

MEDIAL ORBITAL EPIDERMOID CYST

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Abstract. Dermoid and epidermoid cysts are among the most common orbital tumors, comprising 3% to 9% of all orbital masses. We report a rare case of upper medial orbital epidermoid cyst of a 2-year-old patient. The patient was complaining of pain in the right eye and infrequent vomiting. The neurological and radiographic examinations showed no pathological findings, only after CT scan was performed a tumor formation was found. After the extirpation a histological examination was performed proving the diagnosis.

Key words: epidermoid cyst, CT scan, extirpation

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INTRODUCTION

Dermoid and epidermoid cysts are among the most common orbital tumors, comprising 3% to 9% of all orbital masses; diagnosis usually occurs during infancy or early childhood [2]. These cysts are present congenitally and enlarge progressively. The more superficial cysts usually become symptomatic in childhood, but deeper orbital dermoids may not become clinically evident until adulthood [1]. An orbital dermoid cyst is a choristoma derived from displacement of ectoderm to a subcutaneous location along embryonic lines of closure. Dermoids are lined by keratinized stratified squamous epithelium (like skin), have a fibrous wall and contain dermal appendages such as sweat glands, sebaceous glands and hair follicles [4]. In contrast, epidermoid cysts are lined by epidermis only and are usually filled with keratin; they do not contain dermal appendages. Preseptal orbital dermoid cysts occur most commonly in the area of the

lateral brow adjacent to the frontozygomatic suture; less often they may be found in the medial upper eyelid adjacent to the frontoethmoidal suture. Dermoid cysts commonly present as palpable smooth, painless, oval masses that enlarge slowly. They may be freely mobile or they may be fixed to periosteum at the underlying suture [1].

In this paper, the diagnostic and surgical steps in managing the case of an orbital epidermoid cyst are presented.

CASE PRESENTATION

A 2-year-old patient was admitted in the Neurosurgical Department after being dropped on the floor. According to the mother the child had vomited once, had a headache and pain in the right eye. A tumor formation in the upper medial part of the orbit with smooth hard-elastic consistency 7 mm in size was discovered with painful palpation.

From the general neurological examination there were no pathological findings except for the pain in the area of the tumor and the headache. We explained the pain with the compression of the supraorbital nerve. The X-ray of the cranium did not show any pathological findings as well. The CT scan showed a well circumscribed cystic lesion in the medial part of the orbit (Fig. 1).

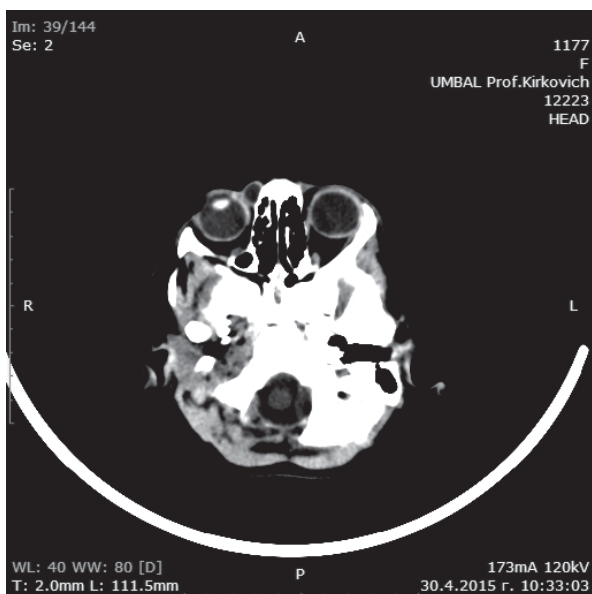


Fig. 1. CT showing a cystic lesion in the medial part of the right orbit

A surgery was performed under general anesthesia. A G-shaped cut was performed in the upper medial orbital quadrant over the tumor formation (Fig. 2, 3).

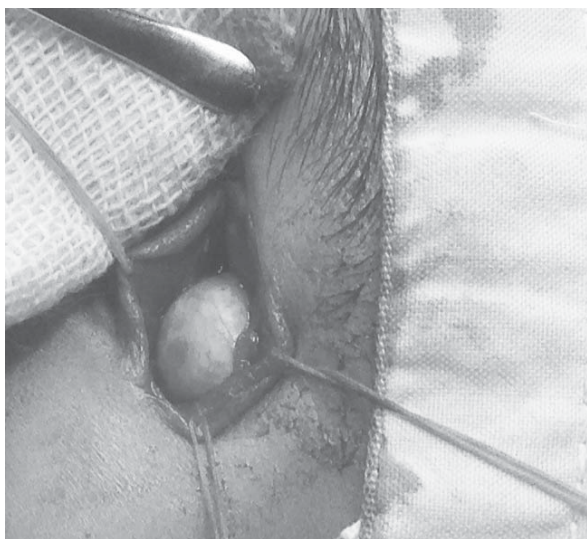


Fig. 2. Surgical performance – 1

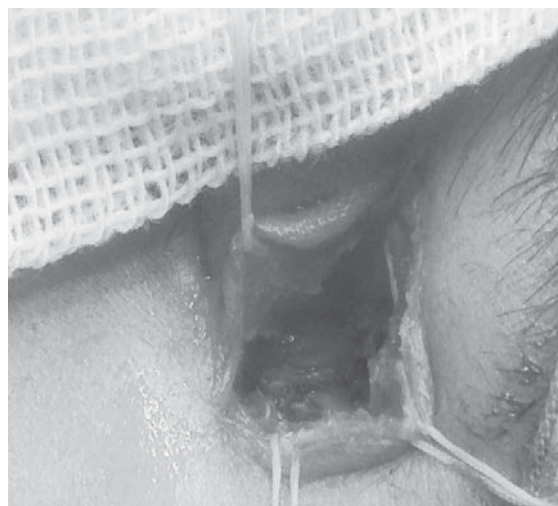


Fig. 3. Surgical performance – 2

The tumor was dissected and extirpated en bloc, taking care not to rupture the lesion (Fig. 4).



Fig. 4. Extirpated cystic lesion

At the end the surgical wound was closed with sutures (Fig. 5). The histological results showed that the cystic lesion is an epidermoid cyst.



Fig. 5. Surgical result

The patient has recovered well with a relief of the pain in the eye.

DISCUSSION

The upper medial quadrant is an uncommon location for this kind of tumor. A similar case was described by D. Veselinovic et al. in 2010 [7].

The most important differential diagnostic points due to the location of the tumor are dacryoceles and encephaloceles. Dacryocel is typically present below the medial canthal tendon, while the presented tumor is above the tendon, so it can be excluded. Encephalocele is accompanied by pulsations of the globe or mass due to transmission of intracranial pulse and requires neuroimaging to differentiate.

Lelli Jr et al. present a similar case – a 21-month boy with a medial canthal mass since birth, that was clinically consistent with a dermoid or epidermoid cyst. Computed tomography and neuroradiologic interpretation questioned the clinical diagnosis – as the lesion was radiographically consistent with a dacryocystocele. Only after was it confirmed as epidermoid cyst [5].

A research article reporting 17 cases of epidermoid cysts showed that the most common finding detected in orbital CT scans was the presence of an orbital cyst. The mean length in the longest diameter was 6 cm (± 0.7) with various radiodensities. The borders were smooth in 13 patients, yet the remaining four showed irregular borders with sclerotic edges, two of whom had an additional bony defect in the orbital roof. Increased orbital dimensions as well as globe displacement were also detected [6].

In the case we report a surgery was performed under general anesthesia. Rupture of the cyst can lead to an acute inflammatory process if part of the cyst wall or any of the contents remains within the eyelid or or-

bit. If the cyst wall is ruptured, the surgeon should remove the entire wall and then thoroughly irrigate the wound to remove all cyst contents. Surgical removal may be difficult if the cyst has leaked preoperatively and adhesions have developed [1].

CONCLUSION

Even though it is one of the more common orbital tumors, the epidermoid remains a relatively rare condition. Neurological examination and x-ray are usually insufficient for diagnosis, and unless CT scan is performed the diagnosis could be confused with another. Caution must also be taken when the tumor is removed, as any damage to the formation itself could lead to rupture increasing the difficulty of the procedure and the risk for inflammatory complications.

REFERENCES

1. American Academy of Ophthalmology, Section 7: Basic and Clinical Science Course, Orbit, Eyelids and Lacrimal system, p. 36-37.
2. Blanco G., R. Esteban, D. Galarreta, M. Antonia Saornil, Orbital Intradiploic Giant Epidermoid Cyst, Arch Ophthalmol. 2001;119(5): p 771.
3. Friedman, D. P., V. M. Rao, and A. E. Flanders. „Lesions causing a mass in the medial canthus of the orbit: CT and MR features.“ AJR. American journal of roentgenology 160.5 (1993): 1095-1099.
4. Kanski J., B. Bowling. Seventh edition, Clinical Ophthalmology A Systematic Approach, p 100.
5. Lelli Jr, Gary J. and Richard L. Levy. „Epidermoid cyst masquerading as dacryocystocele: case report and review.“ Orbit 30.2 (2011): 114-115.
6. Rania A. Ahmed and Rasha M. Eltanamly, “Orbital Epidermoid Cysts: A Diagnosis to Consider,” Journal of Ophthalmology, vol. 2014, Article ID 508425, 6 pages, 2014. doi:10.1155/2014/508425.
7. Veselinović D, Krasić D, Stefanović I et al. Orbital dermoid and epidermoid cysts: case study. Srp Arh Celok Lek. 2010 Nov-Dec;138(11-12):755-9.