INTERNATIONAL CONGRESS OF THE EGYPTIAN OPHTHALMOLOGICAL SOCIETY

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King Khaled Eye Specialist Hospital

Lacrimal Sac Tumors:

A case series for over twenty-seven years

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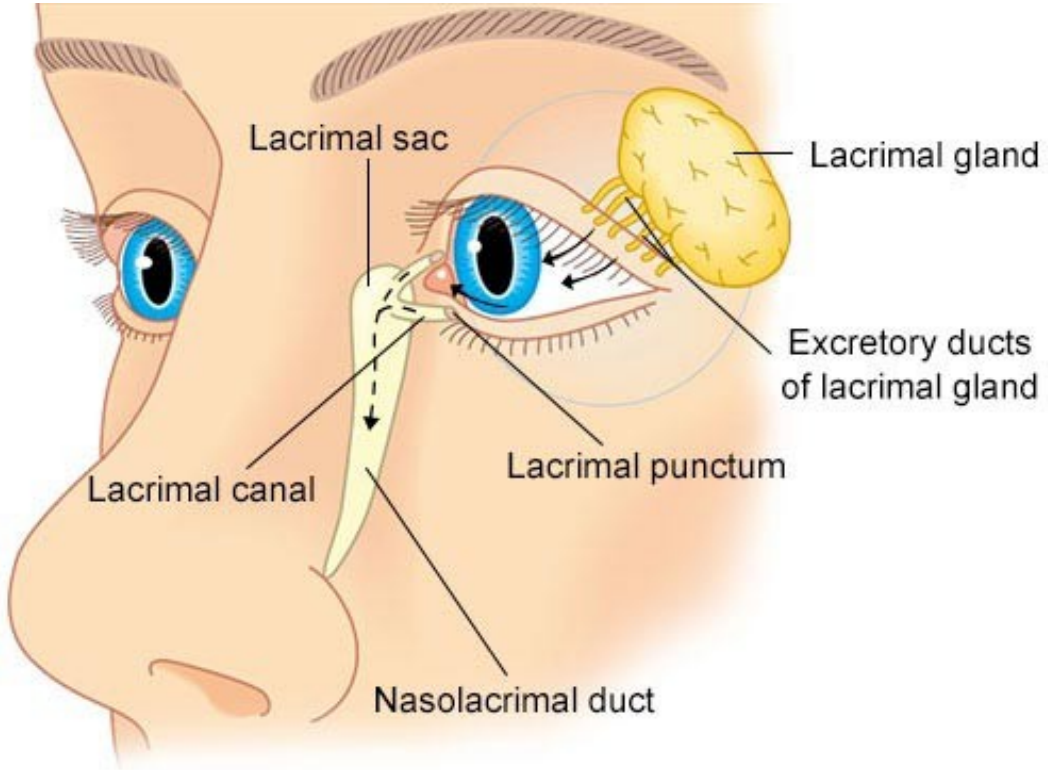
No financial disclosure

Lacrimal Sac

Lacrimal sac is lined with stratified columnar epithelium with mucous-secreting goblet cells.



Lacrimal Sac Tumors

Benign Tumors

- Papillomas (HPV 6 and 18 **)**
- Oncocytomas
- Adenomas
- Hemangiopericytoma

Malignant Tumors (55-79%)

- Squamous cell carcinoma
- Oncocytic adenocarcnima
- Mucoedpermoid Carcinoma
- Cystic adenoid Carcinoma
- Lymphoma
- Melanoma
- Rhabdomyosarcoma

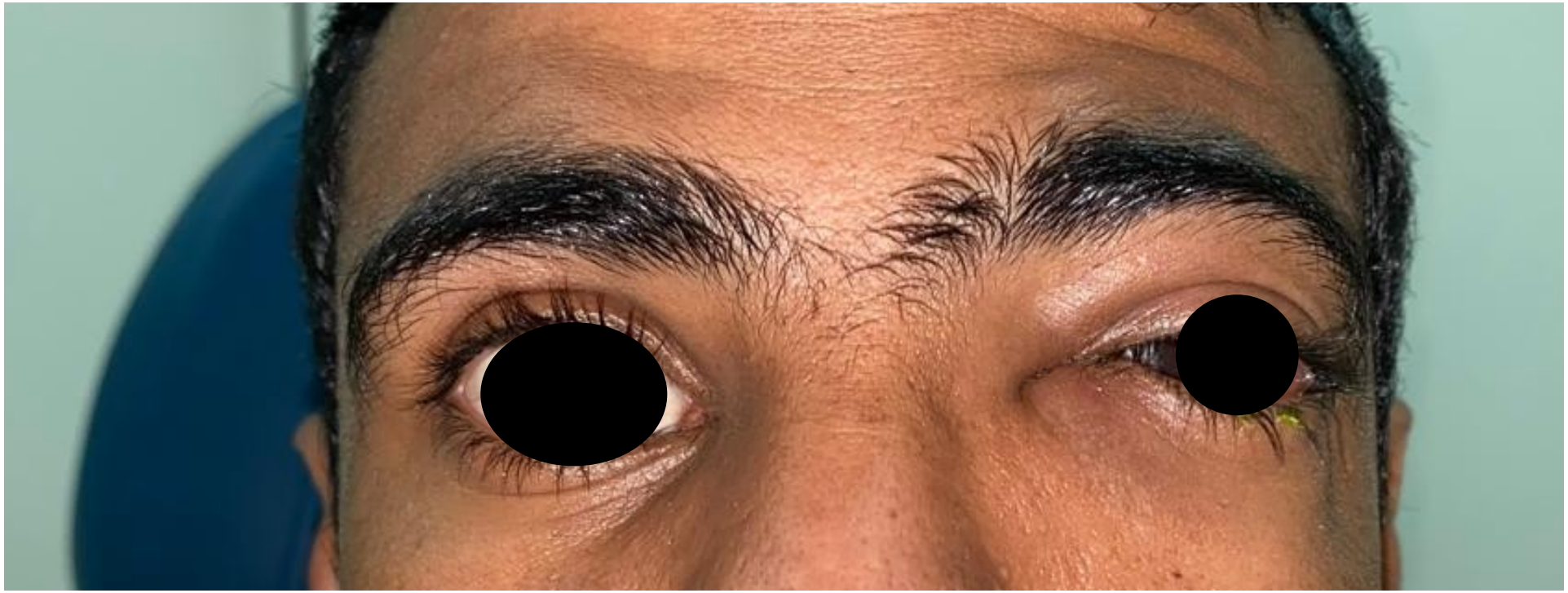
- Lacrimal sac tumors are indeed rare with uncertain prognostic predictability.
- Some carcinomas have a reported recurrence rate in up to 50% with a high mortality rate of 37%-100%.
- Lacrimal sac tumors have not been studied in our region to date and the prognosis has not been previously documented.

Lacrimal Sac Tumor Case Summary (1997–2024)

- **Study Cohort:** 38 histopathologically confirmed cases of lacrimal sac tumors
- **Gender Distribution:** 14 males, 24 females
- **Age at Diagnosis:** Mean age 38.3 years (range: 4–96 years)
- **Age Groups:** 8 pediatric patients (ages 4–17); 30 adults (ages 21–96)

- **Most Common Symptoms:**
- Epiphora reported in 92% of cases (n=35)
- Medial canthal swelling in 68.4% (n=26)
- Mucopurulent discharge in 63% (n=24)

- **Less Common Presentations:**
- Axial proptosis in 2 patients
- Superotemporal globe displacement in 3 patients

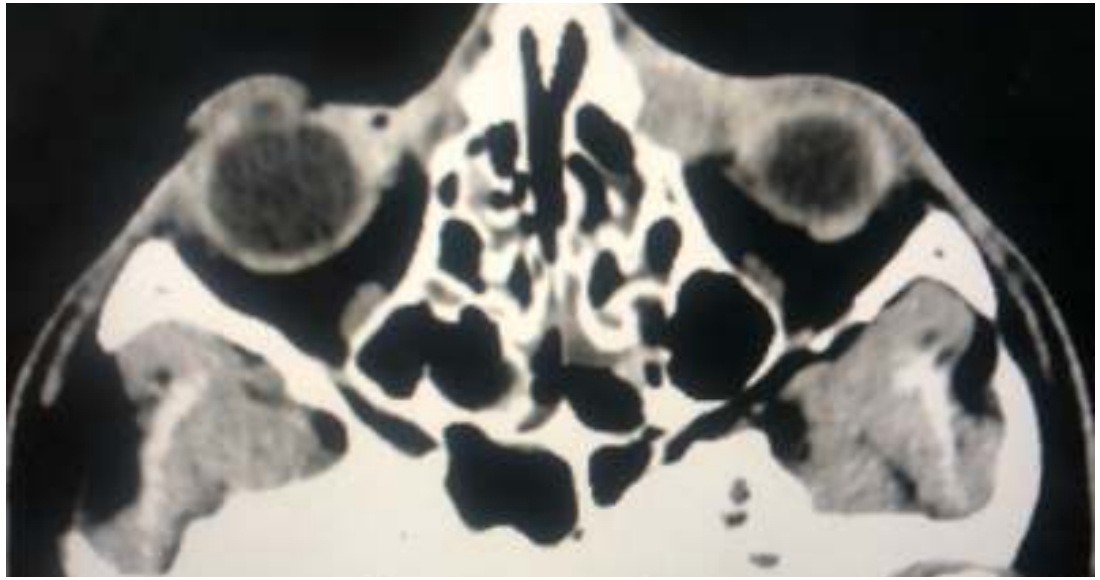


- **Patient History:**
- 60% (n=23) had recurrent dacryocystitis
- No reports of bloody tears (hemolacria) at any point in follow-up

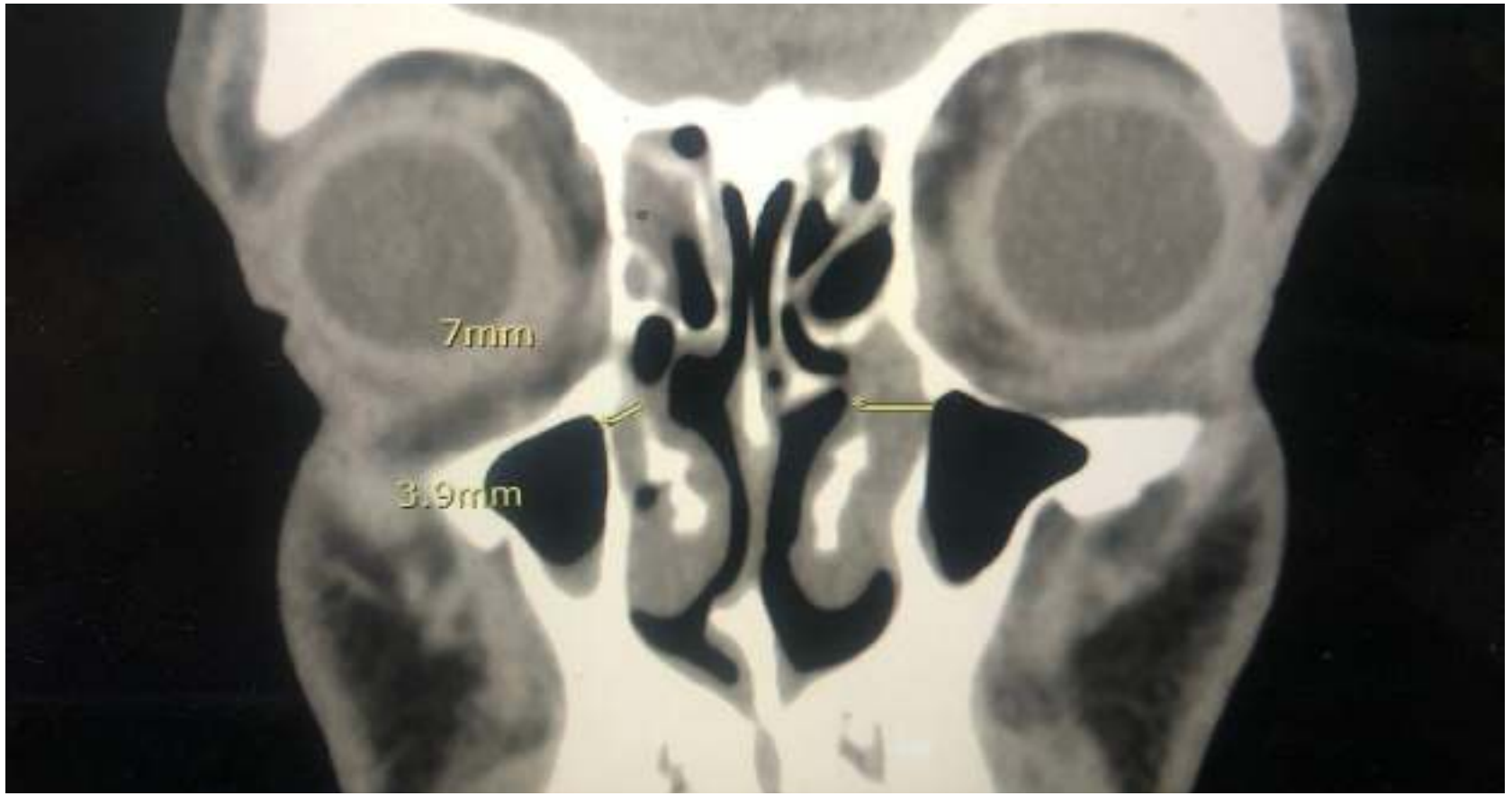
Investigations

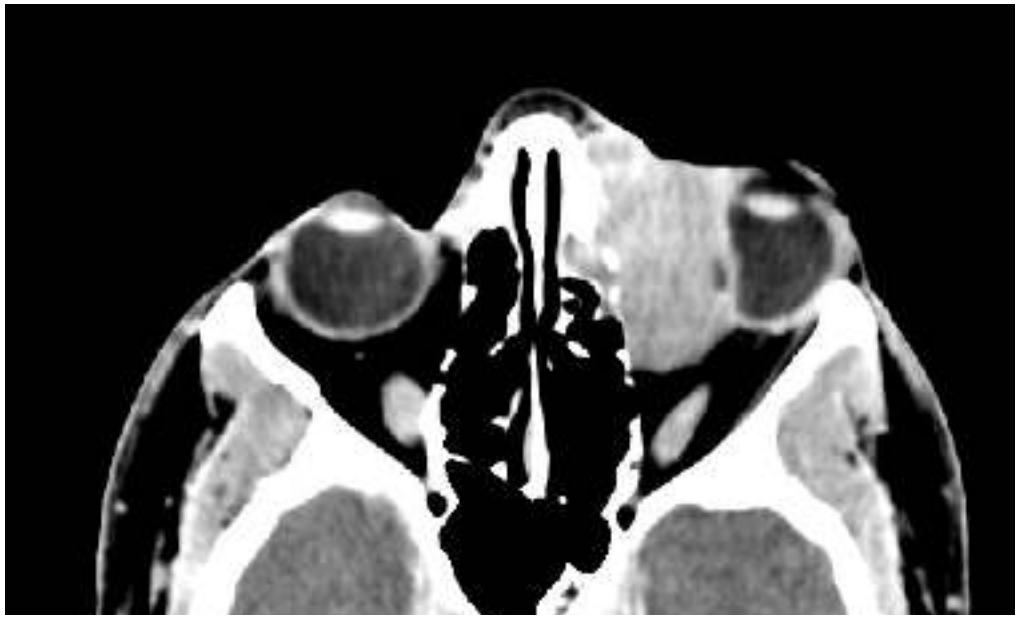
- **Computed Tomography Imaging CT (n=17):**

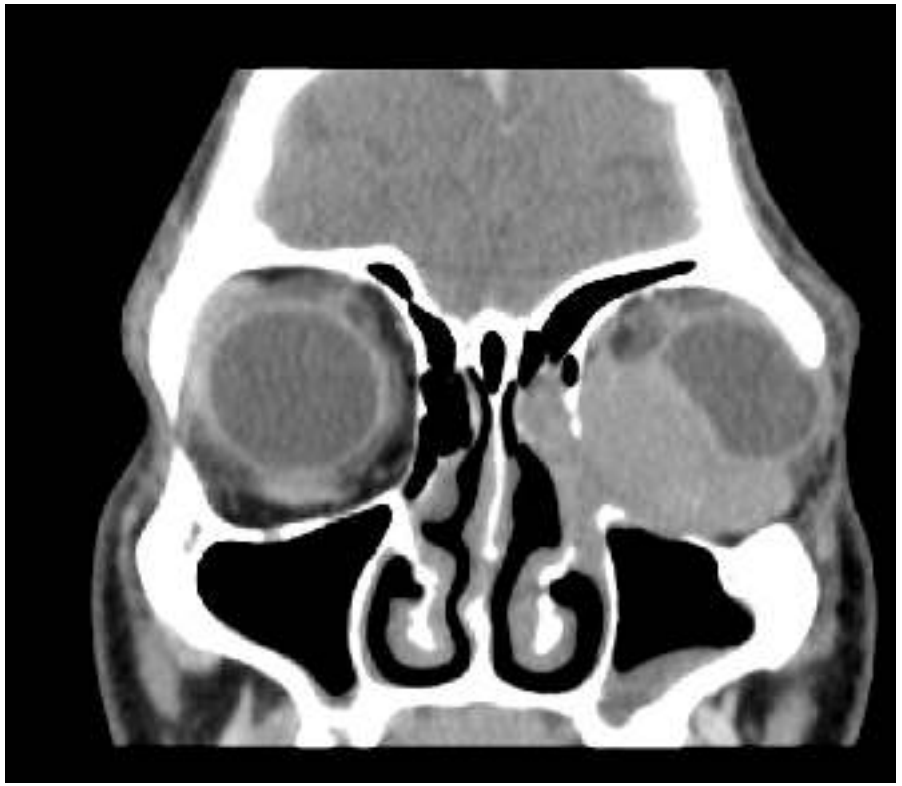
- 8 cystic lesions and 9 solid masses identified
- 3 solid lesions showed signs of malignancy (e.g., invasive growth)
- Orbital fractures noted in 5 cases, all with prior trauma



Computed Tomography CT



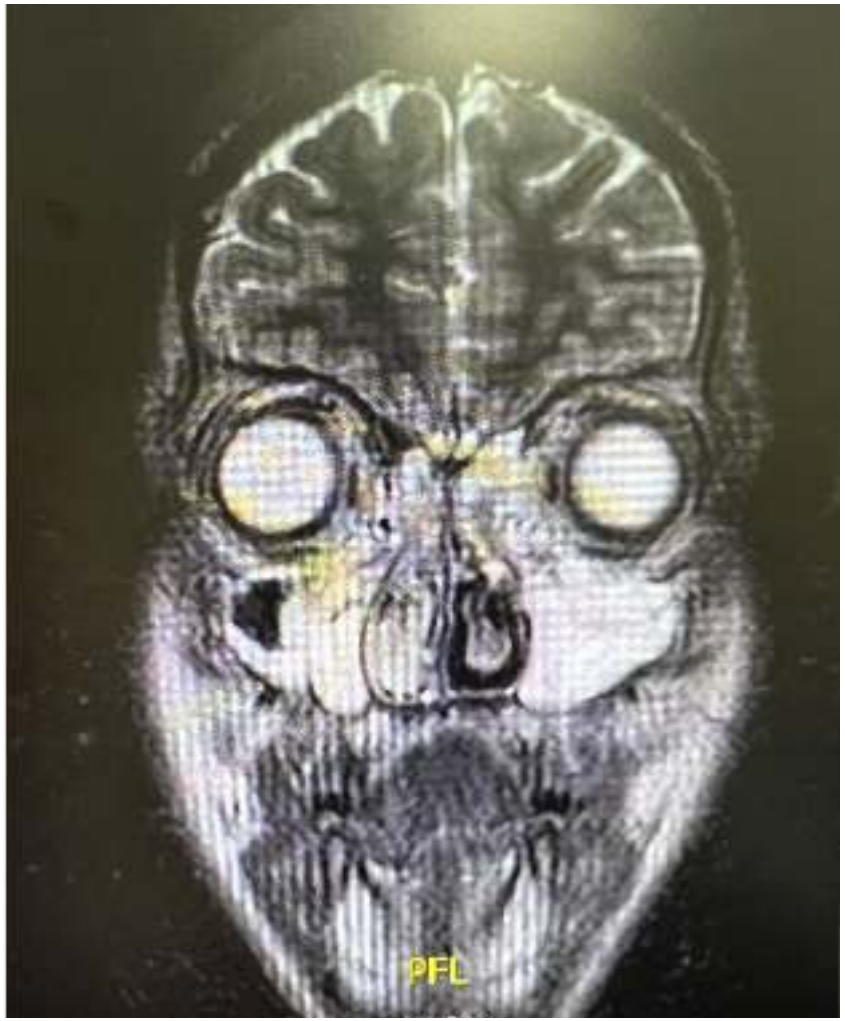


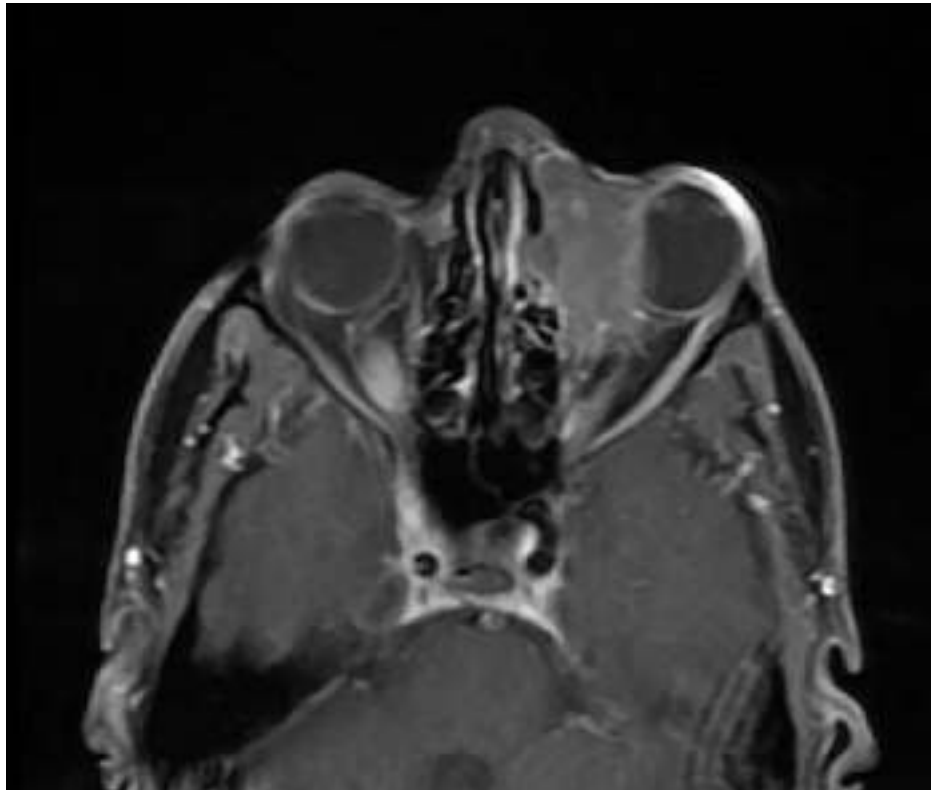


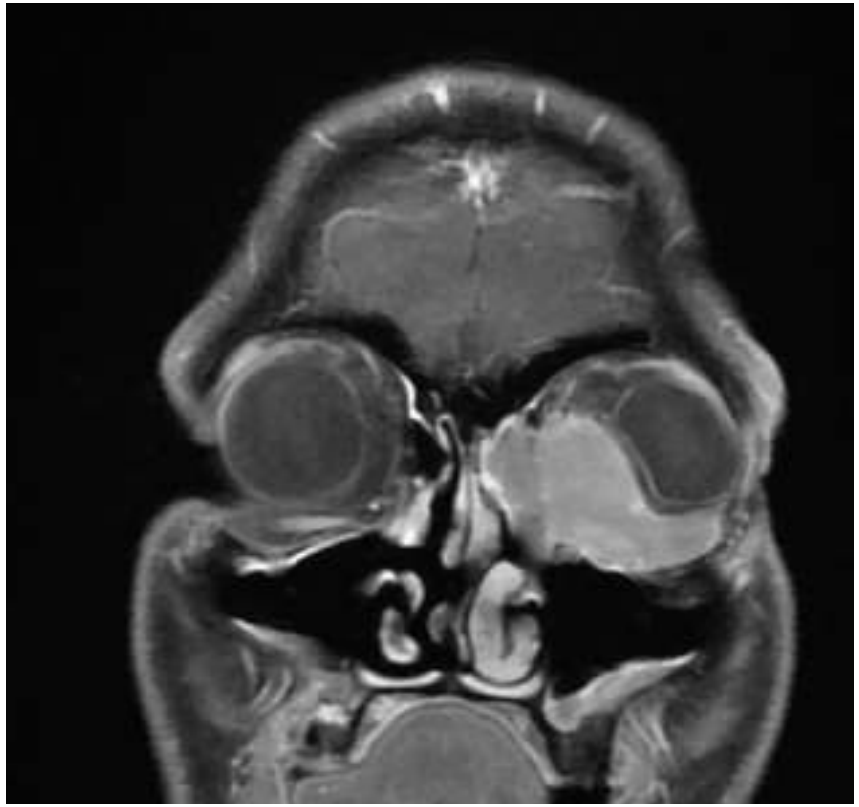
Investigations

Magnetic Resonance Imaging MRI (n=5):

- All showed solid masses in the lacrimal sac
- 2 cases involved medial rectus invasion
- 1 case had extension into the sinus cavity







Summary of the lacrimal sac tumors found

DIAGNOSIS	TOTAL NUMBER	AGE (MEDIAN)	RISK FACTOR	MANAGEMENT
PYOGENIC GRANULOMA	25	36 years (4-73)	- 36% prior surgical intervention (n=9) - 20% hx of trauma (n=5)	- 88% surgical excision (n=22) - 12% observation (n=3)
ATYPICAL LYMPHOID HYPERPLASIA	6	47.5 years (7-80)	-N/A	- 100% surgical excision (n=6)
LYMPHOMA	4	20 years (15-50)	-N/A	-75% radiotherapy (n=3) -25% refused treatment (n=1) 25% additional chemotherapy (n=1)
SQUAMOUS CELL CARCINOMA	1	96 years	-N/A	-N/A *
HEMANGIOMAPERICYTOMA	1	17 years	-N/A	-100% surgical excision (n=1)
ONCOCYTOMA	1	49 years	-N/A	-100% surgical excision (n=1)

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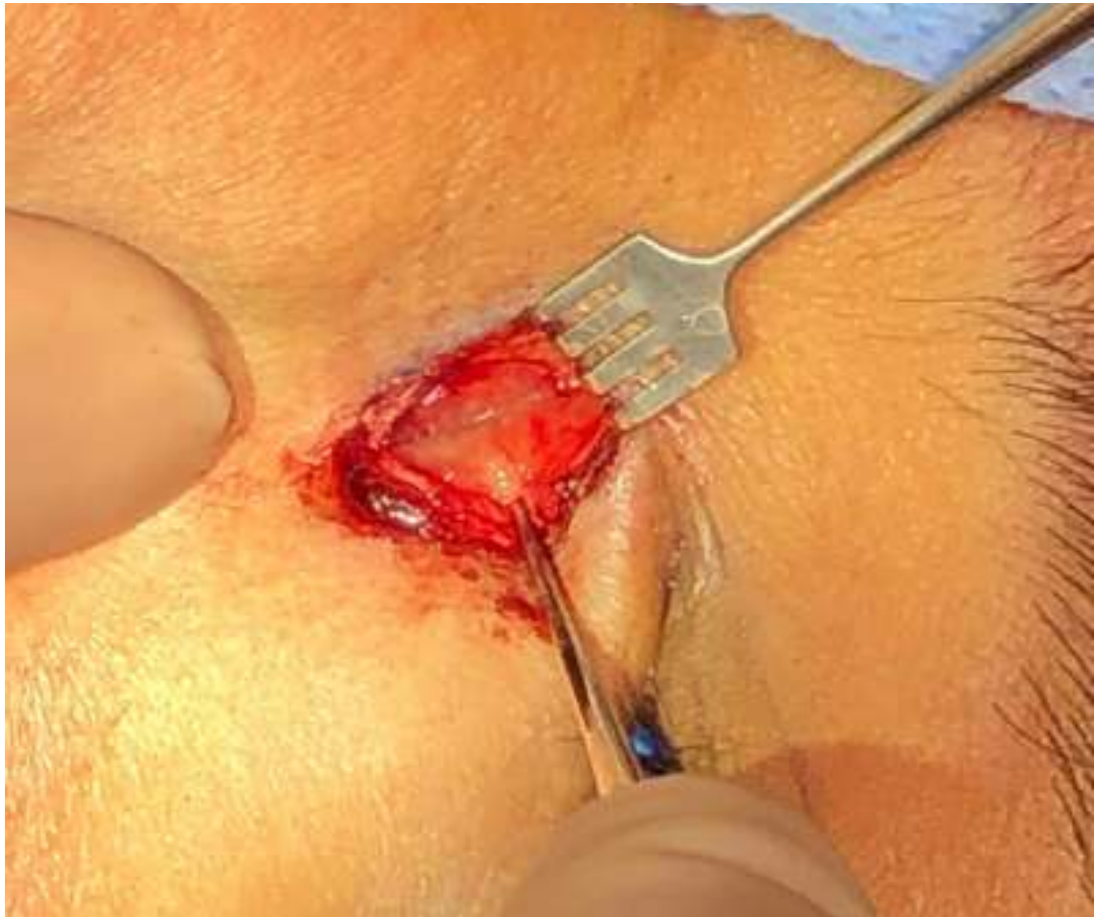
Treatment Approaches:



- 30 patients underwent tumor excision
- 3 lymphoma patients treated with radiotherapy
- 4 patients were managed conservatively with observation
- 1 patient received chemotherapy

Recurrence:

- 13% (n=5) experienced symptom recurrence within 3 months to 4 years (average: 2 years)
- Recurrent lesions:
  - 3 pyogenic granulomas → required DCR revision
  - 1 oncocytoma
  - 1 hemangiopericytoma → required repeat surgery

Prognosis

- 96-year-old SCC patient died 8 months post-diagnosis (due to unrelated organ failure)

Follow-up Duration:

Median: 2 years (range: 1 month to 47 years)

- **General Overview:**
- Lacrimal sac tumors are rare and can be life-threatening
- Literature reports 55–70% are malignant, with 94% being epithelial in origin

- **Study Findings:**
- 86% of cases were benign; 65% were pyogenic granulomas
- Pyogenic granulomas were also the most common benign pathology in routine DCR biopsies *(Koturović et al.)*

Pyogenic Granuloma

- **Risk Factors for Pyogenic Granuloma:**
  - 36% had prior trauma
  - 20% had previous surgery (iatrogenic cause)

- **Local Healthcare Context:**
  - King Khaled Eye Specialist Hospital receives regional referrals
  - Increased cases of prolonged dacryocystitis

- **Adjusted Classification:**
  - Excluding pyogenic granulomas, benign tumors make up 62%
  - Adjusted malignancy rate is 38%, lower than prior reports
- **Notable Absences:**
  - No squamous papillomas found (often associated with HPV)
  - HPV-related head and neck tumor data is sparse in Saudi Arabia
- **Less Common Tumors:**
  - Oncocytomas and hemangiopericytomas each seen in 2.6%
  - Lymphoid hyperplasia accounted for 16% — second most common benign tumor in this study
- **Regional Patterns:**
  - Similar findings to Bangladesh study *(Kadir et al):* 50% of tumors were of lymphoid tissue

- **Common Presentation:**
  - Lacrimal sac tumors may mimic nasolacrimal duct obstruction
  - Most frequent symptoms: epiphora and palpable medial canthal mass
  - Hemolacria is classically linked to malignancy but was not seen in this study
  - Important to investigate even in the absence of hemolacria
  - 13% of patients showed proptosis or globe displacement
- **Imaging Modalities:**
  - **CT Scan:** Most commonly used; identified a mass in all imaged cases
  - **MRI:** Superior for distinguishing cystic vs. solid lesions and assessing invasion
  - **DCG:** Performed in 2 cases; only confirmed obstruction, no added diagnostic value
- **Demographic Insight:**
  - Female predominance observed (63%), consistent with previous studies

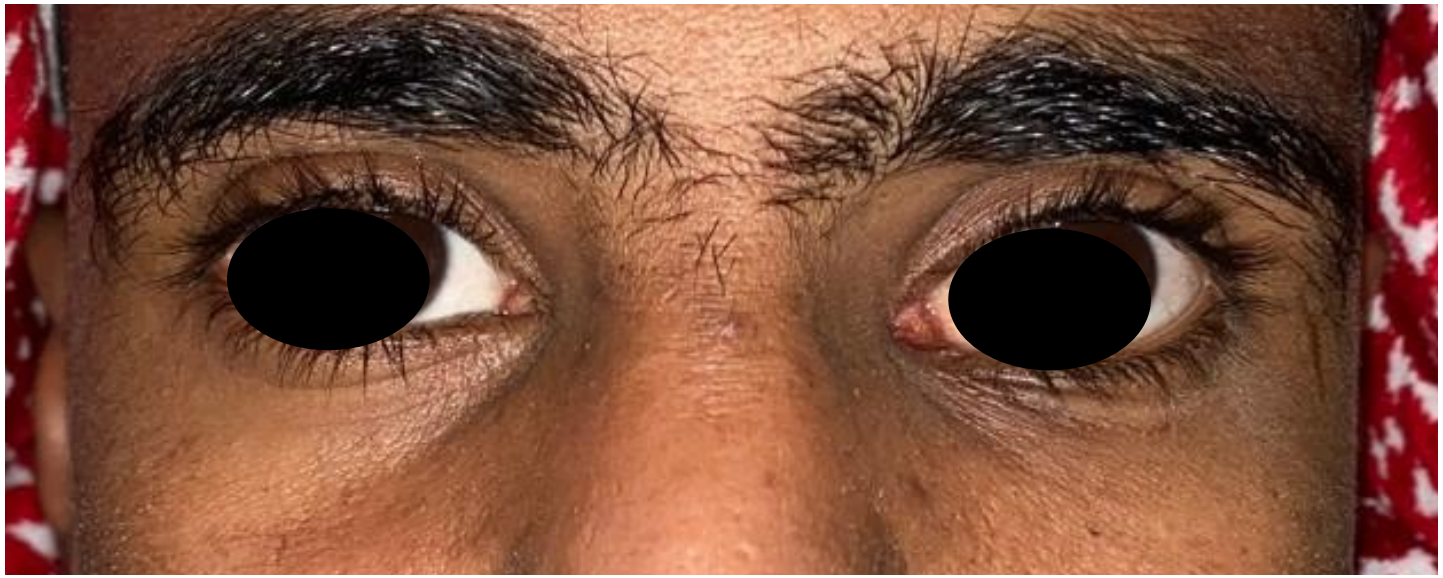
- **Squamous Cell Carcinoma (SCC):**
  - Most common lacrimal sac malignancy globally, often arising from pre-existing papillomas
  - In this study, SCC was found in only 1 elderly patient (20% of malignant tumors)
  - Low rate may be due to the rarity of papillomas in this population

- **Lacrimal Sac Lymphomas:**
  - Rare malignancies, typically accounting for 6–13% of cases
  - Found in 10% of total cases in this study (n=4 out of 38)
  - Previously reported to occur in elderly (mean age ~62.5 years)
  - This study showed a much younger mean age (~20 years), including pediatric cases (youngest: 15 years)
  - Pediatric lacrimal sac lymphomas are extremely rare (only 8 prior reports)
- **Subtypes of Lymphoma:**
  - 2 cases were Diffuse Large B-Cell Lymphoma (DLBCL)
  - 1 case was Mucosa-Associated Lymphoid Tissue (MALT) lymphoma

Summary of the previously reported cases of Pediatric lacrimal sac Lymphomas

AUTHOR	AGE (YEARS)	SUBTYPE	TREATMENT
CARLIN ET AL [16]	10	poorly differentiated lymphoma	External Beam Radiation
SCHEFLER ET AL [13]	10	MALT	Total Excision + Chemotherapy
KÖKSAL ET AL [15]	9	DLBCL	Chemotherapy
PARIKH ET AL [17]	13	DLBCL	Chemotherapy
MENG ET AL [12]	13	MALT	Radiotherapy
UCGUL ET AL [18]	13	MALT	Excision, radiotherapy chemotherapy
UCGUL ET AL [18]	12	MALT	Radiotherapy

- **Treatment Strategies:**
- Management tailored to tumor histopathology
- Surgical excision was the primary treatment modality
- Radiotherapy used mainly for lymphomas
- Malignant epithelial tumors may require extended resection or exenteration
- Chemotherapy considered in metastatic cases, but standardized protocols are lacking
- Pre-DCR evaluation is essential to prevent tumor spread into the nasopharynx



- **Recurrence and Prognosis:**
- Recurrence is uncommon but higher in papillomas and SCC
- Positive lymph nodes are linked to higher risk of recurrence and metastasis
- No malignant tumor recurrences or disease-related deaths were reported in this study

Conclusion

- Lacrimal sac tumors are rare with a variable clinical presentation and occurs in a diverse age group
- Predominance of benign tumors (especially pyogenic granulomas) contrasts with global malignancy trends
- Lymphoid hyperplasia and lymphomas were more frequent and occurred at younger ages than previously reported
- **Treatment Outcomes:**
  - Surgical excision and radiotherapy proved effective
  - Recurrence rates were low despite variability in pathology

- **Future Directions:**
- Multicenter studies recommended to refine treatment protocols and standardize diagnostic guidelines
- Emphasis on developing region-specific insights into tumor etiology and behavior

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Thank you