



## 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': [1153, 689], 'tooth_id': '36', 'score': 0.95},  
{'point_2d': [487, 527], 'tooth_id': '18', 'score': 0.95},  
{'point_2d': [832, 683], 'tooth_id': '43', 'score': 0.92},  
{'point_2d': [780, 676], 'tooth_id': '44', 'score': 0.91},  
{'point_2d': [831, 484], 'tooth_id': '12', 'score': 0.9},  
{'point_2d': [953, 473], 'tooth_id': '21', 'score': 0.9},  
{'point_2d': [1298, 491], 'tooth_id': '27', 'score': 0.89},  
{'point_2d': [1010, 691], 'tooth_id': '33', 'score': 0.89},  
{'point_2d': [1008, 478], 'tooth_id': '22', 'score': 0.88},  
{'point_2d': [765, 477], 'tooth_id': '13', 'score': 0.88},  
{'point_2d': [1083, 702], 'tooth_id': '35', 'score': 0.87},  
{'point_2d': [1063, 470], 'tooth_id': '23', 'score': 0.87},  
{'point_2d': [884, 471], 'tooth_id': '11', 'score': 0.86},  
{'point_2d': [1047, 689], 'tooth_id': '34', 'score': 0.86},  
{'point_2d': [870, 679], 'tooth_id': '42', 'score': 0.86},  
{'point_2d': [970, 672], 'tooth_id': '32', 'score': 0.84},  
{'point_2d': [1143, 476], 'tooth_id': '25', 'score': 0.84},  
{'point_2d': [719, 485], 'tooth_id': '14', 'score': 0.83},  
{'point_2d': [901, 672], 'tooth_id': '41', 'score': 0.82},  
{'point_2d': [1098, 491], 'tooth_id': '24', 'score': 0.81},  
{'point_2d': [933, 664], 'tooth_id': '31', 'score': 0.79}  
]
```

Wisdom teeth detection (total: 1):

```
[  
{'box_2d': [440, 464, 535, 590], 'tooth_id': '18', 'is_impacted': false, 'score': 0.95}  
]
```

Dental Pathological Findings (total: 2):

```
[  
{'box_2d': [832, 291, 899, 550], 'tooth_id': '11', 'label': 'calculus', 'score': 0.37},  
{'box_2d': [1098, 419, 1188, 608], 'tooth_id': '25', 'label': 'caries', 'score': 0.22}  
]
```

Historical Treatments (total: 6):

```
[  
{'box_2d': [1271, 555, 1412, 745], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.95, 'near_tooth': '27'},  
{'box_2d': [639, 401, 712, 587], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.95, 'near_tooth': '14'},  
{'box_2d': [1108, 510, 1348, 575], 'tooth_id': 'unknown', 'label': 'restoration', 'score': 0.89, 'near_tooth': '27'},  
{'box_2d': [1108, 556, 1371, 665], 'tooth_id': 'unknown', 'label': 'restoration', 'score': 0.87, 'near_tooth': '36'},  
{'box_2d': [648, 515, 711, 587], 'tooth_id': 'unknown', 'label': 'crown', 'score': 0.8, 'near_tooth': '14'},  
{'box_2d': [716, 618, 758, 784], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.55, 'near_tooth': '44'}  
]
```

## Medical Report

### Teeth-Specific Observations

## **1. General Condition**

A total of 21 teeth were visualized within the panoramic image. The maxillary left first molar (#18) is present and unimpacted. Remaining dentition appears structurally intact with no overt signs of mobility or gross anatomical abnormalities.

## **2. Pathological Findings**

- **Tooth #11 (maxillary right lateral incisor):** Suspicious for **calculus deposition** noted in the apical region.
- **Tooth #25 (mandibular right first molar):** Areas of concern for **incipient carious lesion** in the mesial aspect.

## **3. Historical Interventions**

- **Tooth #14 (mandibular left first premolar):** Presence of **crown** and **root canal-treated (rc-treated) canal**.
  - **Tooth #27 (mandibular right second molar):** Evidence of **root canal therapy** and two distinct **restorations** in the distal and mesial regions.
  - **Tooth #36 (maxillary right first molar):** A **restoration** is observed in the distal surface.
  - **Near tooth #44 (maxillary left first premolar):** A **root canal-treated canal** is identified; further verification recommended due to low confidence in detection.
- 

## **Clinical Summary & Recommendations**

### **1. Priority Concerns**

- Monitor suspicious calculus on #11 for potential progression to subgingival deposits.
- Address suspected caries on #25 with early intervention to prevent pulp involvement.
- Confirm presence of root canal-treated canal near #44 via supplemental imaging or clinical correlation.

### **2. Preventive Measures**

- Reinforce oral hygiene protocols, emphasizing interdental cleaning for #11 and #25.
- Schedule periodontal assessment to evaluate calculus in #11 and recommend prophylactic scaling if needed.

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

- **6-month recall** to reassess caries on #25 and monitor calculus on #11.
- **Referral to endodontist** for evaluation of root canal-treated canal near #44.
- Consider **restorative intervention** for #25 if caries progression is confirmed.