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Modification of Wright's technique for occipito cervical fixation in children with a very thin arch of C2

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Introduction: Most of the rotation of the upper cervical spine occurs at the atlantoaxial complex. Congenital malformations, os odontoideum and inflammatory diseases are the most common pathologies that cause cranio cervical instability in children. The surgical treatment of this instability consist in the stabilization whit different techniques, using wires, screws and bone grafts.

Material and Methods: We present the case of a 5 years old boy who suddenly when he was sleeping suffer and intense neck pain with stiff neck, without neurological impairment. Due to the severe pain we decided to perform a cervical CT scan. The CT scan showed an atlantoaxial luxation tipe III, a congenital fusion of the right articular facet of C1 whit the occipital condile and an agenesis of posterior arch of C1. After conservative treatment with a Minerva during 8 weeks we observe that the instability persist, and we decided a surgical fixation.

Due to the malformative characteristics we decided perform and occipito cervical orthrodesis.

After measure the lateral mass, the pedicles and the arch of C2 we realized that the unique form to perform and occipito cervical fussion whit C2 was using the Wright's technique with screws, but ipsilateral to the lamina. We removed the spinous process of C2 and drill the surface until get a flat surface to put the screws ipsilateral instead crossing them like in the Wright's technique.

Discussion: When the thickness of C2's arch doesn't permit to cross the screws it's very useful remove the spinous process and drill it until get a flat surface to introduce the screws in the ipsilateral side.

Conclusions: We describe a Wright's technique modification that it's very useful in cases of C1-C2 or occipitocervical fixation in wich the thickness of C2 arch is not wide enough to cross the screws.