



## 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: 28):

```
[
{'point_2d': [508, 655], 'tooth_id': '47', 'score': 0.95},
{'point_2d': [560, 463], 'tooth_id': '16', 'score': 0.95},
{'point_2d': [599, 667], 'tooth_id': '46', 'score': 0.95},
{'point_2d': [1271, 645], 'tooth_id': '37', 'score': 0.94},
{'point_2d': [421, 431], 'tooth_id': '18', 'score': 0.94},
{'point_2d': [627, 467], 'tooth_id': '15', 'score': 0.93},
{'point_2d': [485, 460], 'tooth_id': '17', 'score': 0.93},
{'point_2d': [790, 679], 'tooth_id': '43', 'score': 0.93},
{'point_2d': [686, 466], 'tooth_id': '14', 'score': 0.93},
{'point_2d': [1291, 453], 'tooth_id': '27', 'score': 0.92},
{'point_2d': [909, 475], 'tooth_id': '21', 'score': 0.92},
{'point_2d': [1035, 662], 'tooth_id': '34', 'score': 0.91},
{'point_2d': [962, 468], 'tooth_id': '22', 'score': 0.91},
{'point_2d': [736, 671], 'tooth_id': '44', 'score': 0.91},
{'point_2d': [979, 667], 'tooth_id': '33', 'score': 0.9},
{'point_2d': [1097, 666], 'tooth_id': '35', 'score': 0.9},
{'point_2d': [738, 465], 'tooth_id': '13', 'score': 0.9},
{'point_2d': [1206, 452], 'tooth_id': '26', 'score': 0.89},
{'point_2d': [1132, 463], 'tooth_id': '25', 'score': 0.88},
{'point_2d': [1068, 465], 'tooth_id': '24', 'score': 0.88},
{'point_2d': [855, 480], 'tooth_id': '11', 'score': 0.88},
{'point_2d': [805, 480], 'tooth_id': '12', 'score': 0.88},
{'point_2d': [905, 664], 'tooth_id': '31', 'score': 0.87},
{'point_2d': [1019, 461], 'tooth_id': '23', 'score': 0.84},
{'point_2d': [876, 667], 'tooth_id': '41', 'score': 0.83},
{'point_2d': [667, 670], 'tooth_id': '45', 'score': 0.82},
{'point_2d': [843, 669], 'tooth_id': '42', 'score': 0.8},
{'point_2d': [937, 663], 'tooth_id': '32', 'score': 0.79}
]
```

Wisdom teeth detection (total: 1):

```
[
{'box_2d': [384, 350, 457, 512], 'tooth_id': '18', 'is_impacted': false, 'score': 0.94}
]
```

Dental Pathological Findings (total: 2):

```
[
{'box_2d': [334, 549, 466, 657], 'tooth_id': 'unknown', 'label': 'impacted', 'score': 0.93, 'near_tooth': '47'},
{'box_2d': [424, 578, 462, 623], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.4, 'near_tooth': '47'}
]
```

Historical Treatments (total: 2):

```
[
{'box_2d': [1117, 570, 1234, 741], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.92, 'near_tooth': '35'},
{'box_2d': [1115, 570, 1222, 633], 'tooth_id': 'unknown', 'label': 'crown', 'score': 0.66, 'near_tooth': '35'}
]
```

# Medical Report

## Teeth-Specific Observations

### 1. General Condition

A total of 28 teeth are visualized within the panoramic field, with all teeth anatomically positioned and fully erupted. Wisdom teeth are present and unimpacted, including a fully erupted right mandibular third molar (tooth #18).

### 2. Pathological Findings

- A clear indication of an impacted tooth is noted near tooth #47, with radiographic evidence consistent with partial bony obstruction.
- Areas of concern for carious lesions are observed near tooth #47, with radiolucent changes suggesting early demineralization requiring further clinical correlation.

### 3. Historical Interventions

- A root canal-treated tooth is present on tooth #35, with no evidence of post-treatment complications.
- A definitive crown restoration is visible on tooth #35, indicating prior restorative intervention.

## Clinical Summary & Recommendations

### 1. Priority Concerns

- Immediate attention is required for the impacted tooth near #47, as it may necessitate surgical evaluation.
- The suspicious caries near #47 should be assessed clinically for cavity preparation or preventive measures.

### 2. Preventive Measures

- Reinforce oral hygiene protocols to mitigate caries progression on #47.
- Monitor tooth #35 crown for signs of secondary caries or marginal breakdown.

### 3. Follow-up Protocol

- Schedule a 6-month recall to reassess the impacted tooth near #47 and caries near #47.
- Referral to an oral surgeon is recommended for definitive management of the impacted tooth near #47.
- Maintain regular 6-month prophylaxis appointments to ensure overall periodontal and caries control.