



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: 21):

```
[
{'point_2d': [462, 400], 'tooth_id': '17', 'score': 0.94},
{'point_2d': [627, 625], 'tooth_id': '46', 'score': 0.93},
{'point_2d': [1190, 413], 'tooth_id': '27', 'score': 0.93},
{'point_2d': [950, 655], 'tooth_id': '33', 'score': 0.92},
{'point_2d': [700, 641], 'tooth_id': '45', 'score': 0.9},
{'point_2d': [537, 423], 'tooth_id': '16', 'score': 0.9},
{'point_2d': [1028, 633], 'tooth_id': '35', 'score': 0.9},
{'point_2d': [1060, 440], 'tooth_id': '25', 'score': 0.89},
{'point_2d': [930, 461], 'tooth_id': '22', 'score': 0.89},
{'point_2d': [775, 664], 'tooth_id': '43', 'score': 0.88},
{'point_2d': [987, 645], 'tooth_id': '34', 'score': 0.88},
{'point_2d': [715, 446], 'tooth_id': '13', 'score': 0.88},
{'point_2d': [813, 649], 'tooth_id': '42', 'score': 0.86},
{'point_2d': [905, 649], 'tooth_id': '32', 'score': 0.84},
{'point_2d': [872, 639], 'tooth_id': '31', 'score': 0.84},
{'point_2d': [973, 451], 'tooth_id': '23', 'score': 0.84},
{'point_2d': [838, 644], 'tooth_id': '41', 'score': 0.83},
{'point_2d': [447, 568], 'tooth_id': '48', 'score': 0.82},
{'point_2d': [735, 646], 'tooth_id': '44', 'score': 0.81},
{'point_2d': [758, 436], 'tooth_id': '12', 'score': 0.73},
{'point_2d': [804, 460], 'tooth_id': '11', 'score': 0.67}
]
```

Wisdom teeth detection (total: 1):

```
[
{'box_2d': [378, 498, 515, 638], 'tooth_id': '48', 'is_impacted': false, 'score': 0.82}
]
```

Dental Pathological Findings (total: 5):

```
[
{'box_2d': [867, 379, 903, 517], 'tooth_id': 'unknown', 'label': 'root-stump', 'score': 0.84, 'near_tooth': '22'},
{'box_2d': [1040, 478, 1061, 520], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.36, 'near_tooth': '25'},
{'box_2d': [686, 587, 723, 633], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.31, 'near_tooth': '45'},
{'box_2d': [505, 445, 527, 469], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.22, 'near_tooth': '16'},
{'box_2d': [620, 370, 726, 556], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.19, 'near_tooth': '13'}
]
```

Historical Treatments (total: 5):

```
[
{'box_2d': [500, 437, 743, 522], 'tooth_id': 'unknown', 'label': 'restoration', 'score': 0.95, 'near_tooth': '13'},
{'box_2d': [1129, 520, 1244, 667], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.92, 'near_tooth': '35'},
{'box_2d': [1042, 545, 1130, 610], 'tooth_id': 'unknown', 'label': 'crown', 'score': 0.91, 'near_tooth': '35'},
{'box_2d': [1043, 545, 1158, 695], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.89, 'near_tooth': '35'},
{'box_2d': [1130, 520, 1213, 587], 'tooth_id': 'unknown', 'label': 'crown', 'score': 0.87, 'near_tooth': '27'}
]
```

Medical Report

Oral Panoramic Radiographic Examination Report

****Teeth-Specific Observations****

General Condition

A total of 21 teeth are visualized, with the following distribution:

- Maxillary arch: 11 teeth (#11, #12, #13, #16, #17, #22, #23, #25, #27).
- Mandibular arch: 10 teeth (#31, #32, #33, #34, #35, #41, #42, #43, #44, #45, #46, #48).

Wisdom teeth: Only the right mandibular wisdom tooth (#48) is present and fully erupted, with no evidence of impaction.

Pathological Findings

1. **Sign of a root stump** noted near tooth #22.
2. **Suspicious areas of caries** identified near:
 - Tooth #25 (low confidence).
 - Tooth #45 (low confidence).
 - Tooth #16 (very low confidence).
 - Tooth #13 (very low confidence).

Historical Interventions

1. **Presence of a restoration** adjacent to tooth #13.
 2. **Root canal-treated tooth** with a **crown** on tooth #35.
 3. **Crown placement** observed near tooth #27.
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****Clinical Summary & Recommendations****

Priority Concerns

- **Root stump near #22:** Requires clinical correlation to determine if residual apical tissue remains.
- **Suspected early caries:** Near #25, #45, #16, and #13. Prioritize radiographic and tactile examination to confirm.

Preventive Measures

- Reinforce oral hygiene protocols, emphasizing interproximal cleaning near #25 and #45.
- Monitor suspicious cariogenic areas with follow-up imaging and recall.

Follow-up Protocol

- **6-month recall** for reassessment of carious lesions and root stump.
 - **Referral to endodontist** for evaluation of #35's root canal treatment success.
 - **Dental caries management** for #25 and #45: Consider preventive resin restorations or sealants if non-cavitated.
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End of Report.