



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: 30):

```
[
{'point_2d': [678, 724], 'tooth_id': '45', 'score': 0.95},
{'point_2d': [599, 490], 'tooth_id': '16', 'score': 0.95},
{'point_2d': [532, 657], 'tooth_id': '47', 'score': 0.94},
{'point_2d': [1202, 511], 'tooth_id': '27', 'score': 0.94},
{'point_2d': [455, 441], 'tooth_id': '18', 'score': 0.93},
{'point_2d': [608, 700], 'tooth_id': '46', 'score': 0.93},
{'point_2d': [525, 471], 'tooth_id': '17', 'score': 0.92},
{'point_2d': [937, 569], 'tooth_id': '22', 'score': 0.91},
{'point_2d': [455, 607], 'tooth_id': '48', 'score': 0.91},
{'point_2d': [725, 735], 'tooth_id': '44', 'score': 0.91},
{'point_2d': [662, 515], 'tooth_id': '15', 'score': 0.9},
{'point_2d': [1040, 733], 'tooth_id': '35', 'score': 0.9},
{'point_2d': [963, 761], 'tooth_id': '33', 'score': 0.9},
{'point_2d': [1001, 753], 'tooth_id': '34', 'score': 0.89},
{'point_2d': [1131, 514], 'tooth_id': '26', 'score': 0.88},
{'point_2d': [896, 569], 'tooth_id': '21', 'score': 0.88},
{'point_2d': [749, 523], 'tooth_id': '13', 'score': 0.88},
{'point_2d': [762, 744], 'tooth_id': '43', 'score': 0.88},
{'point_2d': [706, 531], 'tooth_id': '14', 'score': 0.86},
{'point_2d': [911, 752], 'tooth_id': '32', 'score': 0.86},
{'point_2d': [821, 747], 'tooth_id': '42', 'score': 0.86},
{'point_2d': [1072, 530], 'tooth_id': '25', 'score': 0.85},
{'point_2d': [1027, 539], 'tooth_id': '24', 'score': 0.85},
{'point_2d': [876, 751], 'tooth_id': '31', 'score': 0.84},
{'point_2d': [1255, 647], 'tooth_id': '38', 'score': 0.83},
{'point_2d': [798, 567], 'tooth_id': '12', 'score': 0.82},
{'point_2d': [1269, 481], 'tooth_id': '28', 'score': 0.81},
{'point_2d': [843, 572], 'tooth_id': '11', 'score': 0.81},
{'point_2d': [850, 747], 'tooth_id': '41', 'score': 0.79},
{'point_2d': [988, 538], 'tooth_id': '23', 'score': 0.78}
]
```

Wisdom teeth detection (total: 4):

```
[
{'box_2d': [413, 369, 497, 513], 'tooth_id': '18', 'is_impacted': false, 'score': 0.93},
{'box_2d': [387, 539, 523, 675], 'tooth_id': '48', 'is_impacted': false, 'score': 0.91},
{'box_2d': [1188, 585, 1322, 709], 'tooth_id': '38', 'is_impacted': false, 'score': 0.83},
{'box_2d': [1234, 409, 1304, 552], 'tooth_id': '28', 'is_impacted': false, 'score': 0.81}
]
```

Dental Pathological Findings (total: 1):

```
[
{'box_2d': [1047, 469, 1142, 638], 'tooth_id': '25', 'label': 'caries', 'score': 0.25}
]
```

Historical Treatments (total: 3):

```
[
{'box_2d': [1051, 640, 1162, 805], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.94, 'near_tooth': '35'},
{'box_2d': [1053, 587, 1268, 702], 'tooth_id': 'unknown', 'label': 'restoration', 'score': 0.93, 'near_tooth': '38'},
]
```

```
{'box_2d': [1052, 640, 1136, 706], 'tooth_id': 'unknown', 'label': 'crown', 'score': 0.63, 'near_tooth': '35'}
]
```

Medical Report

Teeth-Specific Observations

1. General Condition

- A total of 30 teeth are visualized on the panoramic radiograph.
- All four wisdom teeth (#18, #48, #38, #28) are present and unimpacted.

2. Pathological Findings

- #25 exhibits a suspicious area indicative of early caries, with radiographic evidence of demineralization.
- No signs of periapical pathology, periodontal disease, or calculus are detected.

3. Historical Interventions

- A restoration (filling) is present near #38.
 - A root canal-treated tooth (rc-treated) is observed adjacent to #35.
 - A crown is identified near #35, though its visualization is limited by artifact or angulation.
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Clinical Summary & Recommendations

1. Priority Concerns

- Immediate attention is required for the suspicious caries lesion on #25.
- The rc-treated status of the tooth near #35 warrants evaluation for secondary caries or apical pathology.

2. Preventive Measures

- Reinforce oral hygiene protocols, emphasizing interproximal cleaning for #25 and #35.
- Monitor the suspicious lesion on #25 for progression.

3. Follow-up Protocol

- Schedule a clinical examination for #25 to confirm caries diagnosis and initiate restorative treatment.
- Perform a 6-month recall to reassess the status of #25 and the rc-treated unit near #35.
- Consider referral to an endodontist for further evaluation of the rc-treated tooth near #35 if periapical changes are detected.