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Abstract

We obtained 8 fresh cadaveric specimens for the infratemporal fossa. Accessing each cadaver for a total of 10 endoscopic approaches to the ITF. A level of four separate endoscopic approaches to the ITF were performed in succession for each cadaver: 1) isolated endoscopic approach with an anterior maxillary antrostomy, 2) contralateral endoscopic approach via septotomy and septal window, 3) Caldwell-Luc incision with an anterior maxillary antrostomy, and 4) Gillies transfacial approach with sub-temporal fossa temporalis muscle dissection. The dissections were performed with the cadavers’ heads supine in the standard surgical position using a 4 mm rod lens endoscope (Karl Storz, Germany) with 30° and 70° degrees. The endoscope was connected to a light source through a fiber optic cable and to a 21-inch high-definition monitor. Upon completion, high-quality digital images were then obtained subsequently from this institution. Institutional Review Board approval was not necessary as the study involved cadaveric specimens, and the informed consent for dissection was obtained from the cadaveric subjects.

Results

The combination of four different endoscopic techniques allowed complete access to all areas of the ITF. The contralateral septal approach resulted in excellent lateral access, the Caldwell-Luc improved septal access, and the Gillies approach allowed posterior access. The endoscopic approaches were associated with varying degrees of exposure to surrounding structures including the maxillary sinus and the posterior fossa. The approach that provided the greatest exposure to the posterior fossa was the Gillies transfacial approach. The Gillies approach allowed access to the posterior fossa via the sub-temporal fossa and the temporalis muscle. The approach also allowed access to the posterior fossa via the sub-temporal fossa and the temporalis muscle. The approach also allowed access to the posterior fossa via the sub-temporal fossa and the temporalis muscle. The approach also allowed access to the posterior fossa via the sub-temporal fossa and the temporalis muscle.

Discussion

The infratemporal fossa has been historically been one of the more difficult areas to access surgically. In 1961, Farbman-Barbara first reported an infratemporal fossa approach for advanced tumors of the maxillary sinus. Subsequent modifications and techniques have been described by Fisch (transtemporal), Schramm and Sekhar (pneumotympanum), and finally the Caldwell-Luc approach improved anteroposterior access, and the Gillies incision allowed anteroposterior access.

Conclusion

We conclude that the graduated endoscopic multi-angle approach allows for safe and adequate access to the infratemporal fossa with varying degrees of exposure to surrounding structures. This approach allows for a comprehensive endoscopic approach to the infratemporal fossa with varying degrees of exposure to surrounding structures including the maxillary sinus and the posterior fossa. The approach that provided the greatest exposure to the posterior fossa was the Gillies transfacial approach. The Gillies approach allowed access to the posterior fossa via the sub-temporal fossa and the temporalis muscle. The approach also allowed access to the posterior fossa via the sub-temporal fossa and the temporalis muscle. The approach also allowed access to the posterior fossa via the sub-temporal fossa and the temporalis muscle. The approach also allowed access to the posterior fossa via the sub-temporal fossa and the temporalis muscle.

References