

Management of Facetal Rotatory Torticolis by Changing the Plane of Occipito-Cervical joint in 8 y/o -Suggestion of a New Surgical Concept

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Objective

To give a stable joint at Craniovertebral junction in a child with Rotatory torticolis and Atlanto-Axial dislocation, owing to a unilateral vertical C1-C2 facet ioint.

The author intends to assert the importance of changing the plane of articulation and hence fusion, in an order to stabilize congenitally malformed (vertically oriented) CO-C1-C2 joint complex, in pediatric age group in particular(owing to soft bones).

Methods

We used 'posterior only' technique (Atul Goel), and did a Trans-articular screw fixation & fusion of vertically oriented C1-C2 joint on the affected side.

We did C1-C2 Screw rod fixation on the left side, as it was only mildly subluxated.

Due to already approximated Occiput and C2 lamina we drilled the under surface of the occiput partially, and superior surface of the C2 Lamina on the right side and securely placed a tricorticate bone block in between the two raw surfaces for fusion, thereby off loading the downward and torsional vector across this vertical joint.



orientation of facet because of fused C0-C1 and the C2 facet.

The Surgical Plan

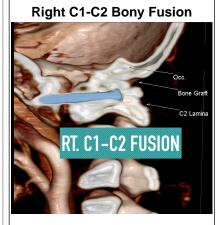
Graphic shows what we intended to do to achieve Fusion at C1-C2



The image shows the execution of plan

Results

We have followed the patient for more than a year and a half, & there is good evidence of fusion at Occipito-cervical region. No evidence of failure of the instrumentation or fusion is noted. However the child has webbed neck with tense trapezius muscles, and we think it needs surgical intervention to release the tension. The child has fairly good range of motion at neck only limited by progressively tightening trapezius musles and Levator scapulae, as she grows stronger.

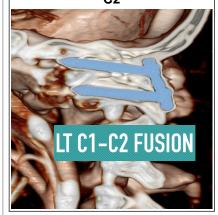


Follow Up CT after 18

months

CT Shows bony fusion across C0 -C2 and around the screw

CT image of Fusion at Left C1-C2





Conclusions

In a vertically oriented Occipitocervical joint, the constant torsional force is along vertical joint and perpendicular to the intrumentation. This can cause future instability due to "cut through" of the bone, thus may result in failure of instrumentation. It may lead a surgeon to take up to possible and unwarranted Odontoidectomy. Not only it adds up to the cost of treatment, but subjects a child to more morbid "*two stage*" surgery, which is not even needed !

The addition of fusion surface, or a 'creation' of a new joint as an 'offloader' between C0 and C2(or C1), may avoid unwarranted Trans-oral surgery and limits it only to posterior fixation. However we need a larger cohort to prove our point of view.