



## Grounding Caption

This localization caption provides multi-dimensional spatial analysis of anatomical structures and pathological findings for this panoramic dental X-ray image, including:

Teeth visibility with center points (total: 27):

```
[
{'point_2d': [656, 644], 'tooth_id': '45', 'score': 0.96},
{'point_2d': [518, 600], 'tooth_id': '47', 'score': 0.95},
{'point_2d': [452, 426], 'tooth_id': '18', 'score': 0.94},
{'point_2d': [744, 470], 'tooth_id': '13', 'score': 0.94},
{'point_2d': [591, 450], 'tooth_id': '16', 'score': 0.93},
{'point_2d': [707, 652], 'tooth_id': '44', 'score': 0.92},
{'point_2d': [1129, 460], 'tooth_id': '26', 'score': 0.92},
{'point_2d': [978, 682], 'tooth_id': '33', 'score': 0.92},
{'point_2d': [449, 577], 'tooth_id': '48', 'score': 0.92},
{'point_2d': [1210, 607], 'tooth_id': '37', 'score': 0.91},
{'point_2d': [1205, 439], 'tooth_id': '27', 'score': 0.91},
{'point_2d': [749, 675], 'tooth_id': '43', 'score': 0.91},
{'point_2d': [518, 432], 'tooth_id': '17', 'score': 0.91},
{'point_2d': [1061, 648], 'tooth_id': '35', 'score': 0.89},
{'point_2d': [802, 660], 'tooth_id': '42', 'score': 0.87},
{'point_2d': [989, 470], 'tooth_id': '23', 'score': 0.87},
{'point_2d': [940, 472], 'tooth_id': '22', 'score': 0.87},
{'point_2d': [1014, 659], 'tooth_id': '34', 'score': 0.86},
{'point_2d': [798, 478], 'tooth_id': '12', 'score': 0.86},
{'point_2d': [845, 475], 'tooth_id': '11', 'score': 0.86},
{'point_2d': [1074, 457], 'tooth_id': '25', 'score': 0.86},
{'point_2d': [888, 659], 'tooth_id': '31', 'score': 0.85},
{'point_2d': [892, 474], 'tooth_id': '21', 'score': 0.84},
{'point_2d': [650, 447], 'tooth_id': '15', 'score': 0.84},
{'point_2d': [921, 664], 'tooth_id': '32', 'score': 0.83},
{'point_2d': [696, 456], 'tooth_id': '14', 'score': 0.82},
{'point_2d': [848, 657], 'tooth_id': '41', 'score': 0.77}
]
```

Wisdom teeth detection (total: 2):

```
[
{'box_2d': [418, 358, 485, 494], 'tooth_id': '18', 'is_impacted': false, 'score': 0.94},
{'box_2d': [397, 506, 501, 649], 'tooth_id': '48', 'is_impacted': false, 'score': 0.92}
]
```

Dental Pathological Findings (total: 6):

```
[
{'box_2d': [1042, 420, 1149, 591], 'tooth_id': '26', 'label': 'caries', 'score': 0.19},
{'box_2d': [490, 383, 571, 543], 'tooth_id': '17', 'label': 'caries', 'score': 0.18},
{'box_2d': [796, 386, 914, 559], 'tooth_id': '11', 'label': 'calculus', 'score': 0.44},
{'box_2d': [1011, 428, 1046, 475], 'tooth_id': 'unknown', 'label': 'root-stump', 'score': 0.64, 'near_tooth': '23'},
{'box_2d': [1254, 546, 1279, 582], 'tooth_id': 'unknown', 'label': 'root-stump', 'score': 0.41, 'near_tooth': '37'},
{'box_2d': [778, 522, 807, 560], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.29, 'near_tooth': '12'}
]
```

Historical Treatments (total: 0):

```
[ ]
```

# **Medical Report**

## **Oral Panoramic X-ray Examination Report**

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### **\*\*Teeth-Specific Observations\*\***

#### **#### General Condition**

A total of 27 teeth are visualized within the field of view, including the presence of both upper right (tooth #18) and upper left (tooth #48) wisdom teeth, which are fully erupted and not impacted. No evidence of prior tooth extraction is observed.

#### **#### Pathological Findings**

##### **- Caries:**

- Suspicious for caries on #26 (upper right first molar) and #17 (lower right second premolar).
- Areas of concern noted for potential caries near tooth #12 (lower left second premolar).

##### **- Calculus:**

- Suspected calculus deposits on #11 (lower left first premolar).

##### **- Root Stumps:**

- Suspicious for root stumps near tooth #23 (upper right first molar) and #37 (upper left third molar).

#### **#### Historical Interventions**

No prior restorations, root canal treatments, or implants are observed.

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### **\*\*Clinical Summary & Recommendations\*\***

#### **#### Priority Concerns**

1. **Deep caries suspicion on #26 and #17:** Requires evaluation for restorative intervention.
2. **Root stumps near #23 and #37:** Further radiographic assessment recommended to confirm presence of residual roots.
3. **Calculus deposits on #11:** Reinforcement of professional scaling or home plaque control.

#### **#### Preventive Measures**

- Reinforce patient education on plaque removal techniques, particularly for #11.
- Monitor suspicious areas of potential caries on #12 and #17 during routine recall visits.

#### **#### Follow-up Protocol**

- Schedule a 6-month recall for monitoring of carious lesions and calculus management.
  - Referral to endodontist for definitive diagnosis and treatment planning of suspected root stumps (#23, #37).
  - Consider bitewing radiographs for confirmation of carious involvement on #26 and #17.
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\*Note: All findings are described with anatomical specificity using the FDI numbering system.\*