



## 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: 26):

```
[  
{'point_2d': [1114, 654], 'tooth_id': '36', 'score': 0.96},  
{'point_2d': [681, 660], 'tooth_id': '46', 'score': 0.95},  
{'point_2d': [750, 683], 'tooth_id': '45', 'score': 0.93},  
{'point_2d': [1052, 682], 'tooth_id': '35', 'score': 0.93},  
{'point_2d': [1186, 610], 'tooth_id': '37', 'score': 0.93},  
{'point_2d': [663, 470], 'tooth_id': '16', 'score': 0.92},  
{'point_2d': [593, 463], 'tooth_id': '17', 'score': 0.91},  
{'point_2d': [596, 627], 'tooth_id': '47', 'score': 0.91},  
{'point_2d': [1002, 696], 'tooth_id': '34', 'score': 0.9},  
{'point_2d': [535, 593], 'tooth_id': '48', 'score': 0.9},  
{'point_2d': [964, 701], 'tooth_id': '33', 'score': 0.89},  
{'point_2d': [1157, 453], 'tooth_id': '27', 'score': 0.89},  
{'point_2d': [950, 510], 'tooth_id': '23', 'score': 0.88},  
{'point_2d': [994, 490], 'tooth_id': '24', 'score': 0.88},  
{'point_2d': [712, 474], 'tooth_id': '15', 'score': 0.88},  
{'point_2d': [760, 485], 'tooth_id': '14', 'score': 0.88},  
{'point_2d': [1034, 487], 'tooth_id': '25', 'score': 0.86},  
{'point_2d': [1088, 471], 'tooth_id': '26', 'score': 0.86},  
{'point_2d': [824, 709], 'tooth_id': '43', 'score': 0.85},  
{'point_2d': [930, 707], 'tooth_id': '32', 'score': 0.83},  
{'point_2d': [791, 701], 'tooth_id': '44', 'score': 0.82},  
{'point_2d': [796, 491], 'tooth_id': '13', 'score': 0.82},  
{'point_2d': [911, 508], 'tooth_id': '22', 'score': 0.8},  
{'point_2d': [855, 507], 'tooth_id': '11', 'score': 0.71},  
{'point_2d': [901, 714], 'tooth_id': '31', 'score': 0.69},  
{'point_2d': [857, 712], 'tooth_id': '42', 'score': 0.64}  
]
```

Wisdom teeth detection (total: 1):

```
[  
{'box_2d': [490, 532, 579, 654], 'tooth_id': '48', 'is_impacted': false, 'score': 0.9}  
]
```

Dental Pathological Findings (total: 5):

```
[  
{'box_2d': [515, 329, 576, 457], 'tooth_id': 'unknown', 'label': 'impacted', 'score': 0.8, 'near_tooth': '17'},  
{'box_2d': [633, 501, 654, 526], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.3, 'near_tooth': '16'},  
{'box_2d': [1058, 489, 1074, 513], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.26, 'near_tooth': '25'},  
{'box_2d': [1123, 482, 1138, 505], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.26, 'near_tooth': '26'},  
{'box_2d': [627, 499, 645, 523], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.24, 'near_tooth': '16'}  
]
```

Historical Treatments (total: 1):

```
[  
{'box_2d': [561, 506, 618, 538], 'tooth_id': 'unknown', 'label': 'restoration', 'score': 0.6, 'near_tooth': '17'}  
]
```

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# Medical Report

## Teeth-Specific Observations

### 1. General Condition

- A total of 26 teeth are visualized within the panoramic image. All identified wisdom teeth are accounted for, with #48 (left mandibular third molar) present and non-impacted. Remaining wisdom teeth (#18, #28, #38) are not clearly visualized or not included in the dataset.

### 2. Pathological Findings

- **Impacted wisdom tooth:** Clear indication of an impacted wisdom tooth near #17 (right maxillary second molar).
- **Suspected caries:** Areas of concern noted for potential carious lesions near #16 (left maxillary first molar) and adjacent to #25 (right mandibular first premolar) and #26 (right mandibular second premolar). Confidence in these findings is low, necessitating clinical correlation.

### 3. Historical Interventions

- **Restoration:** Presence of a dental restoration near #17 (right maxillary second molar).
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## Clinical Summary & Recommendations

### 1. Priority Concerns

- Impacted wisdom tooth near #17 requires evaluation for surgical extraction due to risk of periodontal compromise or caries propagation.
- Suspected carious lesions near #16, #25, and #26 demand urgent clinical assessment to confirm diagnosis and initiate preventive or restorative management.

### 2. Preventive Measures

- Reinforce oral hygiene protocols, emphasizing interproximal cleaning around #16 and #25.
- Monitor suspicious areas near #16, #25, and #26 with 3-month follow-up imaging to assess lesion progression.

### 3. Follow-up Protocol

- **Referral:** Urgent consultation with an oral surgeon for impacted wisdom tooth (#17) and an endodontist for definitive evaluation of suspected caries near #16.
- **Recall:** Schedule a 6-month recall for reassessment of carious lesions and impacted tooth status.
- **Imaging:** Repeat high-resolution imaging for #25 and #26 to clarify caries extent if clinical findings remain inconclusive.