HALITOSIS

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INTRODUCTION

Halitosis, a common complaint is a general term used to describe any kind of unpleasant odour emitted from the mouth.
DEFINITION
An offensive odour emanating from the oral cavity (Klienberg & Westbay 1990)
SYNONYMS

- Fetor exore
- Fetor oris
- Bad breath
- Bad odour
- Mal odour
EPIDEMIOLOGY

- Age range can be from 5-80 yrs
- Oral causes-90%
- ENT – 8%
- Other aetiologies -5%
ETIOLOGY

• The main cause for oral malodour production is **protein degradation** by the **bacteria** covering oral hard & soft tissues, especially the tongue
THE MAIN CONSTITUENTS

SULFUR CONTAINING VOLATILES (VSC) [Tonzetich]

- Hydrogen sulfide [H2S]
- Methyl mercaptan [CH3SH]
- Dimethyl sulfide [(CH3)2S]
OTHER COMPOUNDS

• Fatty acids
• Ammonia
• Diamines
• Organic acids — Butyric & Propionic acid

FACTORS – ORAL MALODOUR

- BACTERIA
- PH
- AMINO ACIDS
- INTRA ORAL OXYGEN LEVEL
CAUSES

- PHYSIOLOGIC
- PATHOLOGIC
PHYSIOLOGIC CAUSES
MORNING BAD BREATH

- Habitually experienced during awakening

- Caused by salivary flow and putrefaction during night & spontaneously disappears on ↑ oral hygiene measures
PATHOLOGIC CAUSES
DISORDERS OF ORAL CAVITY

- Poor oral hygiene
- Dental plaque
- Dental caries
- Open gangrenous pulp
- Putrefaction of saliva
- Gingivitis
- Stomatitis
- Periodontitis
- Coated tongue
- Oral carcinoma
- Dentures
- Healing surgical & extraction wounds
DRY MOUTH

In xerostomic pts there is ed amounts of plaque accumulation over teeth, prosthesis & tongue dorsum microbial load & escape of VSC’s
ANATOMICAL VARIATIONS

**Fissurated** — Tongue with deep fissures on dorsal surface

**Hairy** — Formed due to irregular desquamation of filiform papillae

**Ulcerated**
FISSURATED TONGUE

HAIRY TONGUE
DEPAPILLATED TONGUE

ULCERATED TONGUE
## DISORDERS OF RESPIRATORY TRACT

<table>
<thead>
<tr>
<th>URT</th>
<th>LRT</th>
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<tbody>
<tr>
<td>Mouth breathing</td>
<td>Carcinoma-lung</td>
</tr>
<tr>
<td>Chronic sinusitis</td>
<td>Bronchiectasis</td>
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<tr>
<td>Atrophic rhinitis</td>
<td>Necrotising pneumonitis</td>
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<tr>
<td>Wegener Granulomatosis</td>
<td>Pulmonary Abscess</td>
</tr>
<tr>
<td>TB</td>
<td></td>
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<tr>
<td>Syphilis</td>
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<td>Nasopharyngeal abscess</td>
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DISORDERS OF ENT

- Acute pharyngitis [Bacterial/Viral]
- Chronic/Purulent tonsillitis
# DISORDERS OF GIT

<table>
<thead>
<tr>
<th>UGIT</th>
<th>LGIT</th>
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<tbody>
<tr>
<td>Dehydration</td>
<td>Hiatus Hernia</td>
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<tr>
<td>Peritonsillar abscess</td>
<td>Enteric infections</td>
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<tr>
<td>Vincent’s angina</td>
<td>Pyloric stenosis</td>
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<tr>
<td>Retropharyngeal abscess</td>
<td>Hepatic failure</td>
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SYSTEMIC DISORDERS

- Leukemia
- Agranulomatosis
- Ketoacidosis
- Renal failure
DIABETES

Insulin dependent/type 1
  • Accumulation of ketones

Uncontrolled diabetes—may b’cme insulin dependant
HORMONAL

- Progesterone levels in expired air 2-4 fold during ovulation compared to mid-follicular phases [Bosy et al 1997]
MEDICATIONS

- Metronidazole
- Dimethyl sulfoxide
- Penicillamine
DIAGNOSIS
PATIENT QUESTIONNAIRE
QUESTIONARE

MEDICAL HISTORY:
- Time of appearance (after/before meals)
- Any medications?
- Dryness?
<table>
<thead>
<tr>
<th>Breath Odour</th>
<th>Cause</th>
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<tbody>
<tr>
<td>Rotten egg</td>
<td>VSC</td>
</tr>
<tr>
<td>Sweet odour [dead mice]</td>
<td>Liver insufficiency</td>
</tr>
<tr>
<td>Rotten apples</td>
<td>Unbalanced IDDM [KETONE BODIES]</td>
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<tr>
<td>Fish odour</td>
<td>Kidney insufficiency</td>
</tr>
<tr>
<td></td>
<td>Uraemia</td>
</tr>
<tr>
<td>Rotten onions</td>
<td>Arsenic medications</td>
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CLINICAL & LABORATORY EXAMINATION
SELF EXAMINATION

- Motivates pt to continue OHI & self evaluate
- Smelling a metallic/plastic spoon after scraping back of tongue
- Smelling a toothpick after introducing into interdental areas
- Smelling saliva spit in a cup [after drying]
- Licking the wrist & allowing it to dry
SELF EXAMINATION
• OSMOSCPOE: Instrument to measure intensity of bad breath
ORGANOLEPTIC RATING

Assessment done by a judge

A trained judge sniffs the expired air & assess whether it is unpleasant using an intensity rating, (0-5) [Rosenberg & Mccolloch]

Based on olfactory organs of the judge
TONGUE COATING-SAMPLE
PLAQUE SAMPLE

NASAL CAVITY ODOUR
PORTABLE VOLATILE SULFIDE MONITOR

- Electronic device
- Analyses H2S & Methyl mercaptan
- Commercially available as **Halimeter** (Inter scan corporation USA)
HALIMETER
The straw is kept about 2cm behind the lips without touching any surface & while the pt keeps the mouth slightly open & breathes normally.

The sulphide meter uses a Volta metric sensor that generates a signal when exposed to sulphur containing gases.
OROPHARYNGEAL EXAMINATION

The examination should involve all possible retention areas for bacteria/debris

Any ulceration [Herpes, Recurrent oral ulcerations, Trauma]

Extraction wounds – sweet fetid odour
ULCERATIVE LESION

Tissue necrosis-typical offensive odour

NUG
GINIGIVITIS

PERIODONTITIS
TONGUE COATING

NORMAL TONGUE

COATED TONGUE
TONSIL WITH NORMAL CRYPTS

TONSIL-PURULENT EXUDATE
TREATMENT
MECHANICAL REDUCTION

- Tongue & interdental cleaning
- One stage full mouth disinfection combining scaling & root planing

CHEMICAL REDUCTION

Antimicrobial agents like chlorhexidine, & triclosan
• CONVERSION OF VOLATILE SULFIDE COMPOUNDS
  salt solutions
Toothpastes
Chewing gum

MASKING THE MALODOR
By salivary flow [chewing gum]
• GIT, ENT, RESPIRATORY, & OTHER SYSTEMIC DISORDERS ARE TREATED RESPECTIVELY
Dealing with malodour is fascinating b’coz of diversity in causes & treatment