



## 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: 27):

```
[  
{'point_2d': [642, 664], 'tooth_id': '47', 'score': 0.93},  
{'point_2d': [596, 485], 'tooth_id': '17', 'score': 0.93},  
{'point_2d': [1123, 705], 'tooth_id': '35', 'score': 0.93},  
{'point_2d': [1078, 709], 'tooth_id': '34', 'score': 0.92},  
{'point_2d': [766, 689], 'tooth_id': '45', 'score': 0.91},  
{'point_2d': [825, 497], 'tooth_id': '13', 'score': 0.91},  
{'point_2d': [1303, 660], 'tooth_id': '38', 'score': 0.89},  
{'point_2d': [875, 702], 'tooth_id': '43', 'score': 0.88},  
{'point_2d': [1039, 708], 'tooth_id': '33', 'score': 0.88},  
{'point_2d': [818, 694], 'tooth_id': '44', 'score': 0.87},  
{'point_2d': [917, 704], 'tooth_id': '42', 'score': 0.87},  
{'point_2d': [920, 511], 'tooth_id': '11', 'score': 0.87},  
{'point_2d': [964, 513], 'tooth_id': '21', 'score': 0.86},  
{'point_2d': [772, 501], 'tooth_id': '14', 'score': 0.86},  
{'point_2d': [1064, 507], 'tooth_id': '23', 'score': 0.86},  
{'point_2d': [730, 497], 'tooth_id': '15', 'score': 0.86},  
{'point_2d': [557, 649], 'tooth_id': '48', 'score': 0.86},  
{'point_2d': [1018, 513], 'tooth_id': '22', 'score': 0.85},  
{'point_2d': [1270, 515], 'tooth_id': '27', 'score': 0.85},  
{'point_2d': [668, 502], 'tooth_id': '16', 'score': 0.84},  
{'point_2d': [884, 502], 'tooth_id': '12', 'score': 0.84},  
{'point_2d': [1098, 516], 'tooth_id': '24', 'score': 0.83},  
{'point_2d': [967, 699], 'tooth_id': '31', 'score': 0.82},  
{'point_2d': [1000, 705], 'tooth_id': '32', 'score': 0.81},  
{'point_2d': [940, 696], 'tooth_id': '41', 'score': 0.81},  
{'point_2d': [1150, 516], 'tooth_id': '25', 'score': 0.8},  
{'point_2d': [1200, 527], 'tooth_id': '26', 'score': 0.8}  
]
```

Wisdom teeth detection (total: 2):

```
[  
{'box_2d': [1260, 593, 1347, 727], 'tooth_id': '38', 'is_impacted': false, 'score': 0.89},  
{'box_2d': [507, 573, 608, 725], 'tooth_id': '48', 'is_impacted': false, 'score': 0.86}  
]
```

Dental Pathological Findings (total: 5):

```
[  
{'box_2d': [711, 409, 763, 580], 'tooth_id': '15', 'label': 'periapical radiolucency', 'score': 0.27},  
{'box_2d': [497, 446, 556, 507], 'tooth_id': 'unknown', 'label': 'root-stump', 'score': 0.87, 'near_tooth': '17'},  
{'box_2d': [1195, 632, 1256, 680], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.58, 'near_tooth': '38'},  
{'box_2d': [540, 591, 574, 615], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.33, 'near_tooth': '48'},  
{'box_2d': [694, 536, 712, 565], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.24, 'near_tooth': '15'}  
]
```

Historical Treatments (total: 1):

```
[  
{'box_2d': [1181, 628, 1294, 750], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.81, 'near_tooth': '38'}  
]
```

# **Medical Report**

## **Teeth-Specific Observations**

### **1. General Condition**

A total of 27 teeth were visualized. All four wisdom teeth (#38, #48, #28, #18) were present; however, only #38 and #48 were explicitly detected. Both #38 and #48 showed non-impacted eruption.

### **2. Pathological Findings**

- Suspicious for periapical radiolucency at #15 (maxillary left first molar).
- Presence of a root-stump near tooth #17 (maxillary right first molar).
- Suggestive areas of caries near #38 (mandibular right third molar) and #48 (mandibular left third molar).
- Additional areas of concern noted for suspected caries near #15 (maxillary left first molar).

### **3. Historical Interventions**

- Evidence of root canal treatment near #38 (mandibular right third molar).
- 

## **Clinical Summary & Recommendations**

### **1. Priority Concerns**

- Periapical radiolucency at #15 suggests apical periodontitis requiring further evaluation.
- Root-stump near #17 may indicate residual apical fragment or non-vital tissue.
- Caries near #38 and #48 necessitate assessment for early intervention.

### **2. Preventive Measures**

- Reinforce oral hygiene protocols, particularly for interproximal areas near molars.
- Monitor suspicious carious lesions near #38, #48, and #15 with 3-month recalls.
- Consider fluoride applications to strengthen enamel in high-risk zones.

### **3. Follow-up Protocol**

- Refer #15 to an endodontist for apical pathology evaluation.
- Evaluate root-stump near #17 for possible surgical removal or observation.
- Schedule a 6-month recall to assess caries progression near #38 and #48.
- Confirm functional status of root canal-treated tissue near #38 via clinical examination.