USE OF CBCT IN PEDIATRICS

ARE GUIDELINES NECESSARY FOR THE USE OF CONE BEAM COMPUTED TOMOGRAPHY IN THE PEDIATRIC POPULATION?

Docteur Milicevic Mladen
Radiologist, University Hospital of Liege – BELGIUM
E-mail: mladen.milicevic@chuliege.be
In the last years significant increase of CBCT examinations in pediatric population

In DMFR, pediatric population was rarely in collimation of pediatric radiologists

Delivered doses in extra hospital dentistry were never been counted with doses delivered in imaging departments
– Bad understanding of the risk implications of higher doses than panoramic X-ray or intra oral X-ray
– Size of the region, bone and soft tissues pathologies
– Lack of standardization of Radiation Dosimetry for CBCT
– Only by effective dose (mSv) !!!
- Indications – Dentistry and DMF Surgery
  - Teeth development evaluation
  - Assessment of craniofacial morphology
  - Sleep disordered breathing symptoms
  - Fractures, TMJ bone disorders, cleft lip and palate evaluation, neoplastic lesions
Odontoma mesiodens.

Hyperdontia.
Bilateral nasopalatine cleft.

Central giant cell granuloma.
- Atypical presentation of acute sinusitis
- Neurologic or ophtalmologic complications
- Chronic sinusitis without recovery despite multiple treatments
- Temporal bone imaging
  - Congenital cholesteatoma, relapsing cholesteatoma
  - Cochlear implant, ossicular replacement
  - Otosclerosis work-up

Stapes agenesis, atresia of the oval window.

Recurrence of congenital cholesteatoma.
Cochlear prosthesis.

Total ossicular replacement prosthesis.
• Osteoarticular radiology

- Trauma and neoplastic pathology

• Radiation oncology

- Motion evaluation of abdominal organs and reduction of Planning Target Volume in neuroblastoma therapy

• Interventional radiology

- Biplane angiographic system for cardiac procedures
- Needle biopsies of lung, liver and kidney
• Conclusions

− Strict observation of Justification and Optimization

− If MDCT indicated \( \rightarrow \) to replace with a CBCT

− ALARA: as low as reasonably achievable

− ALADA: as low as diagnostically acceptable

− A good clinical practice \( \rightarrow \) no need evidence based guidelines