



## 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: 19):

```
[  
{'point_2d': [1188, 661], 'tooth_id': '37', 'score': 0.94},  
{'point_2d': [545, 659], 'tooth_id': '47', 'score': 0.94},  
{'point_2d': [705, 699], 'tooth_id': '45', 'score': 0.91},  
{'point_2d': [1042, 695], 'tooth_id': '35', 'score': 0.91},  
{'point_2d': [964, 716], 'tooth_id': '33', 'score': 0.91},  
{'point_2d': [896, 711], 'tooth_id': '31', 'score': 0.91},  
{'point_2d': [1279, 613], 'tooth_id': '38', 'score': 0.89},  
{'point_2d': [761, 704], 'tooth_id': '44', 'score': 0.89},  
{'point_2d': [927, 711], 'tooth_id': '32', 'score': 0.89},  
{'point_2d': [1158, 483], 'tooth_id': '27', 'score': 0.89},  
{'point_2d': [997, 704], 'tooth_id': '34', 'score': 0.88},  
{'point_2d': [804, 714], 'tooth_id': '43', 'score': 0.87},  
{'point_2d': [839, 709], 'tooth_id': '42', 'score': 0.85},  
{'point_2d': [1027, 491], 'tooth_id': '25', 'score': 0.84},  
{'point_2d': [865, 705], 'tooth_id': '41', 'score': 0.78},  
{'point_2d': [899, 515], 'tooth_id': '22', 'score': 0.75},  
{'point_2d': [862, 522], 'tooth_id': '21', 'score': 0.73},  
{'point_2d': [832, 520], 'tooth_id': '11', 'score': 0.72},  
{'point_2d': [660, 499], 'tooth_id': '15', 'score': 0.7}  
]
```

Wisdom teeth detection (total: 1):

```
[  
{'box_2d': [1210, 536, 1349, 690], 'tooth_id': '38', 'is_impacted': false, 'score': 0.89}  
]
```

Dental Pathological Findings (total: 1):

```
[  
{'box_2d': [502, 471, 572, 561], 'tooth_id': 'unknown', 'label': 'root-stump', 'score': 0.58, 'near_tooth': '15'}  
]
```

Historical Treatments (total: 14):

```
[  
{'box_2d': [1046, 592, 1137, 656], 'tooth_id': 'unknown', 'label': 'crown', 'score': 0.92, 'near_tooth': '35'},  
{'box_2d': [921, 400, 971, 597], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.92, 'near_tooth': '22'},  
{'box_2d': [1045, 595, 1154, 760], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.91, 'near_tooth': '35'},  
{'box_2d': [921, 500, 1193, 595], 'tooth_id': 'unknown', 'label': 'restoration', 'score': 0.91, 'near_tooth': '25'},  
{'box_2d': [559, 406, 669, 585], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.9, 'near_tooth': '15'},  
{'box_2d': [684, 422, 741, 588], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.89, 'near_tooth': '15'},  
{'box_2d': [725, 409, 782, 590], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.87, 'near_tooth': '11'},  
{'box_2d': [574, 513, 668, 585], 'tooth_id': 'unknown', 'label': 'crown', 'score': 0.85, 'near_tooth': '15'},  
{'box_2d': [588, 619, 680, 758], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.84, 'near_tooth': '45'},  
{'box_2d': [688, 530, 738, 588], 'tooth_id': 'unknown', 'label': 'crown', 'score': 0.79, 'near_tooth': '15'},  
{'box_2d': [773, 412, 816, 591], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.78, 'near_tooth': '11'},  
{'box_2d': [1219, 552, 1262, 582], 'tooth_id': 'unknown', 'label': 'restoration', 'score': 0.73, 'near_tooth': '38'},  
{'box_2d': [736, 538, 784, 593], 'tooth_id': 'unknown', 'label': 'crown', 'score': 0.71, 'near_tooth': '11'},  
{'box_2d': [1140, 585, 1201, 613], 'tooth_id': 'unknown', 'label': 'restoration', 'score': 0.69, 'near_tooth': '37'}  
]
```

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# Medical Report

## Teeth-Specific Observations

### 1. General Condition

- A total of 19 teeth are visualized within the panoramic field.
- Wisdom teeth status: Tooth #38 (left lower third molar) is fully erupted and non-impacted. No evidence of impaction or other wisdom teeth (e.g., #18, #28, #48) is observed.

### 2. Pathological Findings

- **Suspicious for a root fragment or residual root stump** near tooth #15 (left upper second premolar). This finding requires further clinical correlation to confirm the nature of the radiopaque structure.

### 3. Historical Interventions

- **Evidence of a crown** adjacent to tooth #35 (right lower first molar).
  - **Root canal-treated teeth** noted near #22 (left upper first premolar), #35 (right lower first molar), #15 (left upper second premolar), and #45 (left lower second molar).
  - **Restorations** documented near #25 (left lower second premolar), #38 (left lower third molar), and #37 (right lower second molar).
  - **Crown-related structures** observed near #15 (left upper second premolar), #11 (left upper central incisor), and #35 (right lower first molar).
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## Clinical Summary & Recommendations

### 1. Priority Concerns

- **Suspicious root fragment near #15:** Requires clinical examination and possibly CBCT imaging to confirm diagnosis and rule out periapical pathology.

### 2. Preventive Measures

- Reinforce meticulous oral hygiene, particularly around #15 and adjacent teeth with prior restorations.
- Monitor radiopaque structures near #11 and #15 for signs of recurrent caries or secondary infection.

### 3. Follow-up Protocol

- **6-month recall** for radiographic reassessment of the suspicious root fragment near #15.
  - **Referral to endodontist** for further evaluation of root-treated teeth (#22, #35, #15, #45) to confirm treatment outcomes.
  - **Dentist consultation** for functional assessment of crowns near #35, #15, and #11.
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\*FDI tooth numbering system applied throughout.\*