Oral Cancer – what you need to know and how you can help

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Who am I?

- Consultant since 2003
- Lead Clinician for Head & Neck Oncology (Pennine Acute Hospitals Trust, Manchester)
- Clinical Lecturer University of Manchester
- Member Greater Manchester & Cheshire Cancer Network Head & Neck Site Specific Group
- Regional Advisor Faculty of Dental Surgery Royal College Surgeons of England
- Council Member British Association of Oral & Maxillofacial Surgeons
- Faculty of Examiners Royal College of Surgeons of Edinburgh
Aims/Outcomes

- Outline the incidence, aetiology, diagnosis and management of oral cancer
- Indicate how oral cancer could be classed as a social disease
- Ensure the dental team know what to look for and when to refer, and understand their role in the continuing care of patients with oral cancer
- Help to promote an understanding and improvement in general health promotion in primary dental care
- Demonstrate reconstructive techniques and methods of dental rehabilitation
- Dental nurse roles in oral cancer
Prognosis of Oral Cancer

- Stage of disease at time of diagnosis & treatment is single most important factor affecting prognosis

- Significant number of patients still present at advanced stage at diagnosis
Oral Cancer

- 15\textsuperscript{th} most common cancer in UK
- 2\% of all cancers in UK
Mouth, lip and oral cavity

Registrations
- 5410 (2007); 6539 (2010)
  - 4097 (66%) men
  - 2139 (34%) women

Deaths 1851 (2007); 1985 (2010)
Oral Cancer (England)


Direct standardised rate per 100,000 population

Year
Survival

1996 – 1999

- 47% men and 55% women survive oral (cavity) cancer for 5 years or more
High risk sites

- 70% occur in sump area
- Only 30% surface area of mouth
  - Floor of mouth
  - Ventral & lateral tongue
  - Mandibular alveolus

Different sites in Indian sub-continent
- Buccal mucosa common
Increase in younger age groups

Figure 1.6: Percentage change in incidence rates for oral cancer in British men, 1975-2006
Oral Cancer - Sex, drugs and rock & roll?

- Is this a disease of lifestyle?

- Can it be avoided?
Risk factors

- Main causes of oral cancer have long been known
- Many cases of disease could be prevented
  - Often regarded as a life-style disease
- Smoking & alcohol - ~ 75% cases (Europe)
- Nutrition – diet deficient in fruit & vegetables - ~ 10% cases (Europe)
Main predisposing factor
Either smoking or chewing
Current smokers have 3-fold increased risk of oral cancer
Dose & duration dependent
Takes greater than 20 years for risk to reduce to that of non smokers
Betel quid (pan)

- Worldwide 200-400 million practice habit
- Composed of
  - Leaf of vine, Piper betel, areca nut, slaked lime & spices
- Areca nut carcinogenic to humans
- Risk increases with addition of tobacco
- Among Asian communities in UK, Bangladeshis most likely to retain habit of betel quid chewing
Alcohol

- Major risk factor
- Risk increases related to intake of alcohol
- Heavy drinkers & smokers have 38 – 56x risk of abstainers
Alcohol

- UK consumption doubled since 1950’s

- Exceeding safe limit
  - 1988 – 10% women; 26% men
  - 2002 – 18% women; 30% men

- Heaviest in 16 – 24 years; likely to binge drink
Ultraviolet light

- Affects lip
- 3x more common in men
- May be effect of occupation, sun-exposure & smoking
Human Papilloma Virus

- HPV-16 & HPV-18 (also HPV-31 & -45)
- Association strongest for oropharynx
HPV

Risk factors:
- Often don’t have known risk factors eg. Smoking, alcohol consumption or tobacco chewing

Association between HPV related cancers:
- increased number of sexual partners
- increased oral sexual behaviour
Potentially malignant lesions

- **Leukoplakia**
  - Up to 10% transformation over 10 years
  - May resolve on withdrawal of risk factors

- **Erythroplakia**
  - Up to 70% premalignant or malignant

- **Lichen planus**
  - 1% transformation

- **Oral submucous fibrosis**
Potentially malignant lesions

- Lichen planus
- Candidal leukoplakia
What to look for & when to refer

- Ulceration of oral mucosa > 3 weeks
- Oral swelling > 3 weeks
- Red / white patch of oral mucosa
- Hoarseness > 6 weeks
- Dysphagia > 3 weeks
- Unilateral nasal obstruction
- Unexplained tooth mobility not associated with periodontal disease
- Unresolving neck masses > 3 weeks
- Cranial neuropathies
- Orbital masses
Head and Neck Cancer Referral Form
2 week wait referral form  
(suspected head and neck cancer referral)

Always use this form if require urgent referral for possible malignant, pre-malignant or suspicious signs/symptoms

PLEASE DO NOT ABUSE THIS REFERRAL PATHWAY
Current management of oral cancer

- **Surgery**
  - With or without reconstruction

- **Radiotherapy**
  - Primary radical (+/- with chemotherapy), postoperative or palliative

- **Chemotherapy**
  - Primary radical (+/- with radiotherapy), downstaging prior to surgery or palliative
Surgical Treatment: Resultant Defect

- Often large
- Anatomically complex
- Functional implications
Reconstructive Options

- How destructive will the surgery be?
- What reconstructive techniques are possible?
- Likely functional result
  - Aesthetics
  - Speech
  - Swallowing
Further Management And Rehabilitation

- Speech & swallowing therapy
- Psychological and social support
- Further surgery - dental implants
- Regular review - early detection of recurrence
- Terminal care if needed
Problems with treatment

- Risks of surgery
- Side effects of radiotherapy/chemotherapy
- Function – speech & swallowing
- Quality of life
Primary care following treatment

- Ensure good preventive measures
- Good oral hygiene
- S&P
- Topical fluoride application
- Hygiene around dental implants
- Restorative dentistry
- Referral for extractions post-radiotherapy
TEAM-WORKING!
PARTNERSHIP
Role of the dental nurse in oral cancer

- Aware of the risk factors
- Aware of potentially malignant lesions
- Monitor the mouth with the dentist
- Ensure awareness of the need for urgent referral and protocols in place
- Encourage active management following cancer treatment
- Health promotion
Role of the dental nurse in oral cancer

“Dental Nurses are now able to undertake oral health education with the aim of being able to promote oral health to the public and patients. Dental Nurses with the appropriate training can now perform other duties such as applying fluoride varnish in a programme overseen by a Consultant or Specialist in Dental Public Health, or using plaque indices to help educate patients - both of which Dental Nurses would not have dreamt would be possible until recently. The possibilities for Dental Nurses are expanding and Oral Health Education is becoming an exciting part of the Dental Nurse role.”

(The dental nurse network)
**Dental nurses**

Dental nurses are registered dental professionals who provide clinical and other support to other registrants and patients.

Dental nurses:
- prepare and maintain the clinical environment, including the equipment
- carry out infection-control procedures to prevent physical, chemical and microbiological contamination in the surgery or laboratory
- record dental charting carried out by other appropriate registrants
- prepare, mix and handle dental materials
- provide chairside support to the operator during treatment

- keep full and accurate patient records
- prepare equipment, materials and patients for dental radiography
- process dental radiographs
- monitor, support and reassure patients
- give appropriate advice to patients
- support the patient and their colleagues if there is a medical emergency
- make appropriate referrals to other health professionals

Additional skills dental nurses could develop during their careers include:
- further skills in oral health education and oral health promotion
- assisting in the treatment of patients who are under conscious sedation
- further skills in assisting in the treatment of patients with special needs
- intra-oral photography
- shade taking
- placing rubber dam
- measuring and recording plaque indices
- pouring, casting and trimming study models
- removing sutures after the wound has been checked by a dentist
- applying fluoride varnish as part of a programme which is overseen by a consultant in dental public health or a registered specialist in dental public health
- constructing occlusal registration rims and special trays
- repairing the acrylic component of removable appliances
- tracing cephalographs

Additional skills on prescription:
- taking radiographs to the prescription of a dentist
- applying topical anaesthetic to the prescription of a dentist
- constructing mouthguards and bleaching trays to the prescription of a dentist
- constructing vacuum formed retainers to the prescription of a dentist
- taking impressions to the prescription of a dentist or a CDT (where appropriate)

Dental nurses do not diagnose disease or treatment plan. All other skills are reserved to one or more of the other registrant groups.
Career Development

- Specific educational or health promotion role in primary care
- Role in secondary care – OMFS dept
- Certificate in Oral Health
Aims of health promotion

- To increase awareness
- To reduce incidence of disease
- To reduce morbidity & mortality associated both with treatment and natural disease progression
What strategies can we develop?

- Health profession education
- Clinical monitoring & early treatment
- Patient education
  - Individual or community
- National campaigns
- Media involvement
- Vaccination
- Gene therapy & molecular pathology
Examination of mouth
- 58% GDPs regularly examined for mouth cancer
- GMPs examined in a response to complaint of soreness

Lack of confidence in detecting oral cancer
- GMPs 85% (lack of training cited by 70%)
- GDPs 63%
Perceived risk factors
- Smoking (97%) & alcohol (79%)
- Age (76%)
- Leukoplakia – GMP (72%) GDP (79%)
- Erythroplakia – GMP (22%) GDP (66%)

Health promotion questions
- Smoking habits - 87% GMPs 19% GDPs
- Alcohol consumption - 67% GMPs 3% GDPs

GMPs wished for more training
- Detection 91%
- Prevention 79%
Public awareness of mouth cancer

- 2006, BDJ. 384 individuals
- 95% heard of mouth cancer (only 56% in 1999 in similar study)

Tobacco & mouth cancer
- 85% aware of smoking link
- 80% aware of chewing link
Public awareness of mouth cancer

- BUT only
  - 20% link between alcohol & oral cancer
  - 30% aware of white patches as potential problem
  - those at highest risk of condition had least knowledge & less likely to recognise early signs of disease
Education in the community

If possible, feed information before habits commence

Aim at school children

Difficulties

– Peer pressure
– Cooperation from establishments
– What age to start?
– How graphic do we make the warning?
– Attitudes of parents
Sex Education

- HPV is the most prevalent STD

- 50-60% US college-aged women have HPV (only 10% have cancer-causing strains) – (2004)

- 55% teenagers admitted to engaging in oral sexual acts

- 60% of surveyed college students do not equate oral-genital contact with sex
The Future - Vaccination

- Vaccine for HPV recently introduced for girls
- Acts against HPV 6, 11, 16 & 18
- ? Give to whole population for risk of HPV-16 & HPV-18 induced oral cancer?
- Prevents
  - Spread of virus
  - Development of disease
Should boys receive the HPV vaccine?

Many countries have implemented HPV vaccination programmes for girls. Sam Hibbitts argues that they will not be fully effective unless extended to boys, but Kate Cuschieri says the benefit is insufficient.

Sam Hibbitts lectures in reproductive health at the University of Newcastle, NSW, Australia. sam.hibbitts@newcastle.edu.au

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Yes

A vaccination programme should target and stop transmission of the causative agent in order to prevent all associated diseases. The striking flaw in human papillomavirus (HPV) vaccination programmes is the focus on prevention of cervical cancer. What has been overlooked is that HPV infections are responsible for a range of non-cervical diseases in both sexes that have serious morbidity and contribute to a substantial healthcare burden. HPV vaccination of boys alongside girls would facilitate the eradication of HPV and protect boys from infection, reduce transmission, increase herd immunity, and effectively prevent HPV-associated diseases. Limiting HPV vaccination to girls will not lead to eradication.

Benefits of HPV vaccination

Two HPV vaccines are available: Gardasil targets HPV types 6, 11, 16, and 18 and Cervarix targets HPV types 16 and 18. Gardasil has US Food and Drug Administration approval for use in males (9-26 years), and HPV vaccines induce an equivalent immune response in boys and girls. Preliminary studies of Gardasil and Cervarix in boys reported 99.9% and 100% seroconversion respectively at seven months, and both vaccines were well tolerated. Comprehensive efficacy data are expected to confirm that the vaccines can prevent HPV infection and associated disease in boys. HPV vaccines are designed to target HPV specific infections. HPV types 6, 11, 16, and 18 are prevalent in both cervical and non-cervical diseases, and the vaccines can prevent a range of HPV associated diseases. HPV types 16 and 18 contribute to 30% of vaginal, vulval, and oropharyngeal cancers, 20% of oral cancers, and 80% of anal cancers, and the incidence of these cancers is steadily increasing. A US study to assess the burden of HPV associated cancers in men and women found an annual average incidence of 24,918 cases, with most (56.1%) being non-cervical: 2.4% were vaginal, 9.1% vulval, 12.1% anal or rectal, and 25.5% oropharyngeal or oral cavity tumours. In addition, HPV types 6 and 11 cause genital warts, which are a common sexually transmitted disease with...
Dr Nigel Carter, chief executive British Dental Health Foundation (July 2009)

- “Mouth cancer killing more people than cervical cancer and testicular cancer combined”
- “By expanding its HPV vaccination programme to include boys as well as girls, the government would be able to address the problem of rising HPV-related mouth cancer deaths in a simple, fair and effective manner”
The Future - Molecular Pathology

- As yet no absolute molecular test which will predict transformation
- Still very much in the research stages
Conclusions

- Identifiable aetiologies
- Largely preventable disease
- High mortality & morbidity
- Opportunistic screening in practice possible
- Media & national campaigns
- Development of reliable screening tools
- Vaccination
- Molecular markers
- Early hard-hitting intervention to prevent uptake of harmful habits