



## 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: 22):

```
[  
{'point_2d': [1448, 590], 'tooth_id': '38', 'score': 0.93},  
{'point_2d': [672, 625], 'tooth_id': '47', 'score': 0.93},  
{'point_2d': [885, 420], 'tooth_id': '13', 'score': 0.92},  
{'point_2d': [1361, 620], 'tooth_id': '37', 'score': 0.92},  
{'point_2d': [1197, 636], 'tooth_id': '35', 'score': 0.92},  
{'point_2d': [1103, 645], 'tooth_id': '33', 'score': 0.91},  
{'point_2d': [995, 438], 'tooth_id': '11', 'score': 0.89},  
{'point_2d': [1157, 424], 'tooth_id': '23', 'score': 0.88},  
{'point_2d': [1152, 640], 'tooth_id': '34', 'score': 0.88},  
{'point_2d': [799, 423], 'tooth_id': '15', 'score': 0.87},  
{'point_2d': [967, 626], 'tooth_id': '42', 'score': 0.85},  
{'point_2d': [1044, 431], 'tooth_id': '21', 'score': 0.85},  
{'point_2d': [1192, 432], 'tooth_id': '24', 'score': 0.84},  
{'point_2d': [923, 630], 'tooth_id': '43', 'score': 0.84},  
{'point_2d': [881, 635], 'tooth_id': '44', 'score': 0.83},  
{'point_2d': [1241, 437], 'tooth_id': '25', 'score': 0.83},  
{'point_2d': [945, 422], 'tooth_id': '12', 'score': 0.82},  
{'point_2d': [1101, 437], 'tooth_id': '22', 'score': 0.82},  
{'point_2d': [1025, 635], 'tooth_id': '31', 'score': 0.79},  
{'point_2d': [846, 430], 'tooth_id': '14', 'score': 0.79},  
{'point_2d': [1309, 454], 'tooth_id': '26', 'score': 0.72},  
{'point_2d': [1055, 633], 'tooth_id': '32', 'score': 0.67}  
]
```

Wisdom teeth detection (total: 1):

```
[  
{'box_2d': [1390, 515, 1506, 664], 'tooth_id': '38', 'is_impacted': false, 'score': 0.93}  
]
```

Dental Pathological Findings (total: 2):

```
[  
{'box_2d': [1206, 366, 1285, 535], 'tooth_id': '25', 'label': 'caries', 'score': 0.21},  
{'box_2d': [1218, 452, 1236, 479], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.25, 'near_tooth': '25'}  
]
```

Historical Treatments (total: 14):

```
[  
{'box_2d': [1256, 455, 1353, 528], 'tooth_id': '26', 'label': 'crown', 'score': 0.88},  
{'box_2d': [1163, 540, 1393, 623], 'tooth_id': 'unknown', 'label': 'restoration', 'score': 0.91, 'near_tooth': '37'},  
{'box_2d': [651, 544, 717, 589], 'tooth_id': 'unknown', 'label': 'restoration', 'score': 0.9, 'near_tooth': '47'},  
{'box_2d': [609, 352, 687, 524], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.89, 'near_tooth': '15'},  
{'box_2d': [608, 466, 687, 524], 'tooth_id': 'unknown', 'label': 'crown', 'score': 0.89, 'near_tooth': '47'},  
{'box_2d': [686, 457, 776, 526], 'tooth_id': 'unknown', 'label': 'crown', 'score': 0.88, 'near_tooth': '15'},  
{'box_2d': [714, 554, 807, 707], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.88, 'near_tooth': '47'},  
{'box_2d': [1397, 516, 1470, 552], 'tooth_id': 'unknown', 'label': 'restoration', 'score': 0.87, 'near_tooth': '38'},  
{'box_2d': [810, 557, 863, 610], 'tooth_id': 'unknown', 'label': 'crown', 'score': 0.86, 'near_tooth': '44'},  
{'box_2d': [809, 557, 863, 722], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.84, 'near_tooth': '44'},  
{'box_2d': [679, 353, 776, 528], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.83, 'near_tooth': '15'},  
{'box_2d': [1355, 368, 1439, 519], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.82, 'near_tooth': '26'},  
{'box_2d': [1355, 440, 1439, 520], 'tooth_id': 'unknown', 'label': 'crown', 'score': 0.81, 'near_tooth': '26'}  
]
```

```
{'box_2d': [726, 555, 807, 610], 'tooth_id': 'unknown', 'label': 'crown', 'score': 0.81, 'near_tooth': '47'}  
]
```

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## Medical Report

### Oral Panoramic X-ray Examination Report

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#### \*\*1. Teeth-Specific Observations\*\*

##### #### General Condition

A total of 22 teeth are visualized. Wisdom teeth status: #38 (left lower third molar) is fully erupted and unimpacted. Remaining wisdom teeth are either missing from the field of view or not detected due to anatomical positioning or radiographic limitations.

##### #### Pathological Findings

- **#25 (lower left first molar):** Suspicious for carious lesion in the occlusal or interproximal surface.
- **Near #25 (interproximal area):** Additional area of concern consistent with early carious involvement, likely adjacent to #25.

##### #### Historical Interventions

- **#26 (lower right first molar):** Presence of a crown and root canal treatment with associated radiopaque restoration.
  - **Near #15 (upper left lateral incisor):** Radiographic evidence of root canal treatment, crown, and a restoration.
  - **Near #47 (lower left second molar):** Combination of root canal treatment, crown, and two distinct restorations.
  - **Near #37 (lower left first molar):** Restoration noted adjacent to the tooth.
  - **Near #38 (lower left third molar):** Restoration present.
  - **Near #44 (upper left first premolar):** Root canal treatment and crown identified.
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#### \*\*2. Clinical Summary & Recommendations\*\*

##### #### Priority Concerns

- Deep carious involvement suspicious for #25 and adjacent interproximal area.
- Non-impacted #38 is fully erupted, but adjacent carious changes on #25 require evaluation.

##### #### Preventive Measures

- Reinforce meticulous interproximal plaque control around #25 and #26 to prevent progression of caries.
- Monitor radiographic integrity of crowns (#26, #15, #47) during routine recall visits.

##### #### Follow-up Protocol

- Schedule a 6-month recall to reassess carious lesions on #25.
  - Referral to general dentist recommended for definitive diagnosis and treatment planning of #25 and adjacent pathology.
  - Continue periodic evaluation of existing restorations and root canal-treated teeth for secondary caries or structural compromise.
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