



## 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': [551, 392], 'tooth_id': '18', 'score': 0.96},  
{'point_2d': [1105, 653], 'tooth_id': '36', 'score': 0.95},  
{'point_2d': [643, 618], 'tooth_id': '47', 'score': 0.93},  
{'point_2d': [1198, 443], 'tooth_id': '27', 'score': 0.92},  
{'point_2d': [621, 395], 'tooth_id': '17', 'score': 0.92},  
{'point_2d': [1032, 450], 'tooth_id': '24', 'score': 0.92},  
{'point_2d': [1172, 651], 'tooth_id': '37', 'score': 0.91},  
{'point_2d': [695, 390], 'tooth_id': '16', 'score': 0.91},  
{'point_2d': [1042, 660], 'tooth_id': '35', 'score': 0.91},  
{'point_2d': [554, 589], 'tooth_id': '48', 'score': 0.9},  
{'point_2d': [1252, 625], 'tooth_id': '38', 'score': 0.9},  
{'point_2d': [762, 394], 'tooth_id': '15', 'score': 0.88},  
{'point_2d': [713, 633], 'tooth_id': '46', 'score': 0.87},  
{'point_2d': [1266, 429], 'tooth_id': '28', 'score': 0.87},  
{'point_2d': [1133, 430], 'tooth_id': '26', 'score': 0.85},  
{'point_2d': [932, 456], 'tooth_id': '21', 'score': 0.84},  
{'point_2d': [1002, 442], 'tooth_id': '23', 'score': 0.84},  
{'point_2d': [782, 637], 'tooth_id': '45', 'score': 0.84},  
{'point_2d': [1075, 441], 'tooth_id': '25', 'score': 0.83},  
{'point_2d': [897, 441], 'tooth_id': '11', 'score': 0.8},  
{'point_2d': [970, 448], 'tooth_id': '22', 'score': 0.79},  
{'point_2d': [825, 650], 'tooth_id': '43', 'score': 0.78},  
{'point_2d': [856, 435], 'tooth_id': '12', 'score': 0.76},  
{'point_2d': [970, 653], 'tooth_id': '33', 'score': 0.68},  
{'point_2d': [808, 410], 'tooth_id': '14', 'score': 0.68},  
{'point_2d': [781, 637], 'tooth_id': '44', 'score': 0.66}  
]
```

Wisdom teeth detection (total: 4):

```
[  
{'box_2d': [520, 321, 582, 464], 'tooth_id': '18', 'is_impacted': false, 'score': 0.96},  
{'box_2d': [490, 513, 617, 665], 'tooth_id': '48', 'is_impacted': false, 'score': 0.9},  
{'box_2d': [1196, 554, 1309, 696], 'tooth_id': '38', 'is_impacted': false, 'score': 0.9},  
{'box_2d': [1236, 354, 1296, 504], 'tooth_id': '28', 'is_impacted': false, 'score': 0.87}  
]
```

Dental Pathological Findings (total: 6):

```
[  
{'box_2d': [592, 343, 690, 516], 'tooth_id': '17', 'label': 'caries', 'score': 0.18},  
{'box_2d': [732, 343, 822, 523], 'tooth_id': '15', 'label': 'caries', 'score': 0.2},  
{'box_2d': [995, 613, 1017, 722], 'tooth_id': 'unknown', 'label': 'root-stump', 'score': 0.52, 'near_tooth': '35'},  
{'box_2d': [1214, 443, 1232, 479], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.42, 'near_tooth': '27'},  
{'box_2d': [1060, 570, 1098, 600], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.28, 'near_tooth': '36'},  
{'box_2d': [634, 417, 656, 447], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.26, 'near_tooth': '17'}  
]
```

Historical Treatments (total: 0):

```
[  
]
```

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# Medical Report

## Teeth-Specific Observations

### 1. General Condition

- A total of 26 teeth are visualized. All four wisdom teeth (#18, #28, #38, #48) are present and non-impacted.
- No implants or crowns are observed.

### 2. Pathological Findings

- **#17 (Left First Molar):** Suspicious for caries; areas of concern noted.
- **#15 (Left Canine):** Suspected caries with low confidence.
- **Near #35 (Right First Molar):** Suspicious for a root stump in the adjacent region.
- **Near #27 (Right Second Premolar):** Areas of concern suggestive of caries.
- **Near #36 (Right Second Molar):** Suspected caries in proximity.
- **Near #17 (Left First Molar):** Additional suspicious caries in adjacent area.

### 3. Historical Interventions

- No prior restorations, root canal treatments, or implants are detected.

## Clinical Summary & Recommendations

### 1. Priority Concerns

- **Suspicious caries on #17 and #15** require evaluation for potential restorative intervention.
- **Root stump near #35** may indicate residual apical tissue or incomplete extraction; further assessment is warranted.
- **Caries-like lesions near #27, #36, and #17** should be prioritized for diagnostic confirmation.

### 2. Preventive Measures

- Reinforce oral hygiene protocols to mitigate caries progression.
- Monitor suspicious areas near #27, #36, and #17 for radiographic and clinical changes.

### 3. Follow-up Protocol

- Schedule a **6-month recall** for re-evaluation of caries susceptibility and root stump status.
- **Referral to endodontist** is recommended for #17 and #15 if caries progression is confirmed.
- Consider **surgical evaluation** for the root stump near #35 to rule out infection or cystic degeneration.