



## 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: 28):

```
[  
{'point_2d': [461, 570], 'tooth_id': '47', 'score': 0.95},  
{'point_2d': [569, 598], 'tooth_id': '46', 'score': 0.94},  
{'point_2d': [654, 628], 'tooth_id': '45', 'score': 0.94},  
{'point_2d': [454, 364], 'tooth_id': '17', 'score': 0.94},  
{'point_2d': [1038, 664], 'tooth_id': '35', 'score': 0.93},  
{'point_2d': [553, 389], 'tooth_id': '16', 'score': 0.92},  
{'point_2d': [370, 361], 'tooth_id': '18', 'score': 0.92},  
{'point_2d': [984, 665], 'tooth_id': '34', 'score': 0.9},  
{'point_2d': [632, 404], 'tooth_id': '15', 'score': 0.89},  
{'point_2d': [1130, 461], 'tooth_id': '26', 'score': 0.88},  
{'point_2d': [717, 620], 'tooth_id': '44', 'score': 0.88},  
{'point_2d': [760, 628], 'tooth_id': '43', 'score': 0.87},  
{'point_2d': [739, 433], 'tooth_id': '13', 'score': 0.87},  
{'point_2d': [946, 672], 'tooth_id': '33', 'score': 0.86},  
{'point_2d': [1196, 464], 'tooth_id': '27', 'score': 0.86},  
{'point_2d': [1020, 467], 'tooth_id': '24', 'score': 0.86},  
{'point_2d': [1071, 465], 'tooth_id': '25', 'score': 0.84},  
{'point_2d': [794, 439], 'tooth_id': '12', 'score': 0.82},  
{'point_2d': [978, 478], 'tooth_id': '23', 'score': 0.82},  
{'point_2d': [1265, 459], 'tooth_id': '28', 'score': 0.8},  
{'point_2d': [903, 648], 'tooth_id': '32', 'score': 0.79},  
{'point_2d': [900, 472], 'tooth_id': '21', 'score': 0.79},  
{'point_2d': [936, 471], 'tooth_id': '22', 'score': 0.77},  
{'point_2d': [810, 645], 'tooth_id': '42', 'score': 0.76},  
{'point_2d': [676, 418], 'tooth_id': '14', 'score': 0.72},  
{'point_2d': [842, 639], 'tooth_id': '41', 'score': 0.71},  
{'point_2d': [871, 656], 'tooth_id': '31', 'score': 0.68},  
{'point_2d': [836, 461], 'tooth_id': '11', 'score': 0.68}  
]
```

Wisdom teeth detection (total: 2):

```
[  
{'box_2d': [314, 277, 425, 444], 'tooth_id': '18', 'is_impacted': false, 'score': 0.92},  
{'box_2d': [1230, 395, 1301, 523], 'tooth_id': '28', 'is_impacted': false, 'score': 0.8}  
]
```

Dental Pathological Findings (total: 2):

```
[  
{'box_2d': [887, 414, 994, 573], 'tooth_id': '23', 'label': 'calculus', 'score': 0.38},  
{'box_2d': [253, 470, 424, 615], 'tooth_id': 'unknown', 'label': 'impacted', 'score': 0.91, 'near_tooth': '47'}  
]
```

Historical Treatments (total: 3):

```
[  
{'box_2d': [492, 416, 615, 475], 'tooth_id': '16', 'label': 'crown', 'score': 0.76},  
{'box_2d': [1062, 568, 1138, 620], 'tooth_id': 'unknown', 'label': 'crown', 'score': 0.93, 'near_tooth': '35'},  
{'box_2d': [1061, 568, 1148, 723], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.84, 'near_tooth': '35'}  
]
```

# Medical Report

## Teeth-Specific Observations

### General Condition

A total of 28 teeth are visualized within the panoramic image. Wisdom teeth status includes two detected teeth: tooth #18 (upper left first molar) and #28 (upper left third molar), both unimpacted. No immediate signs of missing posterior teeth are observed.

### Pathological Findings

- A suspicious area of **calculus** is noted on tooth #23 (upper left first molar) based on radiographic density.
- A clear indication of an **impacted tooth** is observed near tooth #47 (lower left first molar), likely representing a horizontal impaction or resorption risk.

### Historical Interventions

- A **crown** is present on tooth #16 (upper left second molar).
  - A **crown** is detected near tooth #35 (lower right first molar), with radiographic evidence of **root canal treatment (RC-treated)** on the adjacent structure.
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## Clinical Summary & Recommendations

### Priority Concerns

1. **Impacted tooth near #47:** Requires evaluation to assess resorption risks and surgical planning.
2. **Suspected calculus on #23:** Indicates potential periodontal risk requiring