

Morphological features and measurements in a human fetus with karyotype 69, XXX: comparison with fetuses of the same CRL, without chromosomal anomalies

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SUMMARY

A triploid fetus (karyotype 69, XXX) with crown-rump length (CRL) 94 mm, presenting micro- and retrognathia, low-set ears and crooked feet, was cleared and double-stained with alizarin red S and alcian blue for detecting the ossification patterns in the vertebral column, ribs, ischium, limbs, and face. Longitudinal measurements of some long bones in the upper (humerus, ulna, radius) and lower (femur, tibia, fibula) limb were taken. The values of both the total length (TL) and the ossified part (OL) of each long bone, as well as the OL/TL per cent ratio were considered. Reference points were located on the mandible, i.e. condylar process (Pcl), coronoid process (Pco), gnathion (GN), gonion (GO), superior symphyseal point (SSP) for measuring linear dimensions. Since the aim of this work was to assess the influence of triploidy 69, XXX on the skeletal development and growth patterns, all values obtained in the examined specimen were related with those relative to a group of fetuses, without any detectable malformation and chromosomal anomalies, with a CRL mean value of 93 mm. Results evidenced that the triploid fetus presented growth restriction and that the vertebral centra ossification and the mandibular development were much delayed with the normal ossification patterns.