



60 Seconds to
Save a Life



Oral Cancer
Awareness Point

The role of dental professionals in early detection of head and neck cancer.

With this paper, we present the extracts from two articles published by Nichola Jayne Tong* on the role of dental office professionals in visualizing oral cancer and in the use of the fluorescence technique for this purpose.

This brief reading reveals how decisive the dentist's action can be in changing the life's course of patients or saving a life.



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Have you ever diagnosed a mouth, head or neck cancer? Any professional could be responsible for identifying a head or neck cancer and play a role in getting early treatment for a patient and even helping to save their life.

Last November, the Swallows / Your Cancer Journey International Head and Neck Cancer Conference was held in Nottingham. The conference is organised by the founder and

chairman of the Swallows Charity, Chris Curtis, a pharyngeal cancer survivor: he was diagnosed in 2011 with throat cancer, which had gone undetected by his dentist during regular routine dental checks.

Nichola Jayne Tong carried out intra and extra oral screening to raise awareness of the need for early detection. Profoundly moving were the stories of the patients who were attending this conference. It's important to shout out about the vital part dental professionals play in preventing and detecting head and neck, mouth and pharyngeal cancer. Many of you who are reading this have first-hand experience of a friend, colleague, loved one or patient who is living with the devastating after effects of a mouth, pharyngeal or head and neck cancer.

Head and neck cancers are differentiated into sub groups depending on location: mouth cancers affect the lips, salivary glands, tongue, gums, palate and inside of the cheeks, while tumours at the root of the tongue, soft palate, tonsils and the upper part of the pharynx are defined as pharyngeal cancer. Cancers affecting the nasal cavity and paranasal air sinuses are also included in the head and neck cancer category.

Early detection of head and neck cancer can significantly increase the survival rate by over three years. As with any serious diagnosis, living with the after effects of head and neck cancer therapy is traumatic and life changing. This is for the 'lucky' ones who survive beyond one year, but life for them will never be the same. Many of the things that are taken for granted like speech, enjoying a nice meal are forever denied to some of the people who do survive. Not to mention issues with depression, anxiety, and self-esteem.

The increase in the incidence of oral cancer is attributable in the large part to HPV transmission. Alcohol and tobacco are also

causative factors but 25% of mouth cancers have no known causative factors. It's also known that by the time a mouth cancer is visible or detectable it is already in its advanced stages. This makes it very difficult to treat and significantly lowers the five year survival statistics.

Early detection is difficult for various reasons and because these cancers can spread quickly, only 29% are diagnosed early. Therefore, most are not being diagnosed until stage iii (tumour is <3cm and present in one node/ or >4cm but has not metastasised) or stage iv (determined by tumour size in cm and pattern of invasion into surrounding nodes and tissues).

WHAT SHOULD YOU BE DOING?

Some basic knowledge, simple equipment (part of which is present in nearly every dental office) and 60 seconds is all it takes.

A best practice 3 step approach could be:

1. Extra oral examination including sub mandibular and submental lymph nodes, the cervical chain and thyroid area
2. Intra oral examination
3. Auto fluorescence adjunctive screening technology.

There are over 30 different areas of the head and neck where cancer can develop so signs and symptoms vary. Some of the most common include:

- Hoarseness persisting for more than six weeks
- Ulceration of the mouth persisting for more than three weeks
- Oral swellings

EARLY DETECTION TECHNOLOGY

Tissue auto fluorescence can help to spot potentially pathologically altered tissues and is another weapon in the armoury to fight against mouth cancer. It's an adjunctive tool specifically for the purpose of early detection used alongside the traditional intra oral and extra oral examinations.

Many professionals have been using adjunctive tissue auto fluorescence technology for years to help show potentially pathologically altered tissues. It's a device for a toolbox for early detection. Auto fluorescence first came into medicine in the 1920's for cervical cancer screening. The concept has good research to show that it can detect early, moderate and advanced dysplastic cells, carcinoma in situ and squamous cell carcinomas. If a malignancy is clear to see, tissue auto fluorescence can help determine the borders for biopsy and excision procedures.

Fig. 1



Fluorescence technique in Oral Cancer screening using GOCLES and a common UV curing light (fig.1)

The two full text articles are available at the following links:

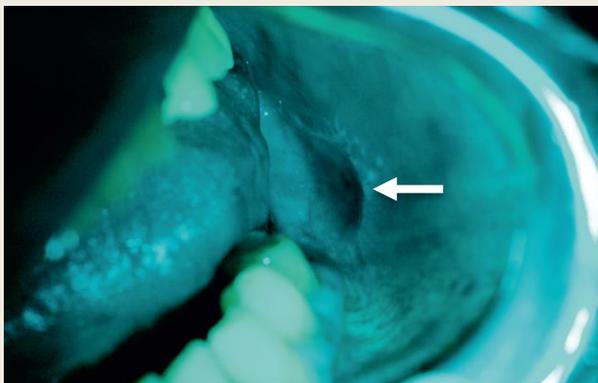
<https://www.nature.com/articles/s41407-019-0069-7>

<http://orabloc.com/software/documentiLiberi/1559121242.pdf>

Fig. 2



Fig. 3



A picture of Erythroleukoplakia case at the naked eye inspection (fig.2) and evidenced with the fluorescence technique (Goccles device, fig.3)

Experience with GOCLES can be seen in practice in this short video:

<https://youtu.be/WOVofrwQe0s>

The GOCLES BOX by Pierrel



To know more about GOCLES

www.goccles.com

Further Oral Cancer general information

www.oralcancerfoundation.org
www.mouthcancerfoundation.com

AUTHOR INFORMATION

* **Nichola Jayne Tong R.D.H. BSc(Hons) Dip D.H.** qualified as a dental hygienist in 1991 with the Royal Army Dental Corps and gained the BSc (Hons) degree in Health Sciences, has worked in specialist implant/cosmetic referral practices and for Oral–B Professional Health Team UK & Ireland as a Territory Manager. Nichola has had work published in peer reviewed dental journals and has run professional development courses for dental professionals.

Currently, Nichola presents to dentists and hygienist/therapists on topics such as the evidence which informs bisphosphonate therapy and dental implants, also advocates early detection of mouth cancer with autofluorescence technology. Nichola is a clinical consultant with Dental Sky for GOCCLLES, a low cost and modern autofluorescence screening device.



Nichola Jayne Tong <https://njthealth.co.uk/>

REFERENCES

- Cancer Research. Head and neck cancer statistics. Available at <https://www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer-type/head-and-neck-cancers> (accessed April 2019).
- Gerstner A. Early detection in head and neck cancer - current state and future perspective. *GMS Curr Top Otorhinolaryngol Head Neck Surg* 2008; **7**: Doc6.
- Nagi R, Reddy-Kantharaj Y B, Rakesh N, Janardhan-Reddy S, Sahu S. Efficacy of light based systems for early detection of oral cancer and oral potentially malignant disorders: Systematic review. *Med Oral Patol Oral Cir Bucal* 2016; **21**: 447-455.
- Moro A, De Waure C, Di Nardo F *et al.* The GOCCLLES medical device is effective in detecting oral cancer and dysplasia in dental clinical setting. Results from a multicentre clinical trial. *Acta Otorhinolaryngol Ital* 2015; **35**: 449-454.
- Huang T T, Huang J S, Wang Y Y *et al.* Novel quantitative analysis of autofluorescence images for oral cancer screening. *Oral Oncol* 2017; **68**: 20-26.