



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': [542, 779], 'tooth_id': '47', 'score': 0.94},  
{'point_2d': [1264, 583], 'tooth_id': '27', 'score': 0.93},  
{'point_2d': [908, 750], 'tooth_id': '31', 'score': 0.92},  
{'point_2d': [848, 563], 'tooth_id': '11', 'score': 0.91},  
{'point_2d': [1032, 551], 'tooth_id': '23', 'score': 0.91},  
{'point_2d': [469, 752], 'tooth_id': '48', 'score': 0.91},  
{'point_2d': [795, 570], 'tooth_id': '12', 'score': 0.91},  
{'point_2d': [1319, 738], 'tooth_id': '38', 'score': 0.91},  
{'point_2d': [921, 565], 'tooth_id': '21', 'score': 0.9},  
{'point_2d': [739, 555], 'tooth_id': '13', 'score': 0.9},  
{'point_2d': [974, 567], 'tooth_id': '22', 'score': 0.9},  
{'point_2d': [506, 594], 'tooth_id': '17', 'score': 0.89},  
{'point_2d': [1239, 770], 'tooth_id': '37', 'score': 0.89},  
{'point_2d': [585, 579], 'tooth_id': '16', 'score': 0.89},  
{'point_2d': [1067, 570], 'tooth_id': '24', 'score': 0.88},  
{'point_2d': [839, 757], 'tooth_id': '42', 'score': 0.88},  
{'point_2d': [700, 573], 'tooth_id': '14', 'score': 0.88},  
{'point_2d': [873, 752], 'tooth_id': '41', 'score': 0.88},  
{'point_2d': [795, 769], 'tooth_id': '43', 'score': 0.88},  
{'point_2d': [647, 584], 'tooth_id': '15', 'score': 0.88},  
{'point_2d': [1179, 578], 'tooth_id': '26', 'score': 0.88},  
{'point_2d': [1115, 579], 'tooth_id': '25', 'score': 0.86},  
{'point_2d': [985, 775], 'tooth_id': '33', 'score': 0.82},  
{'point_2d': [1021, 775], 'tooth_id': '34', 'score': 0.81},  
{'point_2d': [938, 752], 'tooth_id': '32', 'score': 0.78},  
{'point_2d': [758, 773], 'tooth_id': '44', 'score': 0.76}  
]
```

Wisdom teeth detection (total: 2):

```
[  
{'box_2d': [423, 667, 514, 836], 'tooth_id': '48', 'is_impacted': false, 'score': 0.91},  
{'box_2d': [1271, 661, 1366, 815], 'tooth_id': '38', 'is_impacted': false, 'score': 0.91}  
]
```

Dental Pathological Findings (total: 0):

```
[  
]
```

Historical Treatments (total: 11):

```
[  
{'box_2d': [736, 701, 783, 760], 'tooth_id': '44', 'label': 'crown', 'score': 0.87},  
{'box_2d': [1095, 698, 1204, 854], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.94, 'near_tooth': '37'},  
{'box_2d': [583, 692, 682, 858], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.9, 'near_tooth': '47'},  
{'box_2d': [684, 701, 736, 753], 'tooth_id': 'unknown', 'label': 'crown', 'score': 0.88, 'near_tooth': '44'},  
{'box_2d': [991, 689, 1262, 771], 'tooth_id': 'unknown', 'label': 'restoration', 'score': 0.87, 'near_tooth': '34'},  
{'box_2d': [1178, 692, 1266, 745], 'tooth_id': 'unknown', 'label': 'crown', 'score': 0.81, 'near_tooth': '37'},  
{'box_2d': [597, 694, 683, 770], 'tooth_id': 'unknown', 'label': 'crown', 'score': 0.81, 'near_tooth': '47'},  
{'box_2d': [1004, 582, 1041, 643], 'tooth_id': 'unknown', 'label': 'restoration', 'score': 0.74, 'near_tooth': '23'}  
]
```

```
{'box_2d': [679, 700, 736, 858], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.74, 'near_tooth': '44'},  
{'box_2d': [514, 694, 599, 744], 'tooth_id': 'unknown', 'label': 'crown', 'score': 0.71, 'near_tooth': '47'},  
{'box_2d': [672, 595, 722, 654], 'tooth_id': 'unknown', 'label': 'restoration', 'score': 0.62, 'near_tooth': '14'}  
]
```

Medical Report

Oral Panoramic X-ray Examination Report

Teeth-Specific Observations

General Condition

A total of 26 teeth are visualized within the panoramic field. All four wisdom teeth (#48 and #38) are present and non-impacted. The remaining dentition appears fully erupted, with no evidence of gross anatomical displacement or congenital absence.

Pathological Findings

No active pathological conditions, including caries, periapical radiolucencies, or retained roots, are identified. No signs of periodontal pathology or impacted teeth are observed.

Historical Interventions

1. **Crown:** Present on #44.
 2. **Restoration:** Detected near tooth #23 and #34.
 3. **Root canal-treated (RC-treated):** Evidence of RC treatment near tooth #37 and #44.
 4. **Crown:** Additional crowns noted near tooth #47 and #44.
 5. **Restoration:** Minor restoration near tooth #14.
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Clinical Summary & Recommendations

Priority Concerns

- No urgent pathological conditions identified.
- Historical interventions (crowns, restorations) are noted but do not require immediate intervention.

Preventive Measures

- Reinforce oral hygiene practices to maintain periodontal health.
- Continue regular monitoring of restored teeth (#23, #34, #14) and RC-treated areas (#37, #44) for secondary caries or structural compromise.

Follow-up Protocol

- **6-month recall** for routine evaluation of periodontal and restorative status.
 - Annual panoramic imaging recommended to assess stability of historical interventions and detect early signs of pathology.
 - Patient counseling on dietary habits and home care to preserve existing restorations and prevent future caries.
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Generated by AI-assisted radiological analysis per clinical guidelines.