

# PRIMARY MEDIASTINAL CORIOCARCINOMA IN A MALE CHILD: CASE REPORT



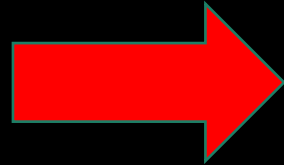
# OBJECTIVES

- ✓ To review the clinical history, radiological images and evolution of a case of primary mediastinal choriocarcinoma.
- ✓ Discussion of mediastinal germ cell tumors: classification and main features; with emphasis on primary mediastinal choriocarcinoma.
- ✓ Conclusions.

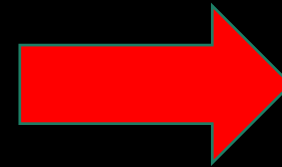


FIRSTBORN, EUTOCIC DELIVERY  
COMPLETE VACCINATIONS  
NO PREVIOUS HOSPITALIZATIONS  
NO PREVIOUS ILLNESSES  
APPARENTLY HEALTHY FAMILY MEMBERS  
**UNDER STUDY SINCE 7 FOR PUBIC HAIR  
GROWTH, CHANGE IN VOICE TONE AND  
GYNECOMASTIA**

11 days ago:  
Rigth  
Throbbing  
chest pain and  
intermitent  
fever (38-39°)



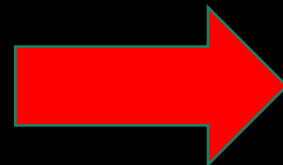
Treated with  
analgesics.  
7 days ago:  
Decreased  
appetite



5 days ago:  
Dry cough,  
fatigue and  
continous  
fever (3/d)

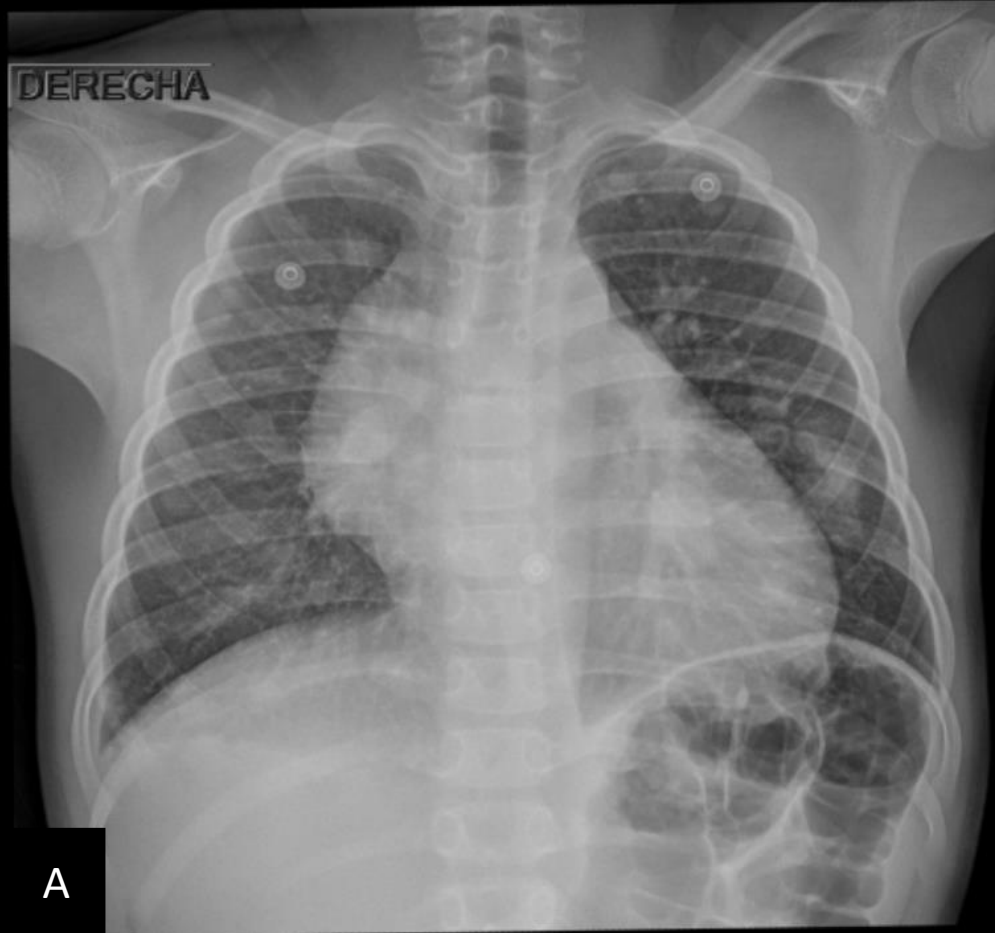


Treated at home  
with NSAIDs and  
Acetaminophen.  
Starts requering  
pillows to sleep  
and have difficulty  
speaking



Today:  
Referred to  
emergency from  
outpatient clinic  
due to respiratory  
difficulty, is  
intubated.





THE ANTEROPOSTERIOR (A) AND LEFT LATERAL (B) CHEST X-RAYS SHOW **MARKED WIDENING OF THE MEDIASTINUM** WITH INCREASED CARDIAC SILHOUETTE AND **MULTIPLE NODULAR LESIONS IN BOTH LUNG FIELDS.**

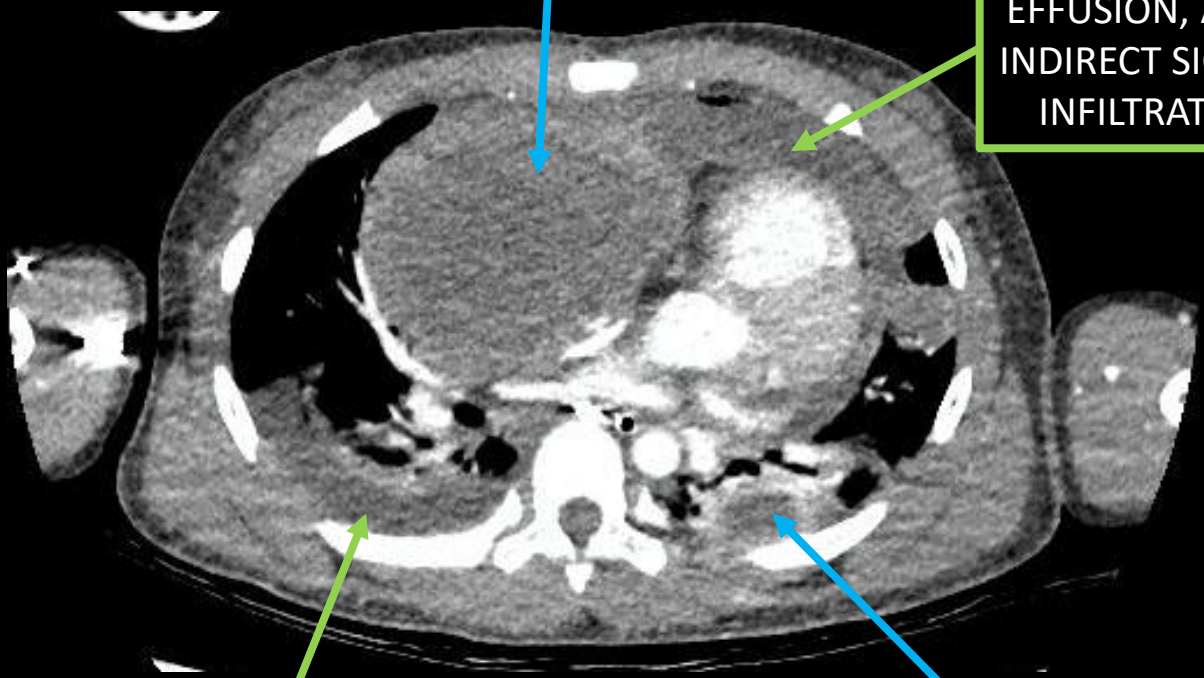
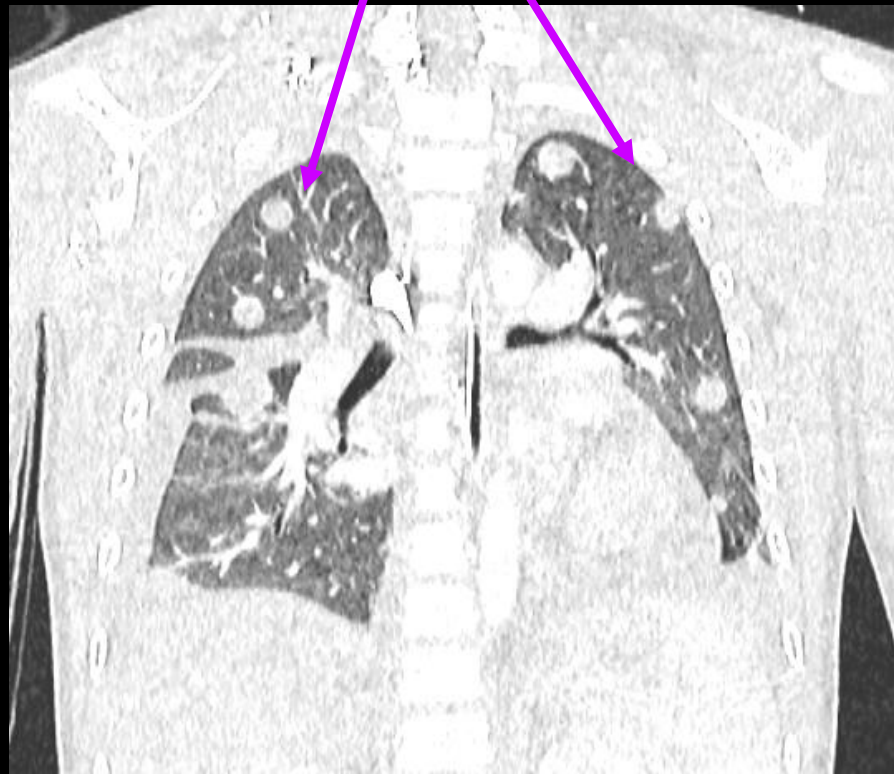
HETEROGENEOUS HYPODENSE LESION IN PREVASCULAR  
MEDIASTINUM, POORLY CONTRAST-ENHANCING,  
MEASURING 117 X 73 X 110 MM (T X AP X L), DISPLACING  
VASCULAR STRUCTURES AND HEART TO THE LEFT

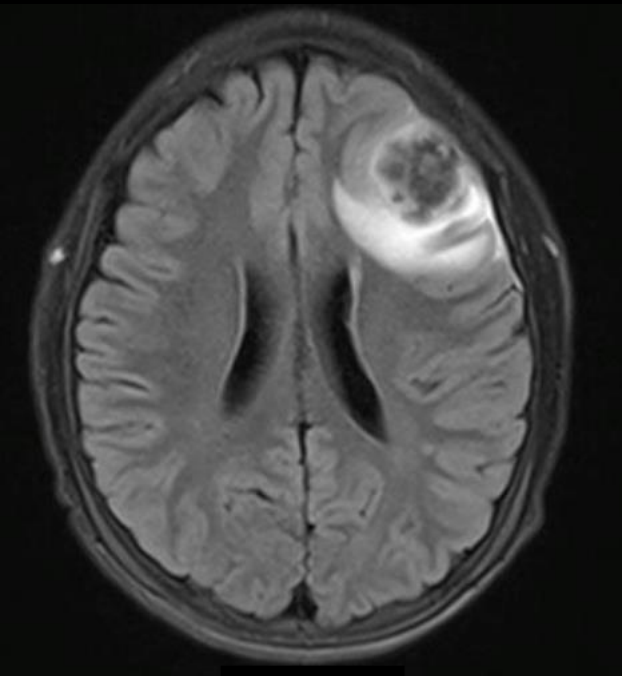
ASSOCIATED WITH MULTIPLE METASTATIC NODULAR  
LESIONS IN DIFFERENT LUNG SEGMENTS SUGGESTIVE  
OF CANNOBALL MESTASTASES

PERICARDIAL  
EFFUSION, AS AN  
INDIRECT SIGN OF  
INFILTRATION

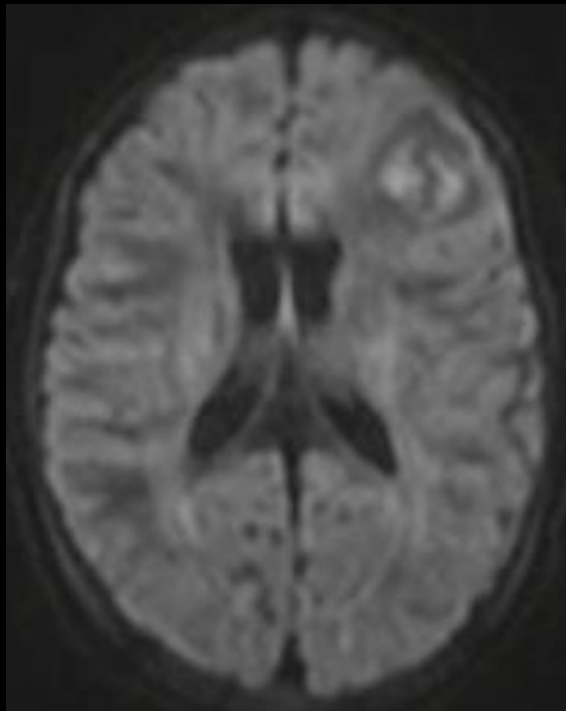
PLEURAL EFFUSION  
PREDOMINANTLY  
ON THE RIGHT SIDE

ANOTHER LESION WITH SIMILAR  
CHARACTERISTICS WITH SMALLER  
DIMENSIONS IN THE POSTERIOR  
MEDIASTINUM

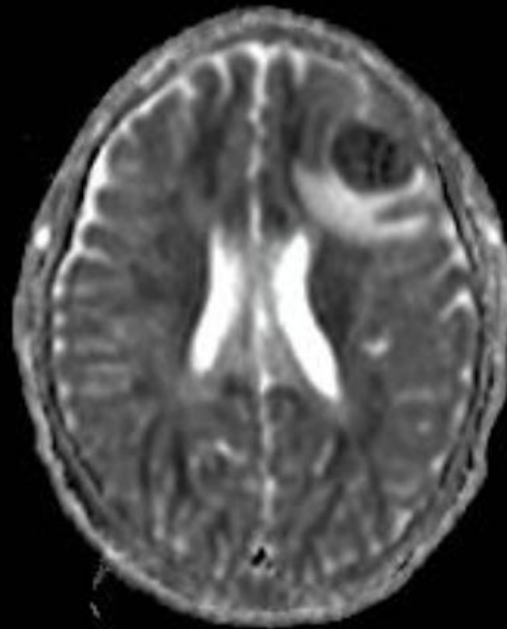




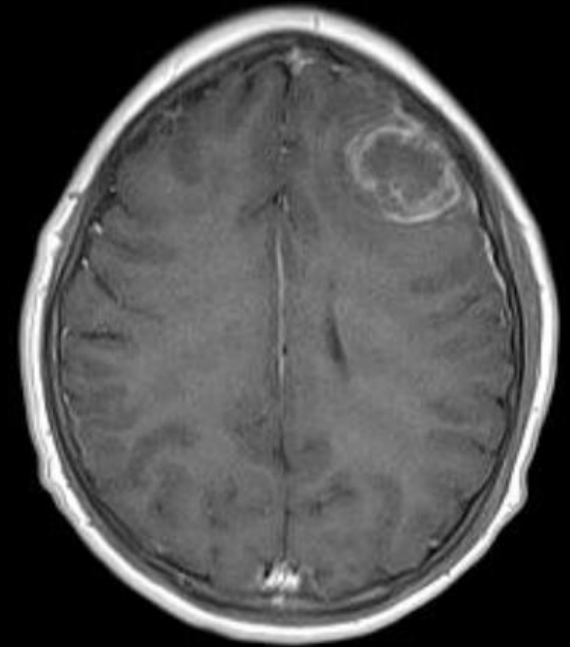
FLAIR



DWI



ADC



T1 + GD

INTRAXIAL HETEROGENEOUS SOLID EXPANSIVE LESION WITH SOME CENTRAL CYSTIC AREAS LOCATED TOWARDS THE LEFT FRONTAL CONVEXITY, **ASSOCIATED VASOGENIC EDEMA** , PRESENTS **DIFFUSION RESTRICTION** AND **SCARCE ENHANCEMENT AFTER CONTRAST ADMINISTRATION**, MEASURES DT:23MM X DAP:21MM, CONTACTED WITH DURA MATER. VENTRICULAR SYSTEM PRESERVED.NO SIGNIFICANT DISPLACEMENT OF THE CEREBRAL MIDLINE. FINDINGS HIGHLY SUGGESTIVE OF BRAIN METASTASIS.

# **DISCUSSION AND DIAGNOSIS**



**Mediastinal germ cell tumors**

WHO 4th edition

1°

SEMINOMATOUS

3°

NO SEMINOMATOUS

2°

TERATOMA

YOLK SALC TUMOR

EMBRYONAL  
CARCINOMA

CHORIOCARCINOMA

**MIXED GERM CELL TUMORS**  
(composed of 2 or more cell lines)

Germ cell tumor with  
SOMATIC TYPE  
SOLID MALIGNANCY

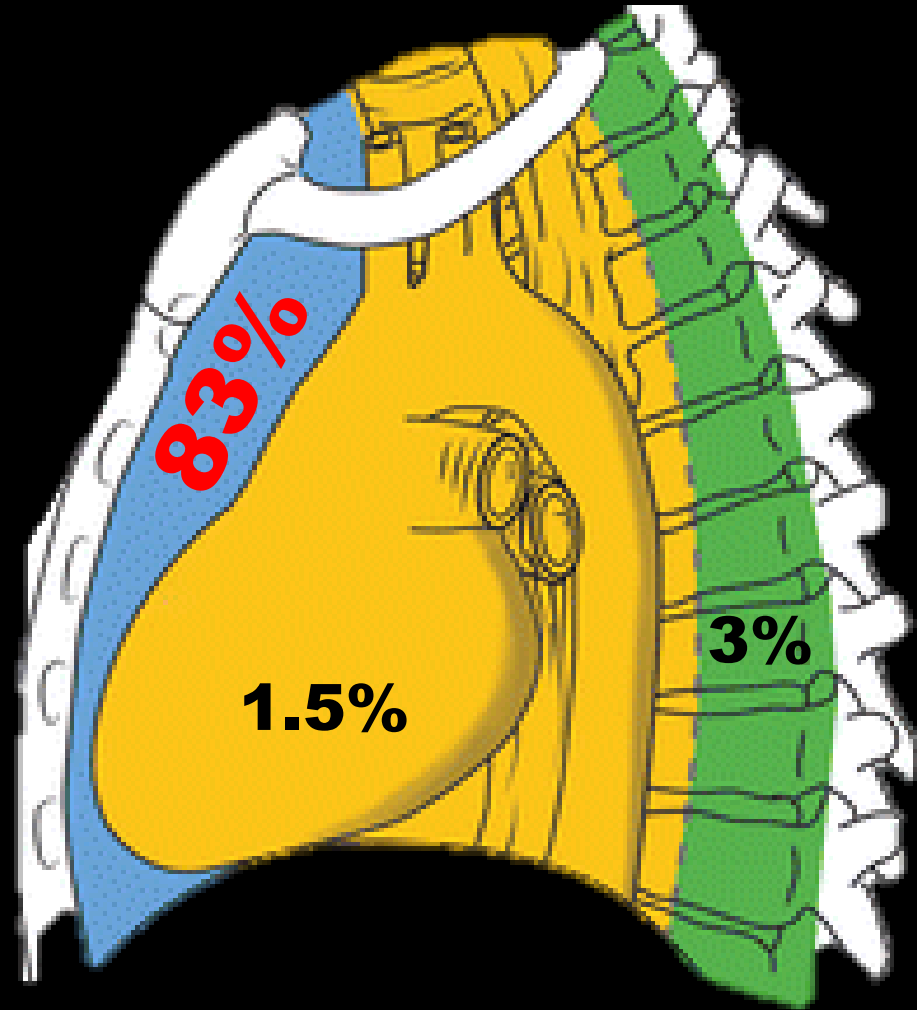
Germ cell tumor with  
ASSOCIATED  
HEMATOLOGICAL  
MALIGNANCY



**Most germ cell tumors are diagnosed in YOUNG MEN**

M:F = 50: 1

Age of Dx: 18-29 (48.5%)



**Mixed 13%**

# ZO-TACOG



SEMINOMATOUS



**B  
I  
O  
M  
A  
R  
K  
E  
R  
S**

**SEMINOMATOUS**

BHCG < 1000  
LDH

**TERATOMA**

AFP  
frequently

**YOLK SALC  
TUMOR**

INSULIN\*\*

**EMBYONAL  
CARCINOMA**

AFP, in rare cases,  
more frequently  
in mixed germ cell  
tumors  
LDH

\* BHCG > 1000 is consistent with choriocarcinoma

\*\* in rare cases may contain pancreatic endocrine cells, which produce insulin and hypoglycemia

## SEMINOMATOUS

Homogeneous mass  
Low enhancement  
No invasiva

### Clinical Symptoms:

- ❖ Symptomatic due to mass efect

### Prognosis:

- ❖ Survival at 5 years : 88-100%
- ❖ Correlates with high LDH levels

## TERATOMA

*Tumour with different tissue types*

**Mature:** well differentiated, mature cell lines  
**Immature** poorly differentiated, embryonic/fetal tissue

Mass with different type of tissues (fat, calcifications). Cystic component, helps to differentiate from other tumors.

### Prognosis:

- ❖ Good prognosis after surgical resection

# NO SEMINOMATOUS

## YOLK SALC TUMOR

Heterogeneous mass  
High enhancement  
Invasive  
Typically without calcifications  
MRI: Cystic áreas with significant  
difusión restriction

With pulmonary metastases at the time of  
diagnosis

### Prognosis:

Poor, survival up to 40%

\*\*< 5 years and female, think almost  
exclusively of this tumor.



## EMBYONAL CARCINOMA

Largr mas WITHOUT ENHANCEMENT  
Compresses and invades large vessels

Pulmonary, lymph node and hematologic metastasis

### Prognosis:

Poor, immunotherapy treatment (under  
investigation)

Uncommon tumor, almost  
exclusive to men over 30



# PRIMARY MEDIASTINAL CHORIOCARCINOMA

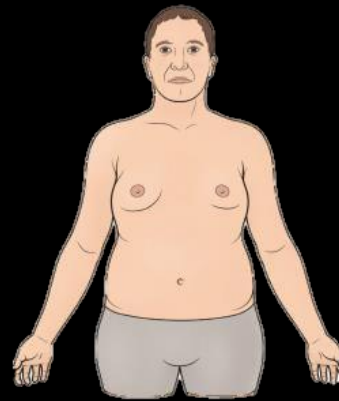
**“Mediastinal choriocarcinoma without a detectable primary in the gonads or metastatic disease in the retroperitoneal lymph nodes”**

Extremely rare, less than 50 cases reported to date

Nearly exclusive of young men.

Associated with Klinefelter Syndrome (10 times more frequent)

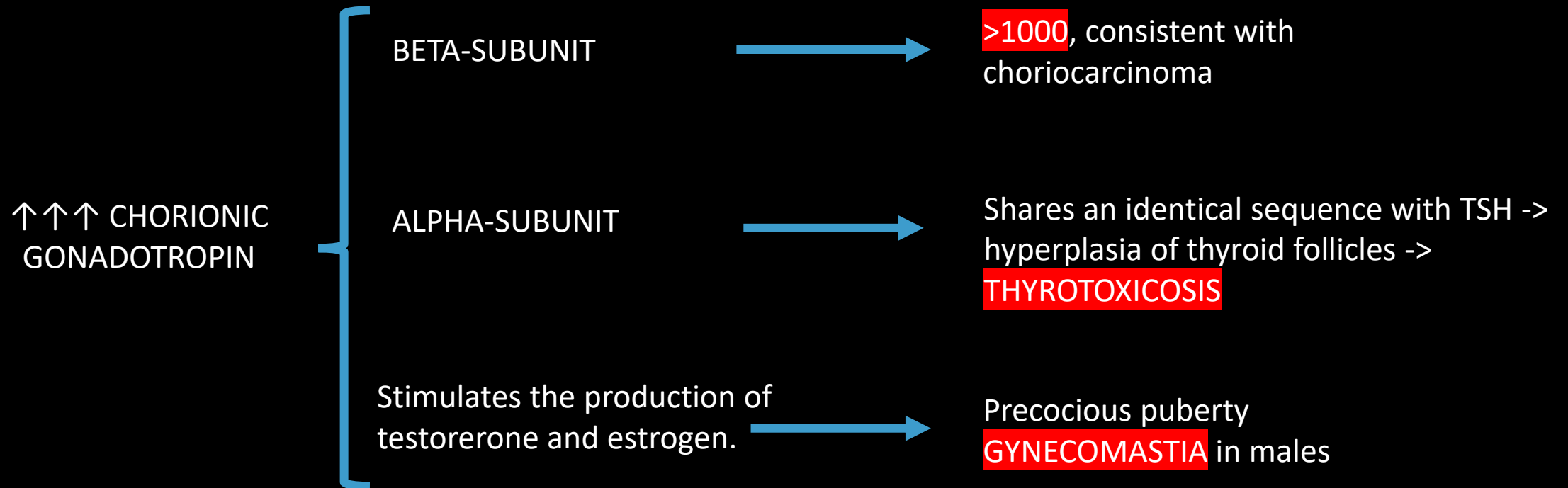
Usually asymptomatic. In advanced cases presents with the triad of dyspnea, cough and gynecomastia



Clinical  
Presentation

# PRIMARY MEDIASTINAL CHORIOCARCINOMA

## DIAGNOSIS

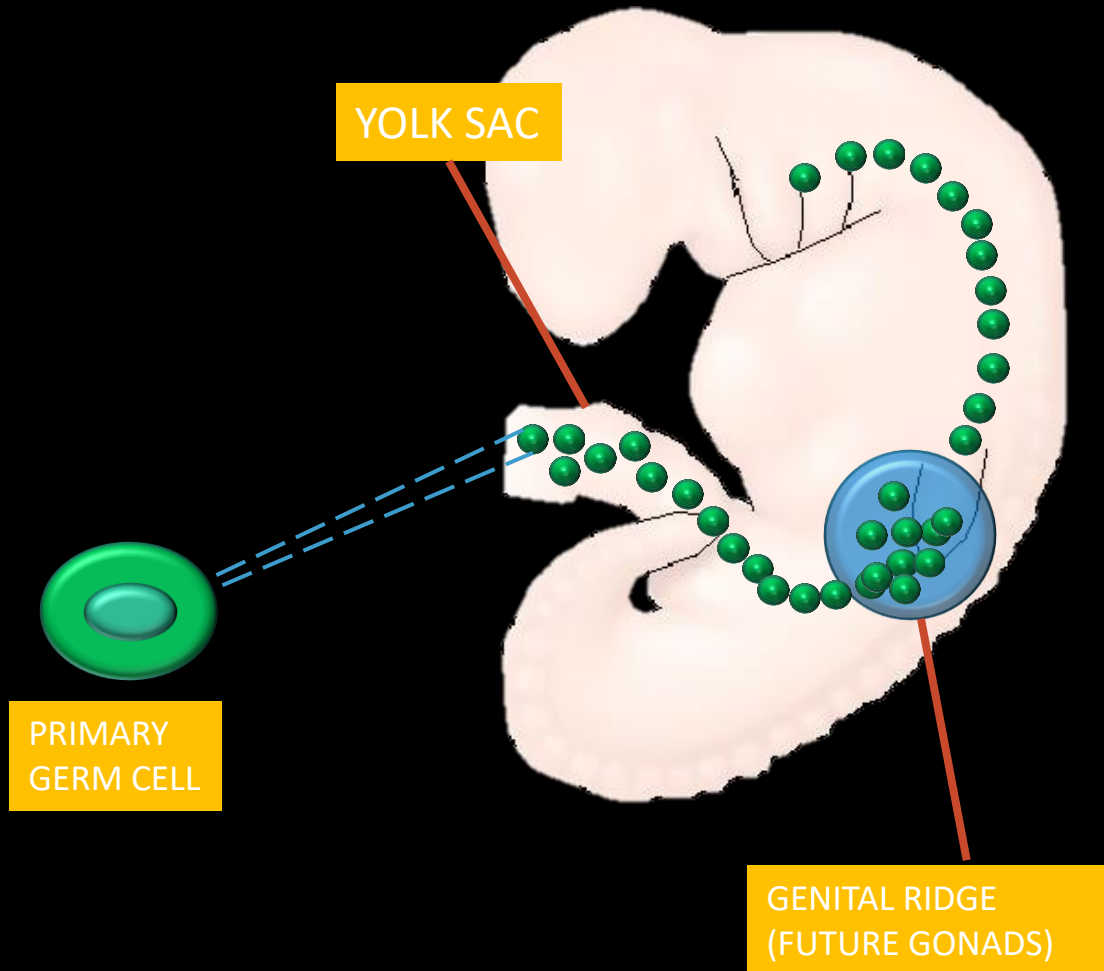


**DIAGNOSIS CERTAINTY:** Increased serum levels of *B- hCG* and presence of *cytotrophoblast intermixed with syncytiotrophoblast* at pathology exam



# PRIMARY MEDIASTINAL CHORIOCARCINOMA

## E T I O L O G Y



They normally migrate along side the genital ridge to localice at the future gonads

An arrest anywhere in this path may lead to a primary mediastinal Choriocarcinoma

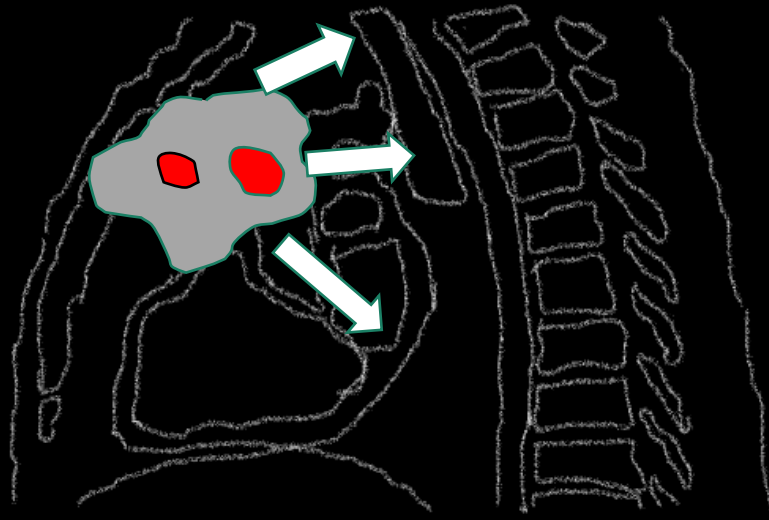
These cell can remain dormant unitl puberty or later sexual life, when some stimulus can causa them to mature into a tumor mass

# PRIMARY MEDIASTINAL CHORIOCARCINOMA

Large solid mediastinal mass mostly in the prevascular mediastinum with poor defined margins

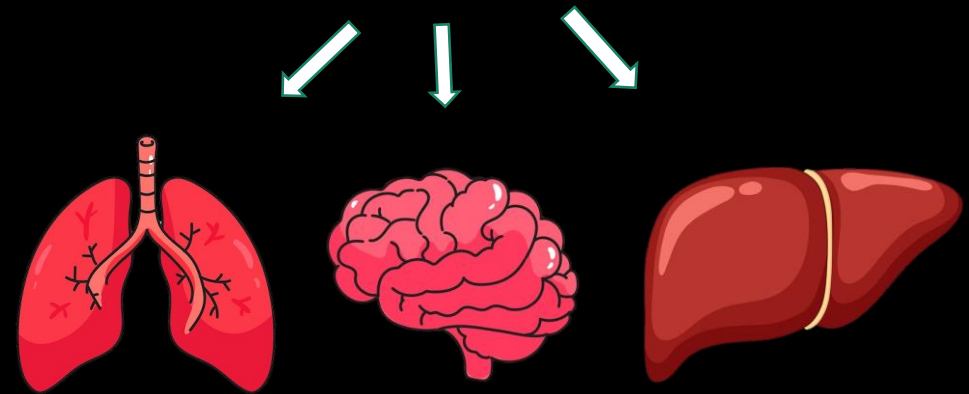
I  
M  
A  
G  
I  
N  
G

HIGHLY LOCALLY INVASIVE



Great vessels: SVC obstruction  
Pericardium: effusion --> tamponade  
Pleura: effusion

HIGHLY METASTASIC



LUNG **"CANNONBALL METASTASES"**

LIVER  
LYMPH NODES  
KIDNEY  
BRAIN

# PRIMARY MEDIASTINAL CHORIOCARCINOMA

T  
R  
E  
A  
T  
M  
E  
N  
T



Reduced number of cases → lack for protocols and adequate consens of management

Inspecificity in symptoms usually → late diagnosis, usually when metastasis is already present.



Not usually a viable option due to the aggressiveness and the promptly with witch it generates metastasis

**THIS LEAD TO A POORER PROGNOSIS THAN ITS TESTICULAR COUNTERPART**

# CONCLUSIONS

- ✓ Germ cell tumors and most importantly primary mediastinal choriocarcinoma is an infrequent entity, which leads to a late diagnosis and a lack of established treatment.
- ✓ This, together with its aggressive behavior and frequent presence of metastasis at diagnosis, makes it a highly lethal condition.
- ✓ Knowledge of their characteristics and suspicion in pediatric patients with hormonal alterations play a fundamental role for a timely treatment and a better prognosis.