Anatomy of the medial orbit and various approaches to access it

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Background
The medial orbit can be the site of several pathological lesions such as cavernomas, neurinomas, and lymphomas. However, approaching the medial orbit remains a challenging task because of the narrow surgical corridors, surrounding critical neural structures, and complicated vascular relationships.

Objective
To examine the microsurgical anatomy of the medial orbit and compare the various surgical approaches to it.

Methods and Materials
Ten adult cadaveric specimens were examined using magnifications ranging from 3X to 40X after perfusion of the arteries and veins with colored silicone. The microsurgical anatomy of the medial orbit and surgical approaches to it were examined. All approaches were performed using 0° rigid endoscopes or the surgical microscope.

Microsurgical anatomy of the medial orbit

Trans-sinus approach

Transorbital approach

Illustrative case –Medial approach–
7-year-old girl presented with exophthalmos. MR imaging demonstrated an anteromedial tumor of the orbit. The medial approach was performed. The pathological finding was a lymphangioma.

Conclusions
The knowledge of the microsurgical anatomy of the medial orbit and surrounding critical structures and the selection of an appropriate surgical approach will make surgical procedures safe and precise.

References

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Illustrative case –Orbitofrontal approach–
A 37-year-old woman presented with right exophthalmos. The orbitofrontal approach was performed. The pathological finding was schwannoma.