Management of Oral Cancer

27/03/2008
IDA Year 4 DDS
Management of Oral Cancer

- Diagnosis & Staging
- Investigations
- Pre-operative Workup
- Multidisciplinary team
- Treatment
  - Surgery
  - Radiotherapy
  - Chemotherapy
- New advances/Other treatment
Diagnosis & Staging

- History
- Clinical examination
- Biopsy
  - Incisional biopsy
  - FNAC
  - Punch biopsy
  - Oral brush biopsy
- Histological grading
  - Prognostic features: degree of differentiation, pattern of invasion
- TNM staging
Lip & Oral Cavity: T staging

$T_1$: $\leq 2\, \text{cm}$

$T_2$: $> 2\, \text{cm}, \leq 4\, \text{cm}$

$T_3$: $> 4\, \text{cm}$

$T_4$: massive tumour $> 4\, \text{cm}$ which invades adjacent structures
Regional lymph nodes:

N staging

N₀: no nodes

N₁: ipsilateral, ≤3cm

N₂ₐ: ipsilateral >3cm, ≤6cm

N₂ₖ: ipsilateral, multiple, ≤6cm

N₂₇: bilateral/contralateral, ≤6cm

N₃: >6cm
## Diagnosis & Staging

<table>
<thead>
<tr>
<th>Stage</th>
<th>T level</th>
<th>N level</th>
<th>M level</th>
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<td>any N</td>
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Investigations

- Plain radiograph - OPG, CXR
- Ultrasonography
- CT scan
- MRI scan
- Bone scan
- PET scan
- Endoscopy
Positron Emission Tomography/Computerized Tomography (PET/CT) Scanning for Preoperative Staging of Patients With Oral/Head and Neck Cancer

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Purpose: To investigate the role of 18-fluorine-fluorodeoxyglucose positron emission tomography/computerized tomography (18F-FDG PET/CT) in the preoperative prediction of the presence and extent of neck disease in patients with oral/head and neck cancer.

Patients and Methods: Seventy patients were enrolled in the study, 47 of whom had a clinically negative neck (N0), 19 of whom had a clinically positive unilateral neck (N), and 4 of whom were negative on 1 side of the neck and positive on the other. Each patient underwent a PET/CT study before undergoing selective neck dissection for N0 disease or modified radical neck dissection for N disease. Tissues were submitted for histopathologic examination and were oriented for the pathologist as to the oncologic levels so as to permit correlation between histopathologic findings and the imaging results.

Results: The sensitivity and specificity of the PET/CT procedure were 79% and 82% for the N0 neck, and 95% and 25% for the N neck. One hundred ninety-two (11.4%) of the 1,678 nodes identified at histopathology were positive for metastases. The overall nodal sensitivity and specificity were 48% and 99%, respectively.

Conclusion: In patients with clinically negative necks, a negative test would not help the surgeon in the management strategy of the patient because of the rate of false-negative results, but a positive test can diagnose metastatic deposits with a high positive predictive value. In patients with clinically positive necks, a positive test will confirm the presence of disease, although false-negative lymph nodes were additionally identified in these clinically positive necks. With respect to nodes, the sensitivity of the imaging procedure is such that the results could not help the surgeon in deciding which level to dissect and which to spare. In the final analysis, the head and neck oncologic surgeon should not depend on the results of the PET/CT scan to determine which patients will benefit from neck dissection. Rather, time-honored principles of neck surgery should be followed, particularly with regard to the liberal execution of prophylactic neck dissections in patients with clinically N0 necks.

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CT and PET Scan
Bone Scan
Multidisciplinary Team

- To discuss treatment options
- Pre-operative management
- Treatment
- Follow-up/rehabilitation
- Surgeons, oncologist, prosthodontist, nurses, speech therapist, dietitian, dental hygienist, social worker, physiotherapist
Surgical Treatment

- Ablative surgery
- Debulking surgery
- Palliative surgery
- Reconstructive surgery

Management of the Neck
  - Neck dissection: selective or radical
Pre-operative Workup

• Thorough assessment of overall health
  • Clinical assessment
    • General
    • Dental - ? Need for clearance
• Chest x-ray, OPG, CT, MRI
• ECG
• PFT, ECHO if necessary
• Blood tests: FBC, BUSE, LFT, clotting, GXM
Neck Dissection

Supraomohyoid

Jugular (larynx)

Comprehensive (thyroid)

Modified (parotid)

Postero-lateral

Comprehensive-RND
Radiotherapy

- Radiotherapy may be used alone or in combination with surgery or chemotherapy
- Types
  - External beam – photons, gamma ray
  - Interstitial implantation – implanted radioactive isotopes
- Mechanism of tissue destruction
  - Cytotoxic effects: direct damage to DNA/RNA molecules, free radicals
  - Effects on cellular kinetics: mitotic delay
- New techniques
  - Intensity modulated radiotherapy (IMRT)
  - Intraoperative irradiation with high Linear Energy Transfer (high LET) radiation
  - Use of radiosensitisers & radioprotectors
  - Radioimmunotherapy
- Side effects
  - Mucositis, skin irritation, loss of hair in the treated area, xerostomia,
  - May lead to osteoradionecrosis
Chemotherapy

- use of chemicals to destroy cancer cells in one of three ways:
  - Damage the DNA of the cancer cells so they can no longer reproduce, e.g. Cyclophosphamide, Cisplatin
  - Inhibit the synthesis of new DNA strands so that no cell replication is possible, e.g. 6-mercaptopurine, 5-fluorouracil
  - Stop the mitotic processes of the cell so that the cancer cell cannot divide into two cells, e.g. Vincristine, Vinblastine

- rarely of curative value for oral SCC
- may be used in two situations (where the palliative benefit is shrinkage of tumour mass and relief of pain):
  a) As part of combined modality therapy for stage III & IV disease
  b) As part of a palliative regime for patients with
     - Metastatic disease
     - Locoregional recurrence
     - Persistent cancer

- Side effects
  - GIT problems, hair loss, low blood cell counts, skin rashes, fatigue, infertility
New advances/Other treatment

- Gene Therapy
- Immunotherapy
- High-tech surgery
Follow-up after treatment of squamous cell carcinoma of the oral cavity: Current maxillofacial practice in the United Kingdom

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Abstract

Although patients are commonly reviewed after primary treatment for squamous cell carcinoma (SCC) of the oral cavity, there is little evidence about the frequency and duration of such a review. To try and obtain further information about current practice within the United Kingdom we used a structured telephone questionnaire to contact 50 units. Most of them (n=40, 80%) had developed follow-up protocols, and 38 (76%) reviewed patients for 5 years. All units examined patients monthly for the first year, and 90% of patients were seen 2-monthly for the following year. Slight variations for follow-up existed in years 3 and 4, but by the fifth year, 6-monthly review was almost universal (96%). Despite this surprising concordance, few units implemented a risk-adapted follow-up protocol that was aimed at targeting those people likely to be cured of relapsing disease.

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Keywords: Oral squamous cell carcinoma; Follow-up; United Kingdom practice
Timing and presentation of recurrent oral and oropharyngeal squamous cell carcinoma and awareness in the outpatient clinic

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Abstract

The aim of this study was to assess the timing of outpatient review appointments in relation to tumour recurrence. A retrospective review of 278 consecutive previously untreated patients with oral and oropharyngeal squamous cell carcinoma (SCC) between 1995 and 1999 was performed. Information on the time of recurrence, site, presentation, treatment and outcome was collected. There were 54 (19%) patients who developed recurrent disease. Recurrence occurred at a median time of 8 months after the initial operation and most (49/54) within 2 years. Thirty-five patients (65%) presented with a new lump (7 local, 22 regional and 5 locoregional). Our policy is to review patients once a month for the first year and every other month for the second year. Patients were seen less frequently than expected, and one in five patients attended half or less than half as frequently as intended in the first year. Although 20 patients were aware of new symptoms from their recurrent disease fewer than half (9) brought their appointment forward. This study has emphasised the need for close clinical follow-up of patients previously treated for oral/oropharyngeal SCC if recurrent tumours are to be discovered and treated at the earliest opportunity.

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Keywords: Oral cancer; Oropharyngeal cancer; Recurrence; Outpatients; Follow-up
Rehabilitation

- Should be considered from the time of diagnosis in a comprehensive and complete treatment plan
- Objectives
  - To restore function and appearance
  - To improve quality of life
- Requires multidisciplinary team approach
Rehabilitation

Potential impaired functions in oral cancer survivors:

- Speech
- Swallowing
- Mastication
- Control of saliva
- Shoulder functions
- Facial expression
Rehabilitation: Maxillary defects

- **Management**
  a) **Prosthodontic restoration**
    - **Obturator**
      - to restore the physical separation between the oral and nasal cavities,
      - thereby restoring speech and swallowing to near normal,
      - and to provide support to the lip and cheek.
    - **Osseointegrated implant**
      - Improves retention & stability of obturator prosthesis, improving mastication
  b) **Surgical reconstruction**
    - e.g. scapular free flap to reconstruct palate
Rehabilitation: Mandible/Tongue Defects

- Defects following mandibulectomy or glossectomy, either partial or total
- Potential problems:
  - Swallowing
  - Mastication
  - Speech articulation
  - Control of saliva
  - Retruded/deviated mandible
  - Cosmetic disfigurement
Rehabilitation: Mandible/Tongue Defects

• Management
  a) Surgical reconstruction
     a. Mandible
        • free vascularised bone grafts
           – Fibula
           – Iliac crest
     b. Tongue
        • Myocutaneous free flap
  b) Prothodontic restoration
     • Osseointegrated implant
        • Improves retention & stability of denture
Palliative Care

- In inoperable cases due to
  - Patient’s general health
  - Extent of lesion
Recommended readings
