



CENTRE FOR SIGHT

Every eye deserves the best

CS Education

Orbital Metastasis from Breast Carcinoma: A Case series

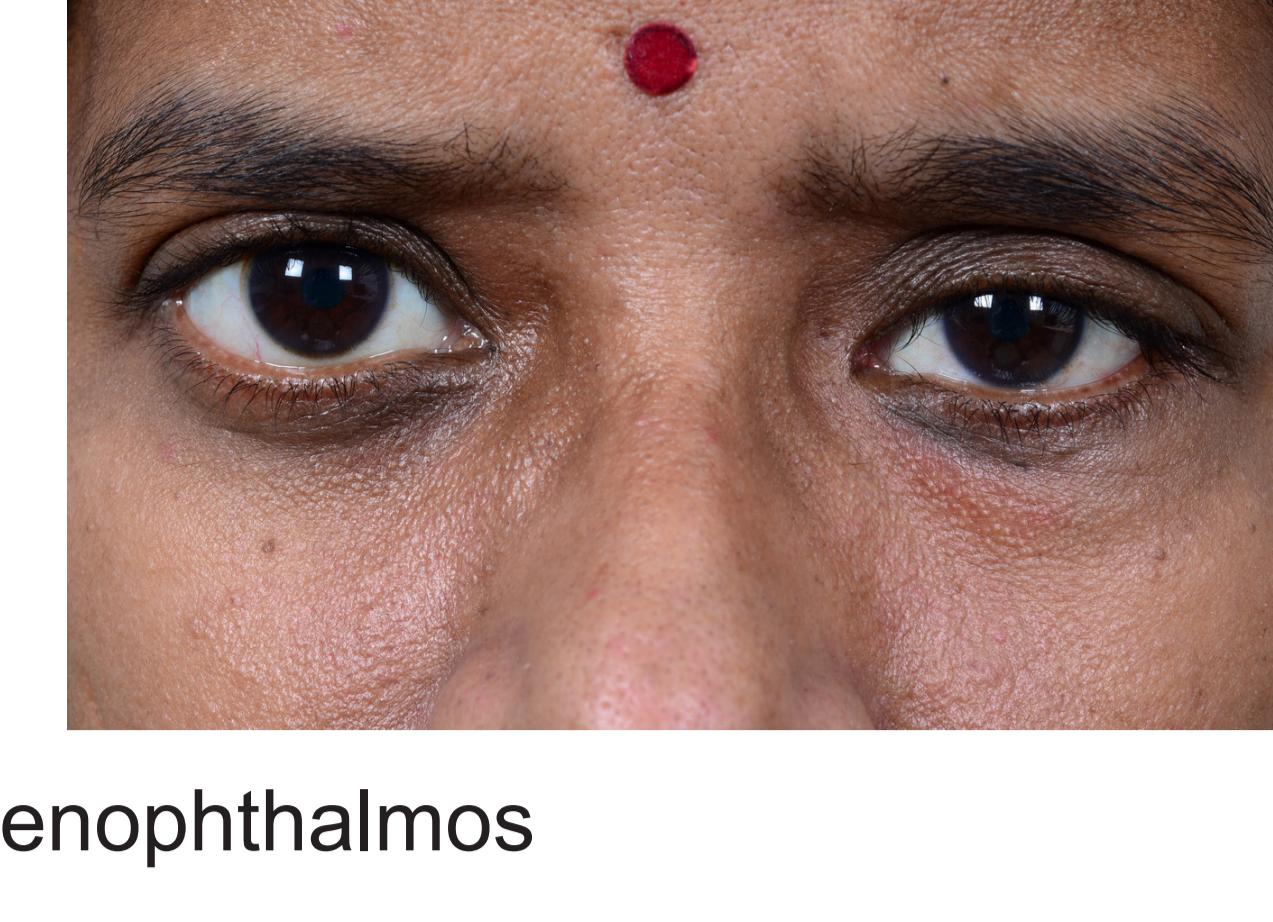
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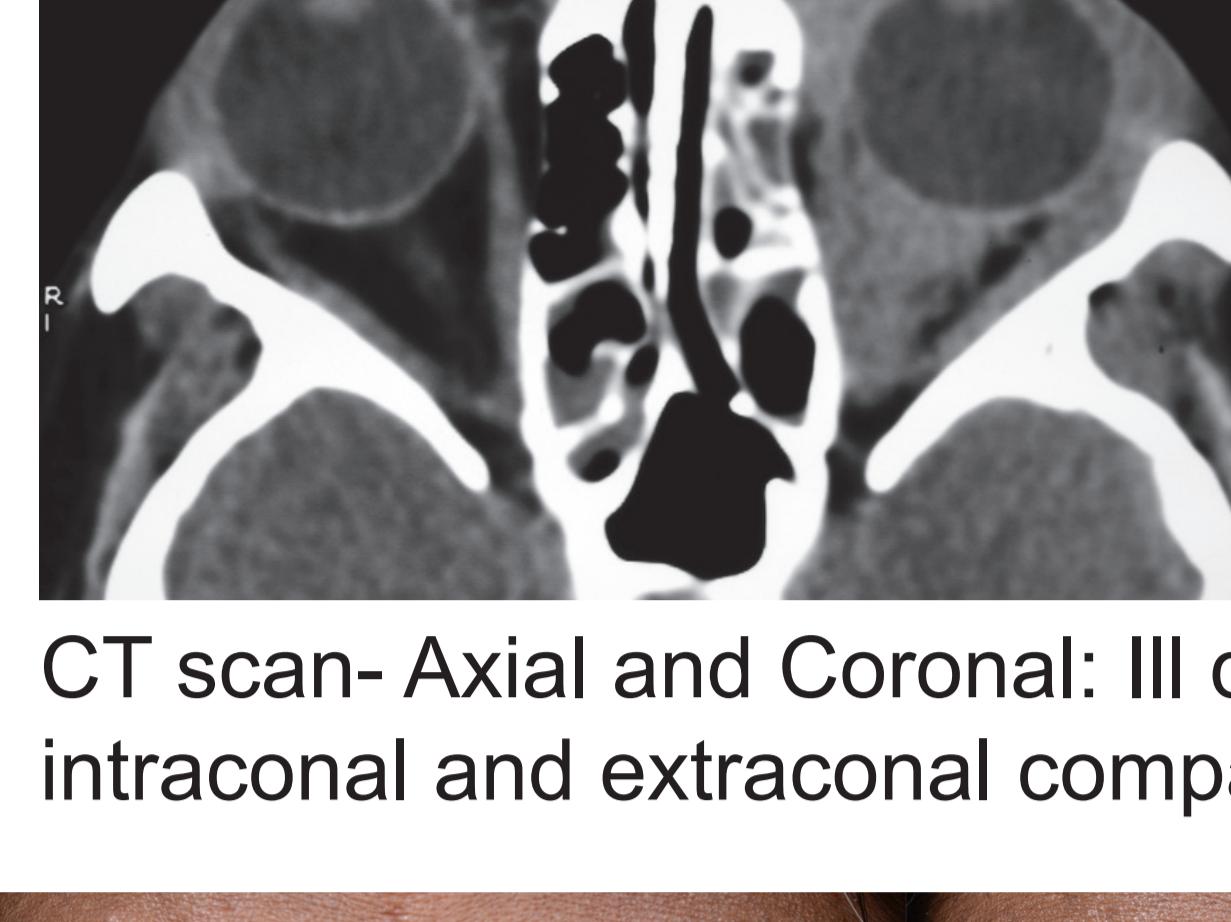
Ocular Oncology Service, Centre for Sight

INTRODUCTION

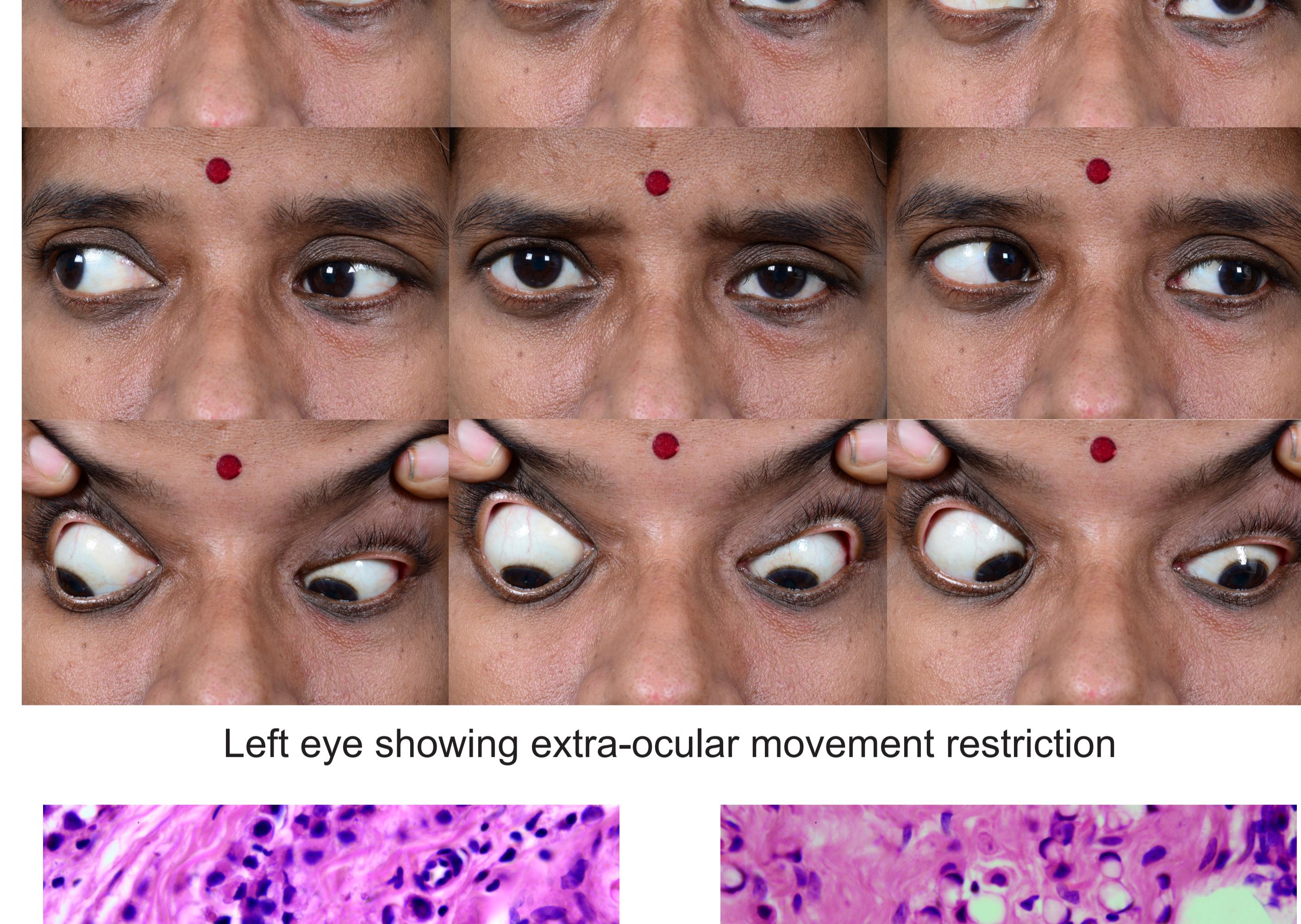
- Metastasis is a rare cause of a mass in the orbit, comprising 3-7% of the cases
- Metastatic cancer can reach orbital soft tissue or bones by hematogenous routes
- It can be from a known as well as from an unknown primary tumor source
- In adults the tumors metastasizing to orbit arise from breast, prostate, lung, kidney, gastrointestinal tract
- In breast cancer; the most common cause of cancer related death in women; orbital metastases have been described in large series in the range of 28.5% to 58.8%
- Patients having a history of breast cancer presenting with proptosis or diplopia should arouse the suspicion of orbital metastases
- Other possible signs and symptoms at presentation include pain, diminished vision, ptosis, and enophthalmos



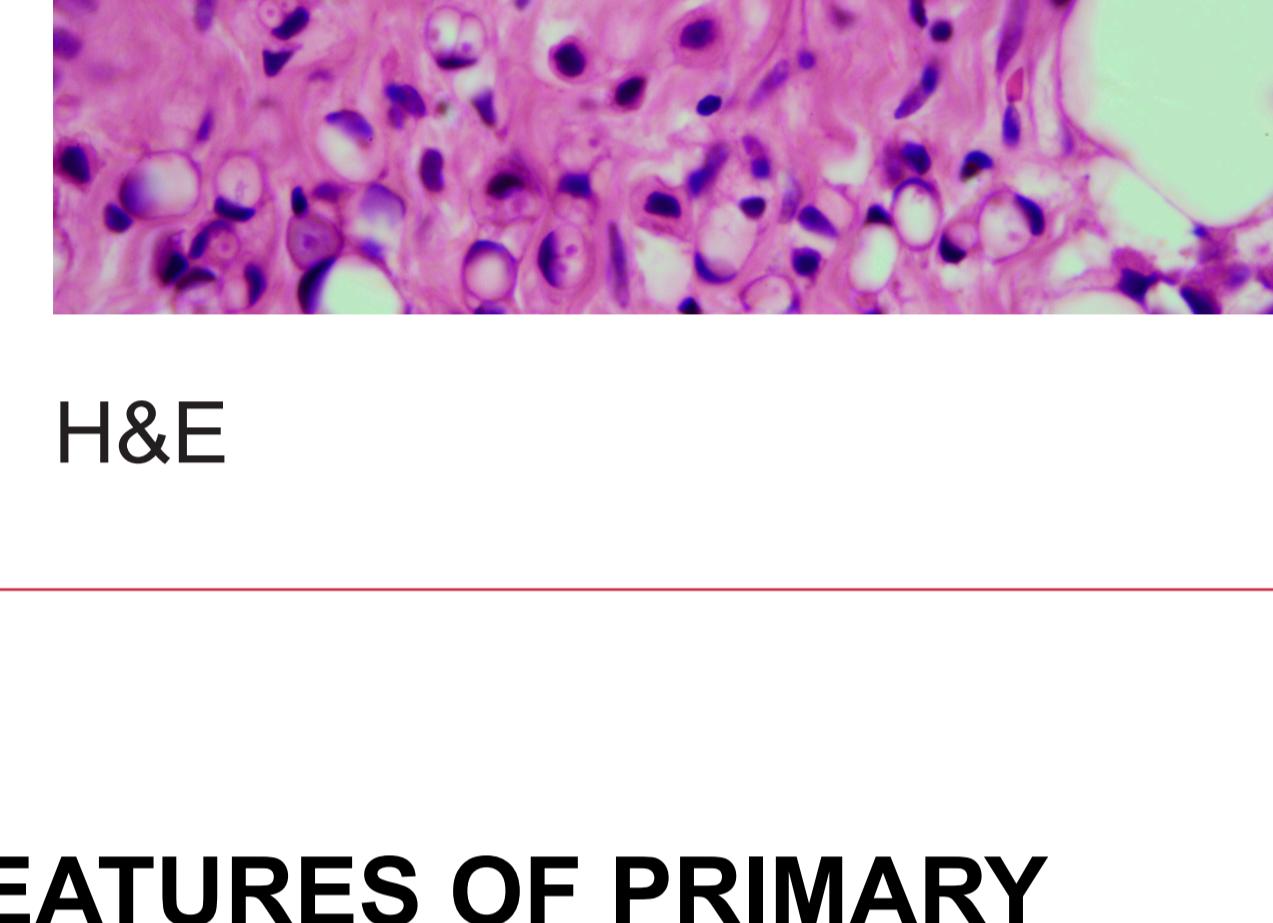
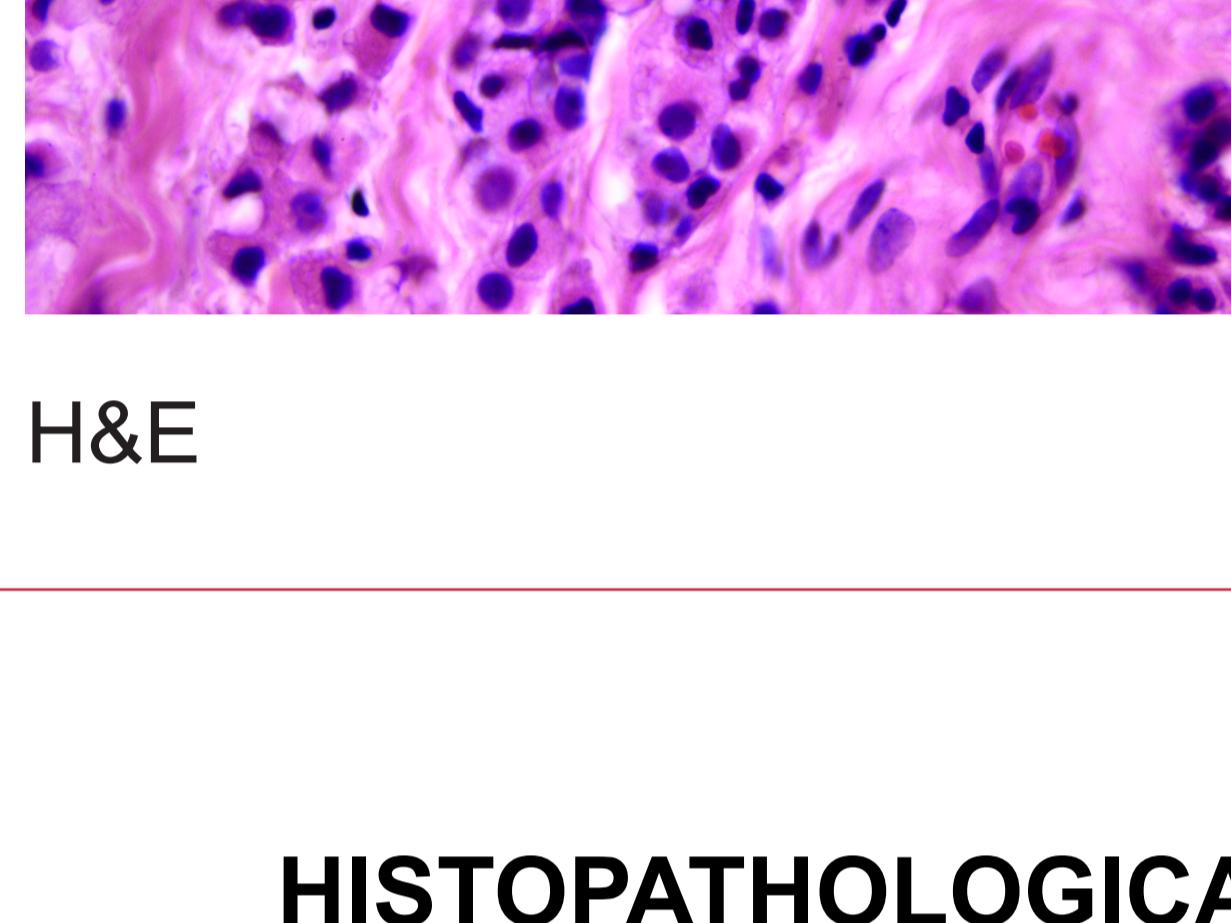
45 years old lady presenting with LE enophthalmos



CT scan- Axial and Coronal: III defined hyperdense lesion in left intraconal and extraconal compartment, infiltrating MR and IR



Left eye showing extra-ocular movement restriction



H&E

H&E

PURPOSE

To study the clinical presentation, histopathology, management, ocular and systemic outcomes in patients with orbital metastases from breast carcinoma

REVIEW OF LITERATURE

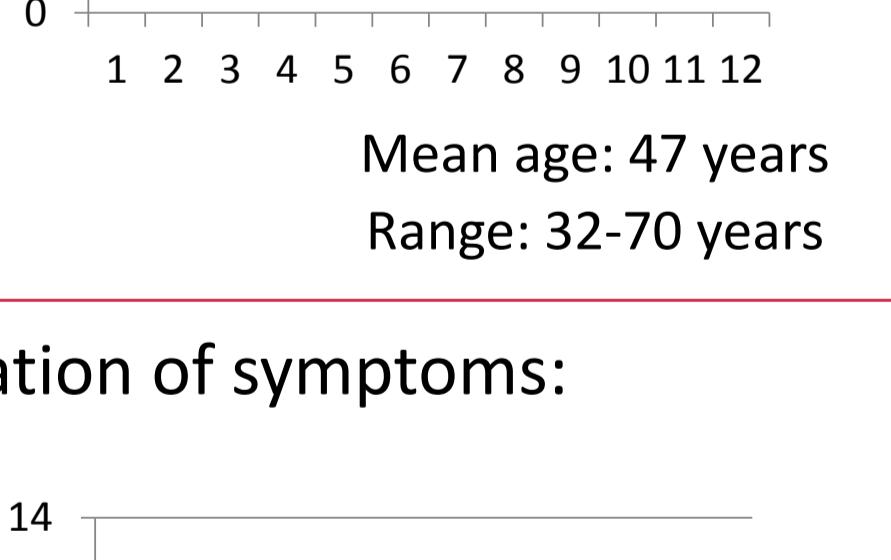
- Metastatic orbital deposits are less common than uveal metastases; the relative incidence reported is approximately 1:8
- Breast cancer is the most common cause of orbital metastases in middle age females
- Orbital metastases from breast carcinoma tends to infiltrate extra ocular muscles and surrounding fat, causing motility defects
- It usually presents with proptosis, with exception of scirrhouus variety which causes paradoxical enophthalmos
- The treatment options for primary tumor includes surgery, chemotherapy, radiotherapy, hormone therapy and targeted therapy
- The treatment of metastasis is usually palliative including radiotherapy, chemotherapy and/or hormonal therapy
- Patients with metastatic breast cancer have poor prognosis; 5 year survival rate is 22%

MATERIAL AND METHODS

- Study design:
- A retrospective, non-comparative, interventional case series
- Study population:
- Twelve consecutive female patients with orbital mass with previously diagnosed breast carcinoma
- Methods: Medical records of patients were reviewed with respect to following aspects-
 - Clinical features at presentation
 - Time since diagnosis of primary disease
 - Metastasis to other organs
 - Histopathological characteristics
 - Immunohistochemical staining pattern for pan-cytokeratin (pan-CK), Cytokeratin 7 (CK7), Cytokeratin 20 (CK20), gross cystic disease fibrillary protein 15 (GCDFP15), estrogen receptor (ER), progesterone receptor (PR) and Her2neu receptors
 - Treatment of primary site as well as metastatic site by chemotherapy and /or stereotactic radiotherapy
 - Ocular and systemic treatment outcomes

RESULTS

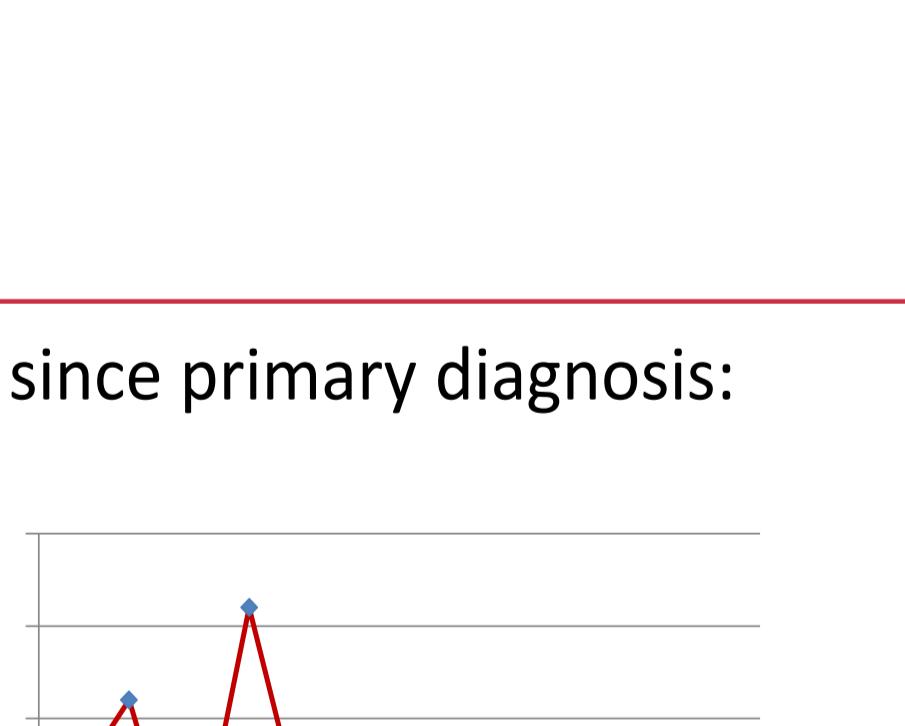
- Demographic data:



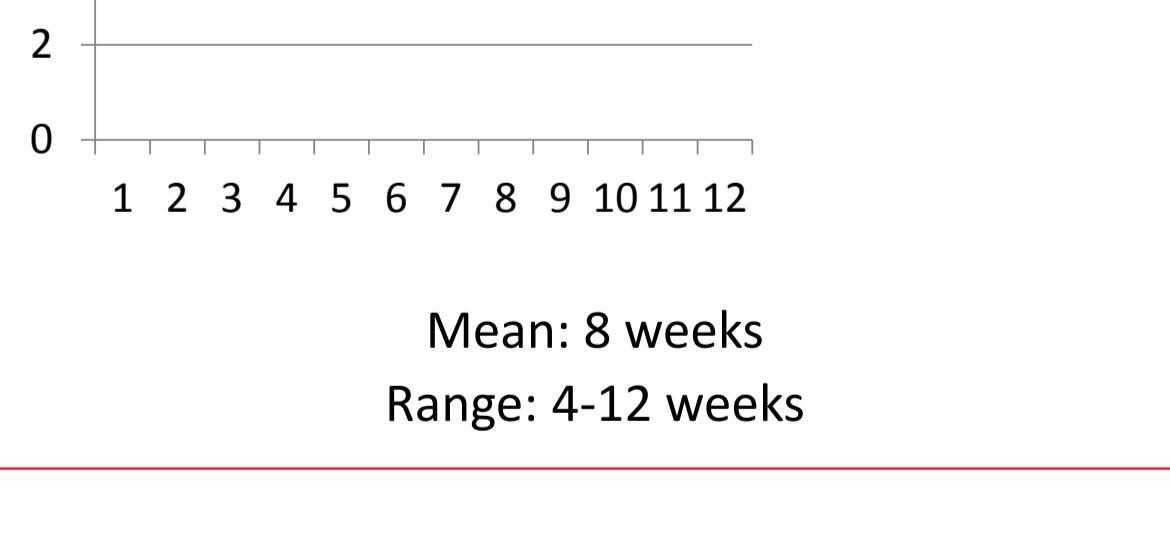
Mean age: 47 years

Range: 32-70 years

- Laterality:



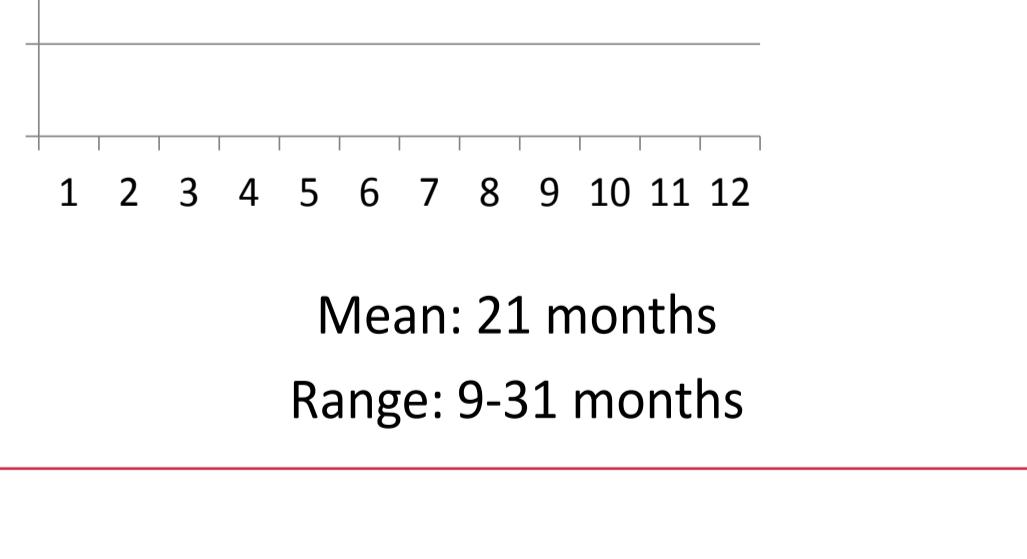
- Duration of symptoms:



Mean: 8 weeks

Range: 4-12 weeks

- Time since primary diagnosis:



Mean: 21 months

Range: 9-31 months

CLINICAL FEATURES AT PRESENTATION

Presenting symptom	Number	Percentage
Diplopia	5	42%
Ptosis	3	25%
Periorbital swelling	3	25%

Examination finding	Number	Percentage
Extra-ocular Movement restriction	12	100%
Enophthalmos	7	58%
Palpable orbital mass	4	33%
Proptosis	3	25%

CT SCAN FINDINGS

Finding	Number	Percentage
Orbital soft tissue and Extra ocular muscle involvement	8	67%
Orbital soft tissue involvement	2	17%
Extra ocular muscle involvement	2	17%
Lacrimal gland involvement	2	17%

Organ involved	Number	Percentage
Bone (Femur, spine, ribs)	3	25%
Lungs	2	17%
Liver	1	8%
Ovary	1	8%

PET CT FINDINGS

Finding	Number	Percentage
Bone	3	25%
Lungs	2	17%
Liver	1	8%
Ovary	1	8%

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HISTOPATHOLOGICAL FEATURES OF PRIMARY AND METASTATIC TUMOR

Case No.	Primary tumor				Metastatic tumor							
	Size (pT)	Nodes (pN)	Metastases (pM)	Stage	Histologic type	ER	PR	Her 2neu	Histologic type	ER	PR	GCDFP-15
1	T2	N2a	MO	IIIa	ILC	+	+	-	Lobular	+	+	+
2	T1c	N2a	MO	IIIa	ILC	-	-	-	Signet ring	-	-	-
3	T1c	N2a	MO	IIIa	ILC	+	+	+	Lobular	+	+	+
4	T1c	N1a	MO	IIa	ILC	+	+	-	Lobular	+	+	-
5	T1b	N3a	MO	IIIc	IDC	-	-	-	Lobular	-	-	+
6	T1c	N2a	MO	IIIa	IDC	+	+	-	Ductal	+	+	+
7	T2	N3a	MO	IIIc	ILC	-	-	-	Lobular	-	-	-
8	T4	N3c	MO	IIIc	IDC	+	+	+	Ductal	+	+	+
9	T2	N3a	MO	IIIc	IDC	+	+	+	Ductal	+	+	+
10	T2	N3a	MO	IIIc	ILC	+	+	-	Lobular + signet ring	+	+	-
11	T1c	N3a	MO	IIIc	ILC	+	+	+	Lobular	+	+	+
12	T1c	N3a	MO	IIIc	ILC	+	+	-	Lobular	+	+	-

MI- Methotrexate+Ixabepilone, AD-Adriamycin+Cyclophosphamide, FAC-5 Fluorouracil + Adriamycin+Cyclophosphamide, P-Paxitaxel, G-Gemcitabine

TREATMENT

Case No.	Treatment of Primary tumor		Treatment of metastatic site	
	Chemotherapy	Radiotherapy	Chemotherapy	Radiotherapy
1	MI + AD + FAC	-	Tamoxifen	+
2	MI + AD + AC + P	+	G + Cp	+
3	MI + AD + AC + P + Trastuzumab	-	Tamoxifen	+
4	MI + AD + FAC	+	Tamoxifen	+
5	MI + AD + AC + P	-	G + Cp	-
6	MI + AD + FAC	+	Tamoxifen	-
7	MI + AD + FAC	-	-	+
8	MI + AD + AC + P + Trastuzumab	-	G + Cp + Tamoxifen	+
9	MI + AD + AC + P + Trastuzumab	-	-	+
10	MI + AD + FAC	+	Tamoxifen	+
11	MI + AD + AC + P + Trastuzumab	-	Tamoxifen	+
12	MI + AD + AC + P	-	-	+

- Duration of follow up:

