Joint Session Ophthalmic Pathology & EOPS: Casuistic introduction in ophthalmic pathology for trainees and general pathologists.

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Patients History:

- 3 years old girl
- October 2016, mother noticed a "lump" in the region of the left eyebrow tail
- Medical history: no pathology of interest.
- On exploration: globe positions, pupillary reaction, ocular balance and motility in the cardinal directions of gaze, and fundus examination were normal.

Mary Cassatt
"Caresse Maternelle" ca 1902
To Palpation:
- Mobile, depressible nodular tumor
- Adhered to deep planes of temporary orbital margin
- No inflammatory signs
- 1 cm in diameter

• Orbital normal bony marks
• Presence of small, nodular, well defined, lesion of soft parts (10x6x14mm) opposed to left orbit
• Without bone involvement or signs of complication.
Gross specimen description:

- The lesion was followed-up
- Surgical excision was performed in May 2019 and was sent to Pathology department for study.
- We received one reddish irregular tissue fragment of 15 x 12 x 9 mm of greatest dimensions.

Histology
Final Diagnosis:

“Lesion In left eyebrow tail. Surgical excision”: DERMOID CYST WITH FOREIGN BODY GIANT CELL REACTION
**Dermoid Cyst**

Dermoid cysts are benign congenital developmental abnormalities or *choristomas*.

*Congenital growths or tumors composed of tissue elements which are normally not located at the site of the involved tissue.*
Pathogenesis

They are the result from inclusion of ectodermal elements during the closure of the neural tube adjacent to fetal suture lines, particularly involving the developing sutures of the orbital bones.

http://fayllar.org/chapter-47-animal-development.html

https://en.wikipedia.org/wiki/Neurulation

http://fayllar.org/chapter-47-animal-development.html

• 3-9% of orbital tumors
• The most common benign lesions along with vascular tumors and inflammatory lesions in the orbit
  – The most common orbital tumors in children.
• **Location:** supertemporal or supranasal anterior quadrants of the orbit
  – Eyebrow tail (lateral canthus at the temporal fronto-zygomatic suture)
• **The clinical features:** tumor location, age at presentation:
  – **Superficial type:**
    • Present at birth
    • Discovered incidentally by parents at the age of 1-3 years old
    • Slow growing, painless, smooth, firm, mobile nodule
    • Don't displace the eyeball at the time at presentation.
  – **Deep type:**
    • Detected around the teenage or later in adult life
    • Arise from bony suture
    • Presenting generally with proptosis.
    • Bony erosions may appear resulting in local deformity could extend intracranially and involve dural exposure.
| 1. Orbital Cysts                          | a. Dermoid or epidermoid tumor |
|                                         | b. Pseudotumor                   |
|                                         | c. Mucocele                      |
|                                         | d. Lymphoma                      |
|                                         | e. Aneurysmal bone cyst          |
|                                         | f. Lipodermoid                   |
|                                         | g. Epithelial lacrimal gland tumor |
|                                         | h. Dentigerous cyst              |
|                                         | i. Teratomatous cyst             |
| 2. Inflammatory parasitic Cysts         | a. Echinococcal cyst             |
|                                         | b. Cysticercosis                 |
| 3. Noncystic Orbital Lesions with Cystic Component | a. Adenoid cystic carcinoma |
|                                         | b. Rhabdomyosarcoma              |
|                                         | c. Lymphangioma                  |
|                                         | d. Squamous cell carcinoma       |
|                                         | e. Orbital abcess                |
|                                         | f. Meningocele                   |
|                                         | g. Others                        |

Deep type: differential diagnosis is established between various entities...

• **On gross examination** dermoid cysts have a thin capsule and the lumen

• **On histological examination:**
  • Cyst wall: lined by keratinizing, stratified squamous epithelium that contains cutaneous appendages:
    • hair follicles, sebaceous and sweat glands.
  • Cyst lumen: contents keratin, white sebaceous-like material, hair, oily material, hemorrhagic fluid and cholestrin crystals.
  • *Spontaneous rupture of the cyst* can lead to foreign body granulomatous inflammatory reaction in the wall and adjacent tissues.
• **Imaging studies:**
  • Ultrasonography, computerized tomography and magnetic resonance
  • Measure tumor location, size, extension
  • Differentiate cystic from solid lesions
  • Identify cyst type
  • Help in planning management approach

• **Treatment:**
  • Complete surgical excision is the treatment of choice
  • Avoid rupture of the cyst wall during the surgery:
    • may lead to an extensive inflammatory reaction
Although dermoid cysts have almost no capacity for malignant transformation, isolated case reports describe squamous cell carcinoma arising from choristomatous orbital cysts in adult patients.
**Dermoid cyst, summary:**

1. **Congenital developmental** lesions
2. Most common in **children**
3. Located in the **eyebrow tail**
4. **Two clinical presentations** depending on age and location: superficial and deep (more aggressive)
5. Histology: similar to inclusion epidermoid cyst that contains **cutaneous appendages in the cyst wall**
6. Foreign body granulomatous inflammatory reaction is seen around the ruptured cysts
7. Surgical treatment: **complete exeresis**
8. Although are **benign**, squamous cell carcinoma arising from choristomatous orbital cysts are reported in adult patients.
References:

Thank you!!

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