Dental caries and the assessment of restorations

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Classification

- Pit or fissure
- Smooth Surface
- Recurrent
Diagnostic methods

- Direct vision of clean dry teeth
- Gentle probing
- Transillumination
- Radiographic examination
Approximal caries
Approximal caries
Recurrent caries
Gross caries
Occlusal and Approximal caries
Types of radiograph

- Bitewings
- Periapicals
- O.P.G.’s
Caries and other shadows

- Radiolucent Cervical Burnout

- Radiopaque zone beneath restorations
Radiolucent Cervical Burnout

- Often evident at the neck of teeth
- Artefactual
- Created by anatomy of tooth and variable penetration of x-ray beam
Burnout effect

- Crown
dense enamel cap & dentine
- Neck
Only dentine
- Root
dentine and alveolar bone
Distinction of Burnout

- Located at neck of teeth
- Generally triangular in shape
- Demarcated by enamel cap and bone
- Usually apparent on most if not all teeth in view
Points of note

- Burnout is more obvious with increased exposure factors
- More apparent adjacent to metal restorations
Radiopaque zone

- Due to release of tin and zinc from amalgam
- Follows “S” shape of tubules
- Often associated with secondary dentine formation
Limitations of radiographs

- Carious lesions usually larger than on film
- Technique can affect reliability
- Exposure factors influence the results
- Superimposition can give a false results
Restorations

- Type of material
- Contours
- Ledges
- Negative or reverse ledges
- Adaptation to cavity
- Marginal fit
- Lining materials
- Radiodensity of restoratives.
Assessment of Tooth

- Recurrent caries
- Residual caries
- Radiopaque shadows from zinc and tin
- Size of pulp chamber
- Resorption
- Root fillings
- Pins and posts
Guidelines for interpretation

- Technique
- Exposure
- Processing
technique

- Are all teeth shown
- Are crowns of upper and lower teeth visible
- Is occlusal plane horizontal
- Are contact areas clear
- Any coning off or cutting
- Are buccal and lingual cusps overlapped
- Is geometry comparable to previous films
Exposure Factors

- Is image too dark
- Is image too light
- Is exposure adequate to allow A.D.J. to be seen
- What effects has exposure had on image
- How noticeable is cervical burnout.
Processing

- Is radiograph correctly processed
- Is it overdeveloped
- Is it underdeveloped
- Is it correctly fixed
- Has it been adequately washed
Viewing - Crown

- Trace outline of crown
- Trace outline of A.D.J.
- Note any alterations in outline
- Note any alterations in density
- Note presence of restorations and quality
- Trace outline of pulp chamber
Viewing - Root

- Trace cervical 1/3 of root/crown
- Note any alterations in outline
- Check root surface
- Check outline
- Check width of P.M.