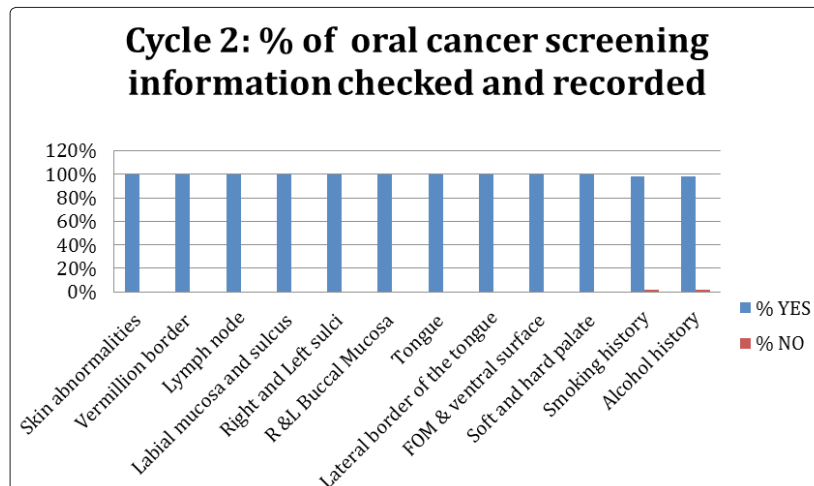
Being a retrospective study in order to assess the completeness and quality of OC screens good record keeping was essential. In this audit it was assumed each practitioner had written clear, full, contemporaneous notes. If this was not assumed then the audit will be flawed as it will introduce many imprecisions; skewing the collected data. Even though at the time of the audit there was a set BDA pre-formed exam template used by each dentist, collection of data was still limited as each dentist recorded information differently.

On analyzing the results it is apparent there were flaws with regards to the quality of oral cancer screening. The internal standard set by the Mouth Cancer Accreditation Scheme aimed to achieve 100%. This audit has highlighted that this was not the case and that improvements need to be instilled for targets to be reached.

Recommendations and Action Plan

- The pre-formed templates will be edited to formulate an agreed procedure for carrying out OC screening in a systematic way which follows the internal and external standard. The dentists will be asked to record both negative and positive findings. This will improve the consistency and quality of record keeping ensuring checks have been undertaken and will enable dentists to understand each other's notes.
- Nurses will be trained to run through the set performa outlining the areas that need to be checked to the dentist and will fill the template out. This collective effort will ensure the standard is met.
- All dentists will be instructed to spend at least 2 minutes to carry out a full comprehensive OC screen on all patients.
- The results of this audit along with the standards used will be discussed to all staff making them aware of the changes needed.
- All staff including reception staff will be trained to ensure all new patients complete medical history sheets fully including the lifestyle questions.
- Dentists will be asked to update MH forms at each visit and ask follow up questions to address smoking and alcohol histories. The nurses will be encouraged to ask information on tobacco and alcohol if this is not volunteered by the dentist.
- Due to constraint's in time and need for education in primary care setting a range of CPD opportunities will be made available to all staff to help keep up to date.
- Posters and written information leaflets will be made available in waiting rooms to raise patient awareness. In addition dentists will be encouraged to inform patients when an OC screen check is being performed to further raise awareness. This is not a legal requirement but will enhance patient satisfaction.
- A re-audit should be conducted in the 3 months to see if improvements and recommendations have been implemented.

% RESULTS												
	Skin abnormalities checked	Vermillion border checked	Lymph nodes Checked	Labial mucosa and sulcus	Right and Left sulci	R&L Buccal Mucosa checked	Tongue checked	Lateral border of the tongue	FOM & ventral surface checked	Soft and hard palate checked	Smoking history checked	Alcohol history checked
% YES	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	98%	98%
% NO	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	2%



The second cycle of data collection showed 100% standards were met for oral cancer in terms of soft tissue examination. There is a significant improvement in the overall amount of information recorded by all dentists. All necessary areas were completed by the dentists which demonstrates the implemented system working and has improved the quality of the OC screening remarkably. Clinical records are now much easier to follow and from a medico legal point of view, the patient records are more defensible than after the first cycle. With the nurse being involved the examinations have become systematic, and it has freed up time for the dentist to deliver appropriate cessation to raise OC awareness.

Smoking and alcohol histories were however recorded for only 98%. This small difference in results could be due to some patients not wanting to disclose such information. It is however the responsibility of the clinician to recognize these social behaviors and further modify them. Dentists should work in partnership with these patients and if they still insist not to disclose information then clear documentation in the clinical records is still necessary.

Discussion

With the rising prevalence of oral cancer, the dental team can expect to encounter such cases more frequently in the future. This is being addressed within the current pilots for a New Dental Contract in England, which will include an assessment of risk and a systematic soft tissue examination. The algorithm devised will recommend the appropriate action that will need to be taken in line with the evidence base for prevention.

Although as clinicians we may only pick up a few cases of OC in our working life, delayed OC diagnosis can result in GDC fitness to practice hearings [6]. The importance of early detection and promoting prevention cannot be addressed enough. With GDPs being the gate keepers and referring 50% of cases, it makes one think why oral cancer detection is not already part of core CPD?

The Mouth cancer screening accreditation scheme recognizes the importance of increasing public awareness of oral cancer and detection, and accredits practices that carry out thorough screening. The scheme includes professional development and training programmes for all team members to ensure screening benefits patients and increases confidence of the GDP in picking up cancerous lesions. So should more practices be taking part? Should the government or GDC be taking decisive action to address the seriousness of the issue by encouraging practices to become accredited, rather than focusing on issues such as reforms?

Further improvements could be introduced to enhance the quality of OC screening. So along with a thorough visual and digital examination an additional protocol could be to use toloum chloride oral rinse adjunctively when examining high risk patients in high risk areas [5]. This would enable suspicious areas undergoing dysplastic change to be assessed quickly, in more detail and evaluate if the patients situation warrants a rapid referral.

High risk patients could be identified by marking a 'mucosal sticker' alert message on the medical history forms to flag up patients so that appropriate cessation advice can be targeted [1].

Digital photographic records could also be implemented to improve the quality of record keeping and could be used to supplement referrals and further monitor lesions.

This audit with the agreed internal standard will form part of the practices clinical governance system. So after every 6 months the quality and completeness of oral cancer screening can be reassessed to detect if improvements in patient care are needed. A power calculation can be worked out to calculate the sample size needed to carry out an adequate audit where comparisons can be made between results using statistical tests [7,8].

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