



## 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: 32):

```
[
{'point_2d': [974, 425], 'tooth_id': '23', 'score': 0.95},
{'point_2d': [1067, 656], 'tooth_id': '36', 'score': 0.94},
{'point_2d': [1238, 631], 'tooth_id': '38', 'score': 0.94},
{'point_2d': [662, 646], 'tooth_id': '45', 'score': 0.93},
{'point_2d': [512, 638], 'tooth_id': '47', 'score': 0.93},
{'point_2d': [1152, 663], 'tooth_id': '37', 'score': 0.93},
{'point_2d': [707, 424], 'tooth_id': '13', 'score': 0.93},
{'point_2d': [601, 638], 'tooth_id': '46', 'score': 0.93},
{'point_2d': [879, 423], 'tooth_id': '21', 'score': 0.93},
{'point_2d': [1010, 663], 'tooth_id': '35', 'score': 0.92},
{'point_2d': [1182, 469], 'tooth_id': '27', 'score': 0.91},
{'point_2d': [660, 428], 'tooth_id': '14', 'score': 0.91},
{'point_2d': [922, 423], 'tooth_id': '22', 'score': 0.91},
{'point_2d': [483, 441], 'tooth_id': '17', 'score': 0.91},
{'point_2d': [1249, 465], 'tooth_id': '28', 'score': 0.9},
{'point_2d': [554, 441], 'tooth_id': '16', 'score': 0.9},
{'point_2d': [436, 603], 'tooth_id': '48', 'score': 0.9},
{'point_2d': [746, 651], 'tooth_id': '43', 'score': 0.9},
{'point_2d': [967, 647], 'tooth_id': '34', 'score': 0.9},
{'point_2d': [1115, 474], 'tooth_id': '26', 'score': 0.89},
{'point_2d': [923, 655], 'tooth_id': '33', 'score': 0.89},
{'point_2d': [605, 433], 'tooth_id': '15', 'score': 0.89},
{'point_2d': [851, 625], 'tooth_id': '31', 'score': 0.88},
{'point_2d': [887, 632], 'tooth_id': '32', 'score': 0.88},
{'point_2d': [792, 628], 'tooth_id': '42', 'score': 0.87},
{'point_2d': [809, 424], 'tooth_id': '11', 'score': 0.87},
{'point_2d': [1057, 454], 'tooth_id': '25', 'score': 0.86},
{'point_2d': [764, 422], 'tooth_id': '12', 'score': 0.86},
{'point_2d': [417, 431], 'tooth_id': '18', 'score': 0.86},
{'point_2d': [707, 637], 'tooth_id': '44', 'score': 0.85},
{'point_2d': [1012, 434], 'tooth_id': '24', 'score': 0.83},
{'point_2d': [822, 624], 'tooth_id': '41', 'score': 0.82}
]
```

Wisdom teeth detection (total: 4):

```
[
{'box_2d': [1183, 549, 1293, 714], 'tooth_id': '38', 'is_impacted': false, 'score': 0.94},
{'box_2d': [1212, 386, 1286, 544], 'tooth_id': '28', 'is_impacted': false, 'score': 0.9},
{'box_2d': [383, 531, 489, 674], 'tooth_id': '48', 'is_impacted': false, 'score': 0.9},
{'box_2d': [382, 355, 451, 507], 'tooth_id': '18', 'is_impacted': false, 'score': 0.86}
]
```

Dental Pathological Findings (total: 0):

```
[
]
```

Historical Treatments (total: 0):

```
[
]
```

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# Medical Report

## Teeth-Specific Observations

### 1. General Condition

A total of 32 teeth are visualized with clear center point localization. All four wisdom teeth (#18, #28, #38, #48) are present and non-impacted, fully erupted within their respective arches. No visible dental implants or structural abnormalities are noted in the panoramic field.

### 2. Pathological Findings

No active carious lesions, periapical radiolucencies, or periodontal pathologies are identified. No signs of impacted teeth, abscesses, or bone resorption are observed in the imaging dataset.

### 3. Historical Interventions

No prior restorative treatments (fillings, crowns), root canal therapies, or prosthetic interventions are documented in the provided localization data.

## Clinical Summary & Recommendations

### 1. Priority Concerns

No significant pathological or carious conditions requiring immediate intervention are detected. All wisdom teeth (#18, #28, #38, #48) are fully erupted and non-impacted; no signs of pericoronitis or follicular cysts are evident.

### 2. Preventive Measures

Reinforce daily interdental cleaning practices (e.g., flossing, interproximal brushes) to maintain periodontal health. Emphasize fluoride-based oral hygiene routines to prevent future cariogenic risk, particularly in posterior regions.

### 3. Follow-up Protocol

Schedule a routine 6-month recall for panoramic imaging and clinical evaluation to monitor for emerging pathologies. No referral to specialists is indicated at this time. Continue annual oral cancer screening as part of standard preventive care.