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Combined videoassisted and microsurgical transoral approach to the craniovertebral junction: personal experience in childhood

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Historically Menezes outlined several factors influencing the specific treatment of anterior CVJ compressive abnormalities. These included: 1) the reducibility of the lesion, i.e., whether anatomic alignment be restored thus alleviating the compression, 2) the direction and the mechanics of the compression, 3) the etiology of the compression, and 4) the presence of ossification centers. The approach to the lesion is dictated by the location and nature of the compression (1). When preoperative dynamic neuroradiological examinations demonstrate that the CVJ compression is reducible, neural decompression may be obtained by simply reducing the dislocation as well as by stabilizing the CVJ with a posterior instrumentation, either with wires, claws or screws ("functional decompression"). In cases in whom an accurate preoperative and intraoperative dynamic manoeuvres and traction, demonstrate the atlanto –axial dislocation (C1 – C2 D) irreducibility, the decompression is strongly suggested by the transoral route. Neuronavigation and robotics open further perspectives to the future developments of this challenging surgery in childhood.

We analysed the oportunity for andoscopic videoassisted approach to the CVJ along with neuronavigation for anterior decompression by the transoral approach in paediatric patients harbouring all the Menezed criteria for anterior decompression.

Among 60 patients ranging 6-78 years, undergoing CVJ decompressive procedures, we operated transorally 9 paediatric patients (ranging 11-15 years) by using open access, microsurgical technique, neuronavigation and transnasal/ transoral endoscopy.

The microscope was the main stone of the transoral procedure, a complete CVJ decompression was accomplished in all the cases by using the 30 degree endoscope that allowed to identify residual compression not clearly visible by using the microscope alone. the use of an angled-lens endoscope can significantly improve the exposure of the clivus without splitting the soft palate.

The endoscopically assisted transoral surgery represents an emerging alternative to the standard microsurgical approach to the anterior CVJ. Used in conjunction with traditional microsurgery and intraoperative fluoroscopy, endoscopy provides informations for a better decompression with a reduced need for extensive soft palate splitting, no need for hard palate resection, or extended maxillotomy. Combined transoral videoassisted microsurgical approach should be considered the gold standard especially in the paediatric patient due to the feasibility, the reliability and safeness of the procedure.