Cephalometric analysis of the cervical spine
Jean-Michel SALAGNAC

In response to questions from readers of our n° 4-2007 of the Revue, which was devoted to the cervical spine, J-M Salagnac presents this study of four cephalometric films with his commentary on them.

STRUCTURAL STUDY OF THE PROFILE OF THE CERVICAL SPINE
AND BASE OF THE CRANIUM

1 - Count the vertebrae
2 - Look for morphological anomalies of the vertebrae
3 - Assess the alignment of vertebral bodies
4 - Assess the alignment of the spinous processes
5 - Assess the distribution of intervertebral spaces
6 - Look for vertebral blockage
7 - Look for Atlas-occipital fusions
8 - Evaluate the position of the summit of the dental hard palate
9 - Look for anomalies in the occipital clivus
10 - Assess the orientation of the occipital clivus / sphenoid clivus
11 - Assess the angle of the mandible / anterior-inferior angle of the odontoid

STRUCTURAL ANALYSIS OF THE FRONTAL VIEW OF THE CERVICAL SPINE

- asymmetries in the occipito-vertebral hinge
- asymmetries in the lateral atlas masses
- odontoid anomalies
- the alignment of spinous processes with the median sagittal plane

Address for correspondence: J-M SALAGNAC, 3 rue Marceau, 44000 Nantes. jean-michel.a.salagnac@wanadoo.fr
CEPHALOMETRIC ANALYSIS OF THE PROFILE OF THE CERVICAL SPINE

1 - Trace the line of the clivus
   assess:
   – the position of the condyles
   – the situation of the odontoid

2 - Trace the palatal plane
   Extend it backward,
   assess:
   – the situation of the odontoid summit
   – the situation of the anterior arch of the atlas
   => look for a basal depression

3 - Assess the situation of the mandibular angle and the anterior-inferior odontoid angle.

NORMAL CEPHALOMETRIC RELATIONSHIPS IN PROFILE BETWEEN THE BASE OF THE CRANIUM, THE CERVICAL SPINE AND THE MANDIBLE

1 - The condyle does not exceed the line of the clivus distally.
2 - The posterior edge of the ascending branch of the mandible is close to the anterior arch of the atlas and should not be superposed on the image of the odontoid.
3 - The mandibular angle is located opposite the anterior-inferior angle of the odontoid.

When an anomaly in the vertical situation of the mandibular angle / anterior-inferior angle of the odontoid is found, look for an anomaly in:
   – the condylicus unit (hypo or hypercondylicus);
   – the base of the cranium: hypodevelopment of the basioccipital;
   – the occipital hinge: basal depression, occipitalisation of the atlas;
   – the vertical and anterior-posterior situation of the odontoid-TMJ distance.

FURTHER READING