



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: 5):

```
[{'point_2d': [796, 691], 'tooth_id': '43', 'score': 0.88},
{'point_2d': [701, 686], 'tooth_id': '45', 'score': 0.88},
{'point_2d': [748, 693], 'tooth_id': '44', 'score': 0.84},
{'point_2d': [819, 518], 'tooth_id': '12', 'score': 0.76},
{'point_2d': [870, 523], 'tooth_id': '11', 'score': 0.7}]
```

Wisdom teeth detection (total: 0):

```
[]
```

Dental Pathological Findings (total: 5):

```
[{'box_2d': [1019, 620, 1100, 736], 'tooth_id': 'unknown', 'label': 'root-stump', 'score': 0.96, 'near_tooth': '11'},
{'box_2d': [1041, 422, 1126, 523], 'tooth_id': 'unknown', 'label': 'root-stump', 'score': 0.95, 'near_tooth': '11'},
{'box_2d': [542, 463, 630, 545], 'tooth_id': 'unknown', 'label': 'root-stump', 'score': 0.91, 'near_tooth': '45'},
{'box_2d': [940, 611, 1036, 759], 'tooth_id': 'unknown', 'label': 'root-stump', 'score': 0.87, 'near_tooth': '43'},
{'box_2d': [729, 430, 788, 569], 'tooth_id': 'unknown', 'label': 'root-stump', 'score': 0.46, 'near_tooth': '12'}]
```

Historical Treatments (total: 2):

```
[{'box_2d': [944, 495, 1014, 582], 'tooth_id': 'unknown', 'label': 'crown', 'score': 0.82, 'near_tooth': '11'},
{'box_2d': [889, 505, 947, 585], 'tooth_id': 'unknown', 'label': 'crown', 'score': 0.77, 'near_tooth': '11'}]
```

Medical Report

Teeth-Specific Observations

1. General Condition

A total of five teeth are visualized in the panoramic image, corresponding to FDI numbers #11, #12, #43, #44, and #45. No wisdom teeth (third molars) are detectable in the field of view.

2. Pathological Findings

- Clear indication of root stumps near tooth #11 (buccal/lingual aspect) and near tooth #45.
- Suspicious areas of concern for residual root stumps adjacent to tooth #12.
- Evidence of root stumps near tooth #43 with high confidence.
- Areas of concern noted for possible residual root fragments near tooth #12 requiring further evaluation.

3. Historical Interventions

Presence of two dental crowns positioned near tooth #11, consistent with prior restorative treatment.

Clinical Summary & Recommendations

1. Priority Concerns

- Root stumps identified near teeth #11, #43, and #45 suggest prior extraction(s) or incomplete root resorption.
- Suspicious radiopaque structures adjacent to tooth #12 warrant investigation for residual root fragments or calcified lesions.

2. Preventive Measures

- Reinforce oral hygiene protocols to minimize periodontal complications in areas adjacent to root stumps.
- Monitor for signs of infection (e.g., radiolucency, swelling) near residual root fragments.

3. Follow-up Protocol

- Referral to an endodontist or periodontist for evaluation of root stumps near teeth #11, #43, and #45.
- Immediate clinical examination of the suspicious area near tooth #12 to confirm or rule out calcified lesions.
- 6-month recall for panoramic imaging to assess stability of residual structures and monitor for pathologic changes.