



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: 31):

```
[
  {'point_2d': [1225, 640], 'tooth_id': '36', 'score': 0.95},
  {'point_2d': [748, 652], 'tooth_id': '45', 'score': 0.95},
  {'point_2d': [1296, 629], 'tooth_id': '37', 'score': 0.95},
  {'point_2d': [586, 638], 'tooth_id': '47', 'score': 0.95},
  {'point_2d': [670, 647], 'tooth_id': '46', 'score': 0.94},
  {'point_2d': [554, 450], 'tooth_id': '17', 'score': 0.93},
  {'point_2d': [503, 620], 'tooth_id': '48', 'score': 0.93},
  {'point_2d': [1240, 455], 'tooth_id': '26', 'score': 0.92},
  {'point_2d': [802, 463], 'tooth_id': '13', 'score': 0.92},
  {'point_2d': [1111, 657], 'tooth_id': '34', 'score': 0.92},
  {'point_2d': [471, 459], 'tooth_id': '18', 'score': 0.92},
  {'point_2d': [1373, 604], 'tooth_id': '38', 'score': 0.92},
  {'point_2d': [704, 460], 'tooth_id': '15', 'score': 0.91},
  {'point_2d': [1151, 646], 'tooth_id': '35', 'score': 0.91},
  {'point_2d': [640, 460], 'tooth_id': '16', 'score': 0.9},
  {'point_2d': [1071, 660], 'tooth_id': '33', 'score': 0.9},
  {'point_2d': [866, 458], 'tooth_id': '12', 'score': 0.9},
  {'point_2d': [1312, 455], 'tooth_id': '27', 'score': 0.9},
  {'point_2d': [855, 652], 'tooth_id': '43', 'score': 0.9},
  {'point_2d': [798, 660], 'tooth_id': '44', 'score': 0.9},
  {'point_2d': [1041, 458], 'tooth_id': '22', 'score': 0.9},
  {'point_2d': [1086, 464], 'tooth_id': '23', 'score': 0.88},
  {'point_2d': [1127, 469], 'tooth_id': '24', 'score': 0.87},
  {'point_2d': [920, 466], 'tooth_id': '11', 'score': 0.87},
  {'point_2d': [1175, 465], 'tooth_id': '25', 'score': 0.87},
  {'point_2d': [992, 655], 'tooth_id': '31', 'score': 0.87},
  {'point_2d': [948, 651], 'tooth_id': '41', 'score': 0.85},
  {'point_2d': [1369, 446], 'tooth_id': '28', 'score': 0.84},
  {'point_2d': [981, 461], 'tooth_id': '21', 'score': 0.82},
  {'point_2d': [906, 658], 'tooth_id': '42', 'score': 0.81},
  {'point_2d': [1035, 666], 'tooth_id': '32', 'score': 0.76}
]
```

Wisdom teeth detection (total: 4):

```
[
  {'box_2d': [448, 537, 558, 702], 'tooth_id': '48', 'is_impacted': false, 'score': 0.93},
  {'box_2d': [426, 387, 516, 532], 'tooth_id': '18', 'is_impacted': false, 'score': 0.92},
  {'box_2d': [1322, 530, 1424, 679], 'tooth_id': '38', 'is_impacted': false, 'score': 0.92},
  {'box_2d': [1331, 368, 1407, 524], 'tooth_id': '28', 'is_impacted': false, 'score': 0.84}
]
```

Dental Pathological Findings (total: 3):

```
[
  {'box_2d': [443, 472, 479, 510], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.43, 'near_tooth': '18'},
  {'box_2d': [1308, 477, 1340, 510], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.35, 'near_tooth': '27'},
  {'box_2d': [1341, 451, 1395, 513], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.31, 'near_tooth': '28'}
]
```

Historical Treatments (total: 1):

```
[
```

{'box_2d': [722, 364, 789, 552], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.9, 'near_tooth': '13'}
]

Medical Report

Teeth-Specific Observations

1. General Condition

A total of 31 teeth are visualized, including all four wisdom teeth (#18, #28, #38, #48). No wisdom teeth are impacted; all are fully erupted and within expected anatomical positions.

2. Pathological Findings

- Suspicious for carious lesions near tooth #18 (upper left third molar).
- Suggestive carious involvement near tooth #27 (lower right second molar).
- Areas of concern noted for potential caries near tooth #28 (lower right third molar).

3. Historical Interventions

Presence of a root canal-treated tooth near #13 (upper left lateral incisor).

Clinical Summary & Recommendations

1. Priority Concerns

- Suspicious carious lesions near #18, #27, and #28 require urgent evaluation to confirm diagnosis and prevent progression.
- Root canal-treated tooth #13 should be monitored for signs of reinfection or secondary caries.

2. Preventive Measures

- Reinforce comprehensive oral hygiene instruction, emphasizing interproximal cleaning to prevent caries in high-risk areas.
- Implement periodic fluoride application to strengthen enamel in caries-prone regions.

3. Follow-up Protocol

- Schedule a 6-month recall for radiographic reassessment of suspicious caries near #18, #27, and #28.
- Refer to a restorative dentist for definitive treatment planning of carious lesions.
- Monitor #13 clinically and radiographically at follow-up visits for post-treatment stability.