Combined endoscopic-assisted microsurgical transoral approach to the anterior craniovertebral junction compressive pathologies: experimental and clinical practice.


INTRODUCTION
At the present time, an update to the classical microsurgical transoral decompression is strongly provided by the most recent literature dealing with the introduction of the endoscopy in spine surgery, mainly for pathologies at craniovertebral junction (CVJ) region. In this paper, we present our experimental and clinical experience on the microsurgical transoral approach to anterior CVJ compressive pathologies associated to endoscopy.

MATERIALS AND METHODS
Among 50 patients harbouring CVJ pathologies, we analyzed 20 patients (mean age 35 years) operated on for CVJ decompressive procedures by using an open access with microsurgical technique, neuronavigation and combined transnasal transoral endoscopic approach.

RESULTS
In all the cases endoscopy allowed to reach a radical decompression compared to the microsurgical technique alone, as confirmed intraoperatively with contrast medium fluoroscopy. In our labs we performed a comparison between transnasal and transoral endoscopic control of CVJ by evaluating the linear and the angled exposure of CVJ as detected with X Ray and CT scan both in sagittal and lateral studies.
More in detail the transoral endoscopic control compared to the transnasal was wider from a minimum of 6% to a maximum of 193% (average 54%) in the sagittal plane and from a minimum of 133% to a maximum of 829% in the transverse plane (mean 421%).
Moreover we identified a new theoretic radiological line, similar to the nasopalatal line of Kassam, to predict preoperatively the cranial surgical domain limits of the transoral approach.

CONCLUSIONS
Virtually, in normal anatomic conditions, no surgical limitations exist for endoscopically assisted transoral approach at the CVJ, compared with the pure endonasal approach.

The Nasopalatal line
PIA: Palatine Inferior (dental) Arcade
ASA: Atlas Superior (dental) Arcade
SPIA: Surgical Palatine -Inferior (dental) Arcade