



## 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

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## \*\*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.