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(MCT) STUDY ON MICE

, A. MOCSAI[2], G. FABIAN[3]

dapest, HUNGARY, 2 Semmelweis Univer-
Semmelweis University, Department of

stosis, cranial base- length and skull
eopetrosis.
days-old Phospholypace C gamma 2
arison– were examined. The newborn
d PLCγ2 expression. The length of the
ured by MCT (60 kV, 0,5° rotation step,
ed to demonstrate the developmental
an Blue and Alizarin Red S indicated the
y. Morphologic parameters were determi-
m) software.
,005) between the cranial bases of the
nd 10,019 mm respectively). There was
t of synostosis which was faster and

kull using MCT seems to be a useful

OP 25

Title

REPRODUCIBILITY OF 3D CEPHALOMETRIC LANDMARKS IN CONE-BEAM AND LOW-DOSE CT

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Body

Objectives: To compare the reproducibility of three-dimensional cephalometric landmarks on three-dimensional computed tomography (3D-CT) surface rendering using clinical protocols based on low-dose (35-mAs) spiral CT and cone-beam CT (I-CAT). The absorbed dose levels for radiosensitive organs in the maxillofacial region during exposure in both 3D-CT protocols were also assessed.

Methods: The study population consisted of 10 human dry skulls examined with low-dose CT and cone-beam CT. Two independent observers identified 24 cephalometric anatomic landmarks at 13 sites on the 3D-CT surface renderings using both protocols, with each observer repeating the identification one month later. A total of 1920 imaging measurements were performed. Thermoluminescent dosimeters (TLDs) were placed at six sites around the thyroid gland, the submandibular glands and the eyes in an Alderson phantom to measure the absorbed dose levels.

Results: When comparing low-dose CT and cone-beam CT protocols, the cone-beam CT protocol proved to be significantly more reproducible for 4 of the 13 anatomical sites. There was no significant difference between the protocols for the other 9 anatomical sites. Both low-dose and cone-beam CT protocols were equivalent in dose absorption to the eyes and submandibular glands. However, thyroid glands were more irradiated with low-dose CT.

Conclusion: cone-beam CT was more reproducible and procured less irradiation to the thyroid gland than low-dose CT. Cone-beam CT should be preferred over low-dose CT for developing three-dimensional bony cephalometric analyses.

Keywords

Cone-Beam Computed Tomography, Cephalometry, Computed Tomography Scanner