

Orbit

The orbit, or orbital cavity, is a bony space filled with the *eye bulb* (*bulbus oculi*), the surrounding fatty tissue (*corpus adiposum orbitae*), tear gland (*glandula lacrimalis*) and tear duct (*ductus lacrimalis*), **orbital muscles** (**musculi bulbi**), *vessels and nerves*.

Walls, relationships to surroundings, passages

Walls

The space of the orbit has the shape of a four-sided pyramid, the base of which is the entrance to the orbit, the *aditus orbitae*, and the walls of which meet at the top of the orbit, the *apex orbitae*. So we can distinguish four walls in the orbit - medial, superior, lateral and inferior.

Aditus orbitae

The entrance to the orbit is bordered by the *margo supraorbitalis* and the *margo infraorbitalis*. They are formed by the following bones: cranially, the *os frontale*, laterally, the *os zygomaticum*, caudally, the *maxilla*, which extends medially to the frontal bone with its *processus frontalis*.

Media Wall

It is created in the sagittal plane, with the right and left walls being parallel. From front to back, it is made up of: *processus frontalis maxillae*, *os lacrimale*, *lamina orbitalis ossis ethmoidalis* and *ala minor ossis sphenoidalis*. It contains the *fossa sacci lacrimalis* and *canalis nasolacrimalis*, in which the lacrimal duct - *ductus lacrimalis* is located. Then there is the *foramen ethmoidale anterius* and the *foramen ethmoidale posterius*, the openings between the *lamina orbitalis* of the olfactory bone and the *os frontale*. Nerves and vessels of the same name run through them.

Upper Wall

From front to back, it is formed by: *pars orbitalis ossis frontalis* and *ala minor ossis sphenoidalis*. *glandulae lacrimalis*.

Lateral wall

It is formed from front to back: *os zygomaticum*, *ala major ossis sphenoidalis*. In this wall is the *foramen zygomaticorbitale* for the *n. zygomaticus*.

Lower wall

This wall is made up from front to back: *os zygomaticum*, *corpus maxillae* and *processus orbitalis ossis palatini*. The lower wall contains structures and openings: *sulcus et canalis infraorbitalis*, *fissura orbitalis superior*, *fissura orbitalis inferior*.

Relations to surroundings, passages

The topographic relations of the orbit are as follows

Medially there is the **nasal cavity** and the *sinus ethmoidales* of the olfactory bone. Above the orbit is the **anterior cranial fossa** and the *sinus frontalis* as part of the frontal bone. The *fossa temporalis* is located laterally. Below the orbit is the maxillary sinus.

Communications and their passing structures

Apex orbitae

In the *canalis opticus* the *n. opticus* and *a. ophthalmica*.

Media wall

In the "canalis nasolacrimalis" there is the already mentioned "ductus nasolacrimalis". In the *foramen ethmoidale anterius* and *foramen ethmoidale posterius* we find vessels and nerves of the same name. So *n. ethmoidalis anterius* and *n. ethmoidalis posterius* (somatosensitive innervation of part of the nasal mucosa) and then the *vasa ethmoidalia anteriora* and the *vasa ethmoidalia posteriora*.



Orbital bones - *os sphenoidale* (red), *os palatinum* (light blue), *os maxillae* (pink-purple), *os zygomaticum* (blue), *os frontale* (yellow), *os lacrimale* (green), *os nasale* - not part of the orbit (gray-green), *os ethmoidale* (brown)

Lateral wall

In the *foramen zygomaticoorbitale* we find *n. zygomaticus* - it originates from the orbit and branches in the *os zygomaticum* to the *n. zygomaticofacialis* for sensitive innervation of the skin above the cheekbone and *n. zygomaticotemporalis* for sensitive innervation of the skin of the anterior temporal region and part of the frontal region.

Lower wall

To the "canalis infraorbitalis" leads the "n. infraorbitalis, which branches in the course. *Fissura orbitalis superior* communicates with the middle cranial cavity, mediolaterally pass through it: *n. oculomotorius*, *n. nasociliaris*, *n. frontalis* and *n. lacrimalis* as branches of *n. ophthalmicus*, *n. abducens*, *n. trochlearis* and *v. ophthalmica superior*. The *Fissura orbitalis inferior* communicates with the *pterygopalatine fossa* and the *infratemporalis fossa*. It passes through *n. zygomaticus* (here it enters the orbit, which it leaves through the *foramen zygomaticoorbitale*), *n. infraorbitalis*, *a. infraorbitalis* and *v. ophthalmica inferior*.

Links

External links

- [Wikipedia:Orbital bone](#) (English)

References

- PETROVICKÝ, Pavel. *Anatomy with topography and clinical applications 3rd volume*. 1. edition. Enlightenment, 2002. 542 pp. ISBN 80-8063-048-8.
- ČIHÁK, Radomír. *Anatomy 1*. 2. edition. Grada, 2001. 497 pp. ISBN 80-7169-970-5.