



## 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': [551, 518], 'tooth_id': '45', 'score': 0.96},  
{'point_2d': [934, 302], 'tooth_id': '25', 'score': 0.92},  
{'point_2d': [525, 321], 'tooth_id': '15', 'score': 0.92},  
{'point_2d': [378, 309], 'tooth_id': '18', 'score': 0.92},  
{'point_2d': [679, 499], 'tooth_id': '42', 'score': 0.9},  
{'point_2d': [1039, 463], 'tooth_id': '37', 'score': 0.89},  
{'point_2d': [657, 319], 'tooth_id': '12', 'score': 0.89},  
{'point_2d': [833, 299], 'tooth_id': '23', 'score': 0.89},  
{'point_2d': [615, 302], 'tooth_id': '13', 'score': 0.88},  
{'point_2d': [596, 517], 'tooth_id': '44', 'score': 0.88},  
{'point_2d': [749, 313], 'tooth_id': '21', 'score': 0.88},  
{'point_2d': [707, 332], 'tooth_id': '11', 'score': 0.86},  
{'point_2d': [789, 306], 'tooth_id': '22', 'score': 0.85},  
{'point_2d': [577, 324], 'tooth_id': '14', 'score': 0.84},  
{'point_2d': [888, 309], 'tooth_id': '24', 'score': 0.84},  
{'point_2d': [637, 527], 'tooth_id': '43', 'score': 0.76},  
{'point_2d': [739, 488], 'tooth_id': '31', 'score': 0.72},  
{'point_2d': [907, 513], 'tooth_id': '35', 'score': 0.69},  
{'point_2d': [709, 479], 'tooth_id': '41', 'score': 0.65}  
]
```

Wisdom teeth detection (total: 1):

```
[  
{'box_2d': [344, 236, 411, 382], 'tooth_id': '18', 'is_impacted': false, 'score': 0.92}  
]
```

Dental Pathological Findings (total: 3):

```
[  
{'box_2d': [1054, 279, 1110, 332], 'tooth_id': 'unknown', 'label': 'root-stump', 'score': 0.94, 'near_tooth': '25'},  
{'box_2d': [991, 281, 1046, 339], 'tooth_id': 'unknown', 'label': 'root-stump', 'score': 0.88, 'near_tooth': '25'},  
{'box_2d': [909, 327, 921, 344], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.19, 'near_tooth': '24'}  
]
```

Historical Treatments (total: 0):

```
[  
]
```

## Medical Report

### Teeth-Specific Observations

#### 1. General Condition

- A total of 19 teeth are visualized in the panoramic image.
- Wisdom teeth (third molars) are partially represented: tooth #18 (left mandibular third molar) is present and unimpacted. No other wisdom teeth are detected.

## **2. Pathological Findings**

- Clear indication of root stumps near tooth #25 (right maxillary second molar), consistent with prior extraction or resorption.
- Additional root stumps adjacent to tooth #25 are observed, suggesting residual bony spicules or incomplete removal.
- Suspicious for early enamel caries near tooth #24 (right maxillary first molar); further diagnostic evaluation is warranted due to low confidence in this finding.

## **3. Historical Interventions**

- No evidence of prior dental treatments (restorations, crowns, root canal therapy, or implants) is identified in the imaging.
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## **Clinical Summary & Recommendations**

### **1. Priority Concerns**

- Root stumps near tooth #25 require clinical evaluation to assess their impact on adjacent structures or potential for infection.
- Suspected caries near tooth #24 necessitates confirmation via additional imaging or clinical examination to prevent progression.

### **2. Preventive Measures**

- Reinforce oral hygiene protocols, emphasizing interproximal cleaning for the right maxillary molars (#24 and #25).
- Monitor for signs of periodontal inflammation or calculus accumulation in the posterior regions.

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

- Refer to a specialist (e.g., oral surgeon or periodontist) for management of root stumps near #25.
- Schedule a 6-month recall for reassessment of caries suspicion near #24 and to evaluate overall periodontal health.
- Provide patient education on caries prevention, including dietary modifications and fluoride application.