

# TUMORES DEL SISTEMA NERVIOSO CENTRAL

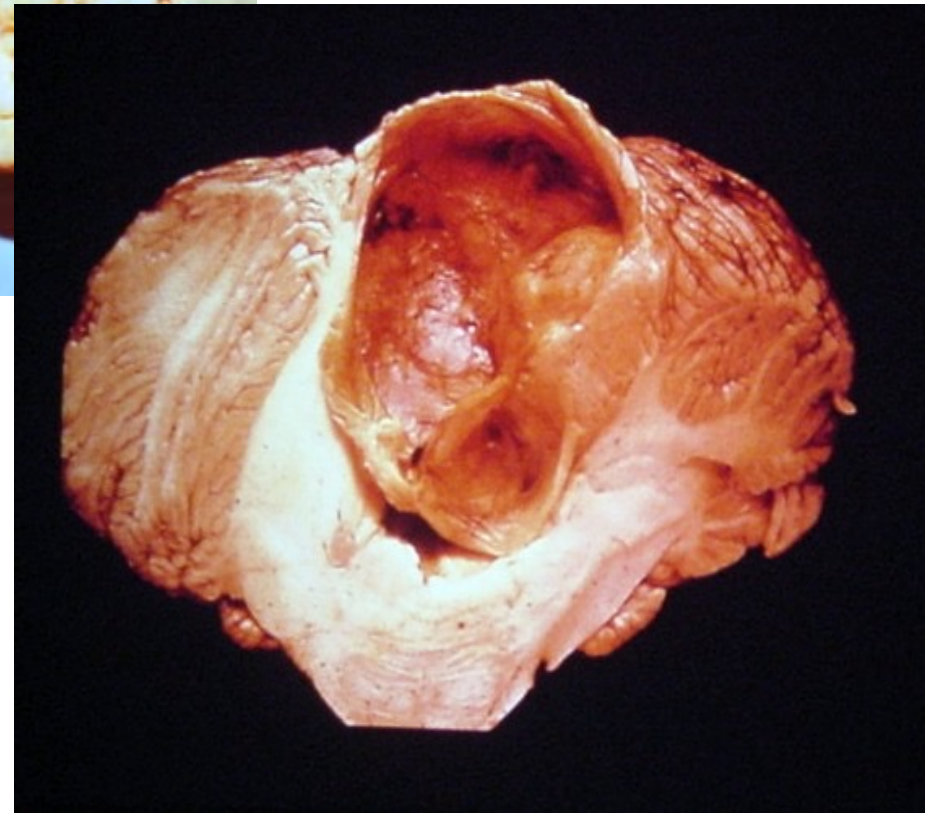
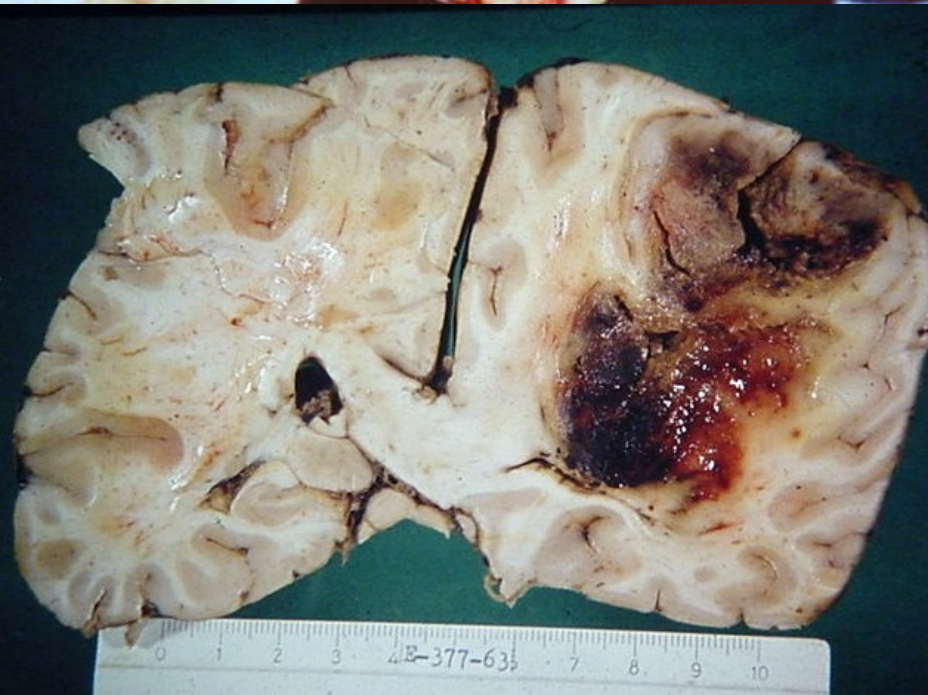
## NEUROCIROUGÍA GUÍADA POR NAVEGACIÓN

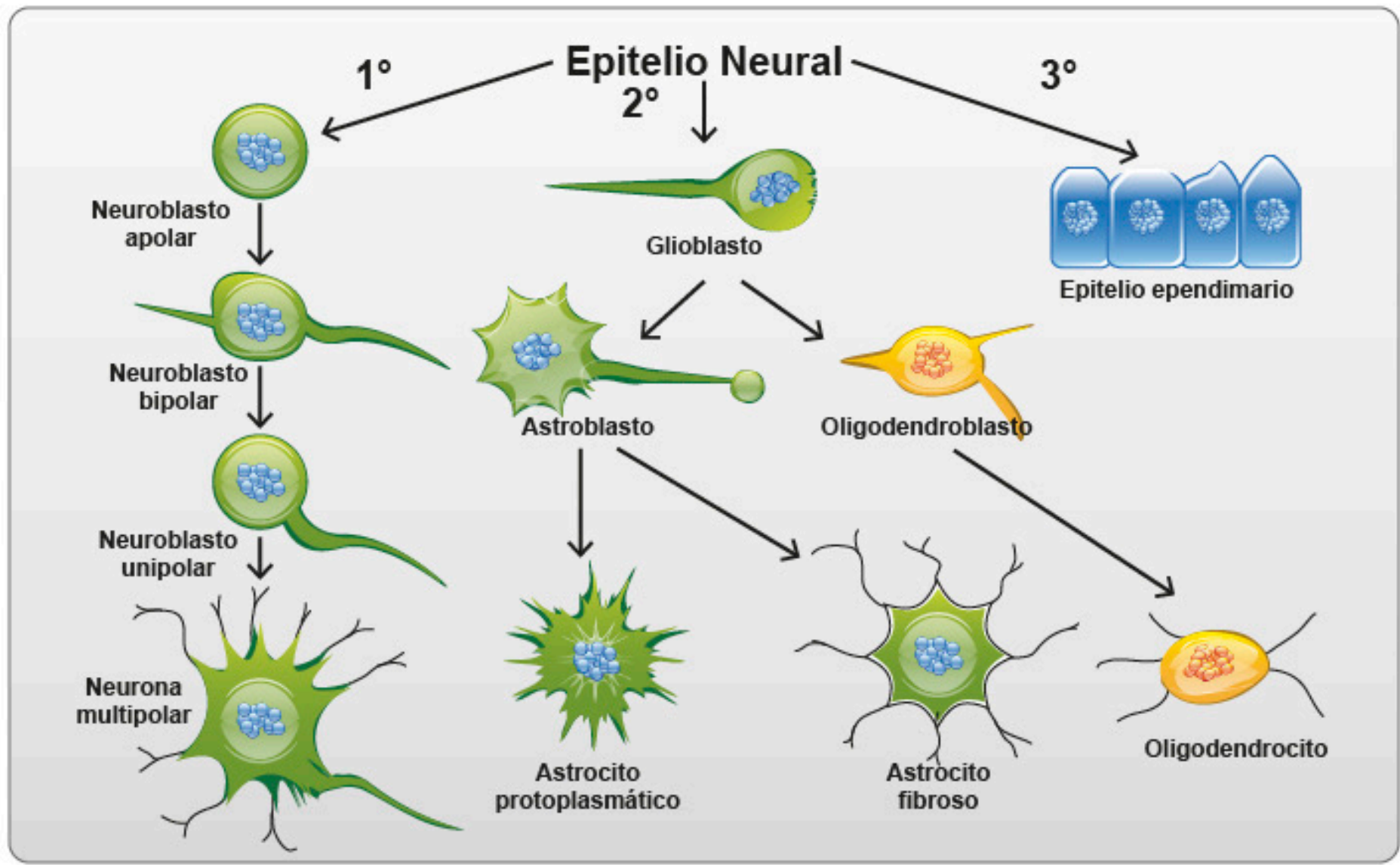


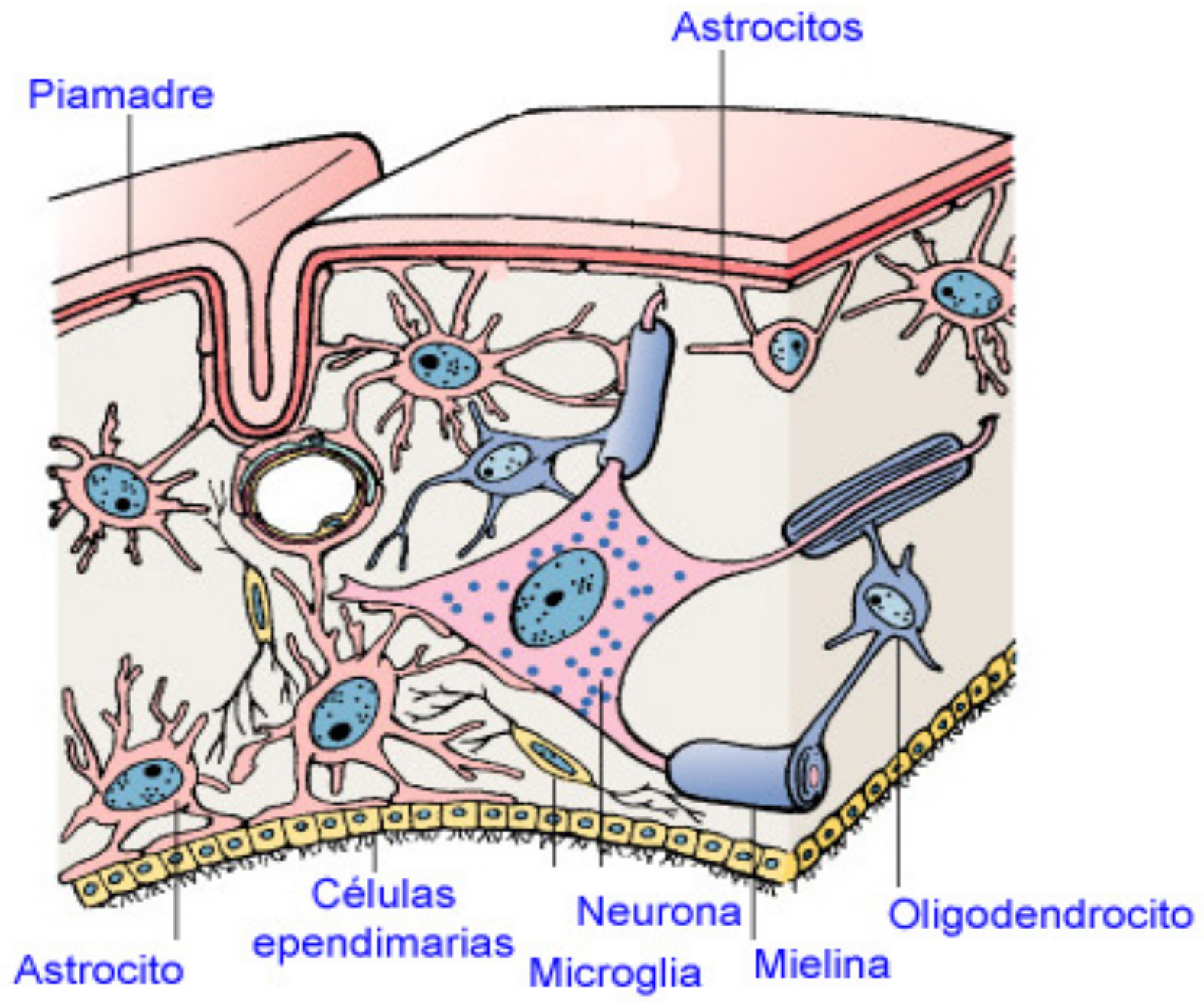
**MEDINAV**  
Médicos Especialistas Navales

DR. ENRIQUE DE OBIETA CRUZ.  
NEUROCIROJANO

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# GENERALIDADES

- 1. Alrededor de 10 a 15% de todas las neoplasias del organismo corresponden a tumores del Sistema Nervioso Central (SNC).**
- 2. Aproximadamente el 3% de las muertes por cáncer son tumores cerebrales.**
- 3. Los gliomas corresponden al 50% de los tumores primarios del SNC.**
- 4. En los niños los gliomas y los tumores neuroectodérmicos constituyen el 50% de todos los tumores del SNC.**

# CLASIFICACIÓN

- Los tumores primarios se clasifican según el tipo de células dominantes y se gradúan si presentan o no características patológicas estandarizadas.
- Multiplicidad de clasificaciones:
  - Virchow (1860).
  - Bailey y Cushing (1926).
  - Kernohan (1949).
  - OMS (1979 – 2007).

# CLASIFICACIÓN OMS

**Grado I** bajo potencial proliferativo, de naturaleza frecuentemente discreta y posibilidad de curación al cabo de la resección quirúrgica sola.

**Grado II** infiltrantes y de baja actividad mitótica pero que recidivan. Algunos tipos de tumores tienden a avanzar a grados más altos de degeneración.

**Grado III** lesiones de neoplasia histológica probada, en forma de actividad mitótica, capacidad de infiltración claramente expresada y anaplasia.

**Grado IV** actividad mitótica que las hace propensas a la necrosis y, en general, se relacionan con mala evolución prequirúrgica y posquirúrgica.

# CLASIFICACIÓN

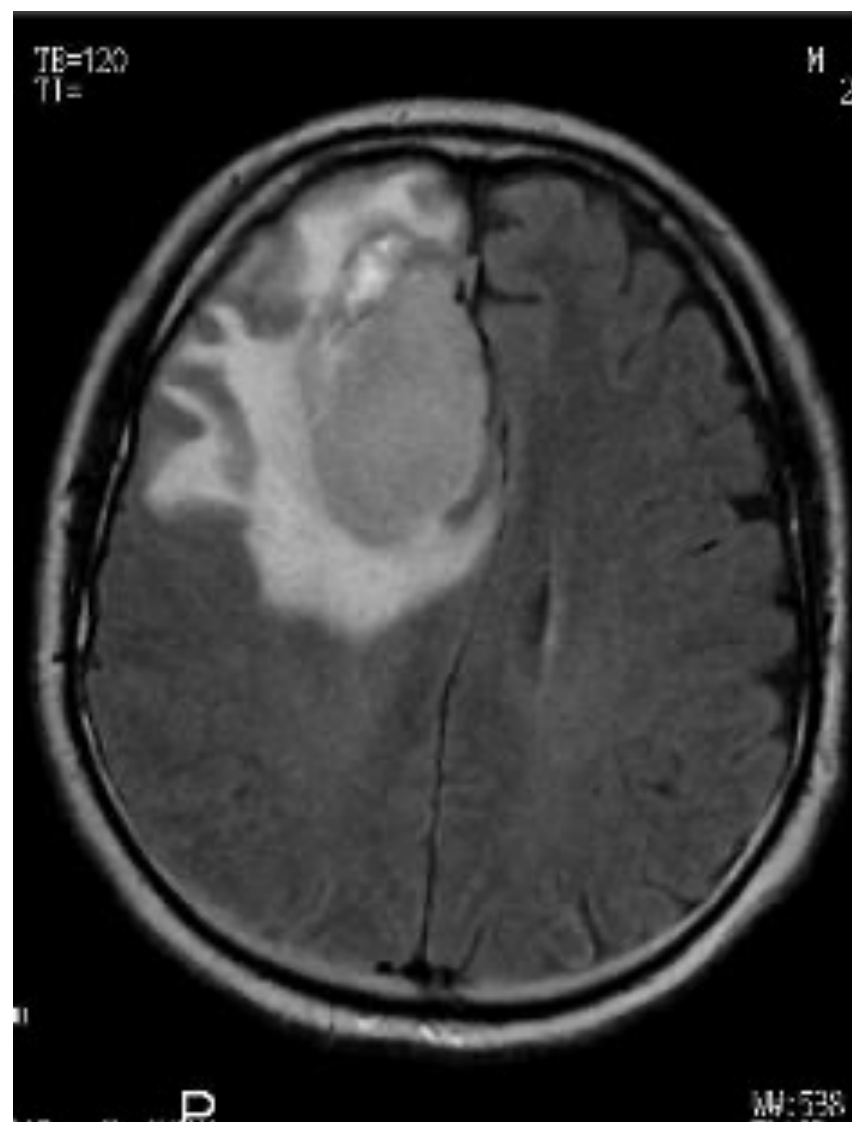
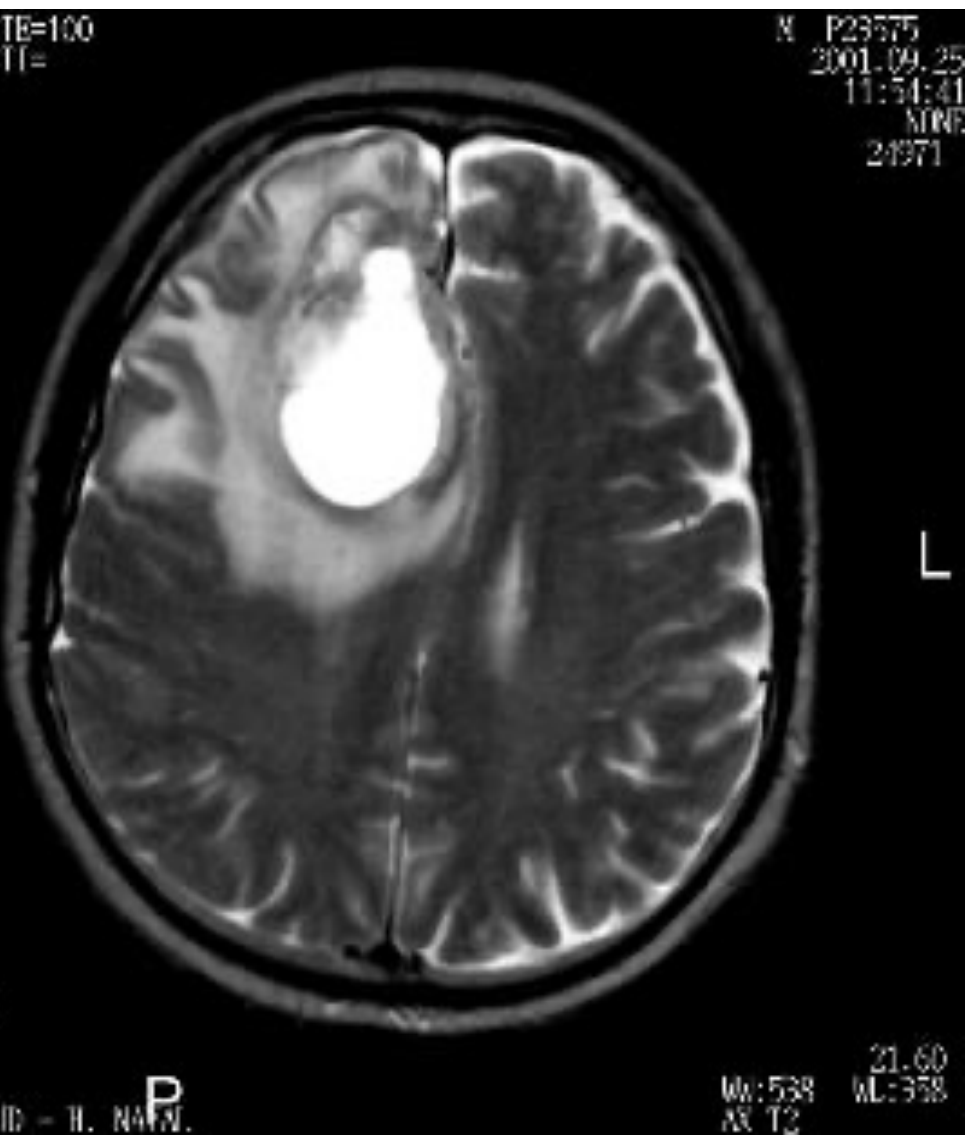
- ASTROCITOMAS
- OLIGODENDROGLIOMAS
- TUMORES EPENDIMARIOS
- TUMORES NEURONALES Y MIXTOS
- TUMORES MENÍNGEOS Y MESENQUIMATOSOS
- TUMORES DE LA REGIÓN PINEAL
- TUMORES NEUROECTODÉRMICOS PRIMITIVOS
- TUMORES DE NERVIOS CRANEALES (SCHWANNOMAS)
- LINFOMAS
- TUMORES DE PLEXOS COROIDES

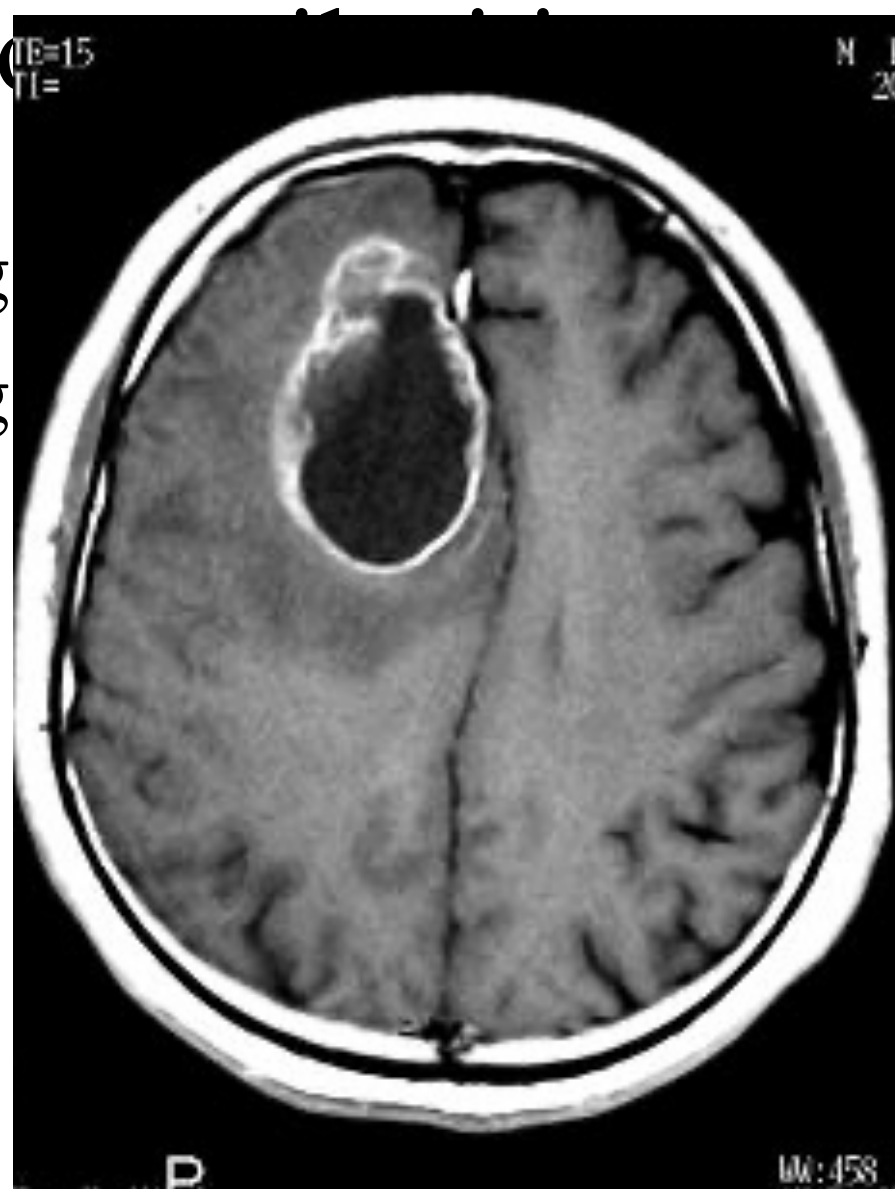
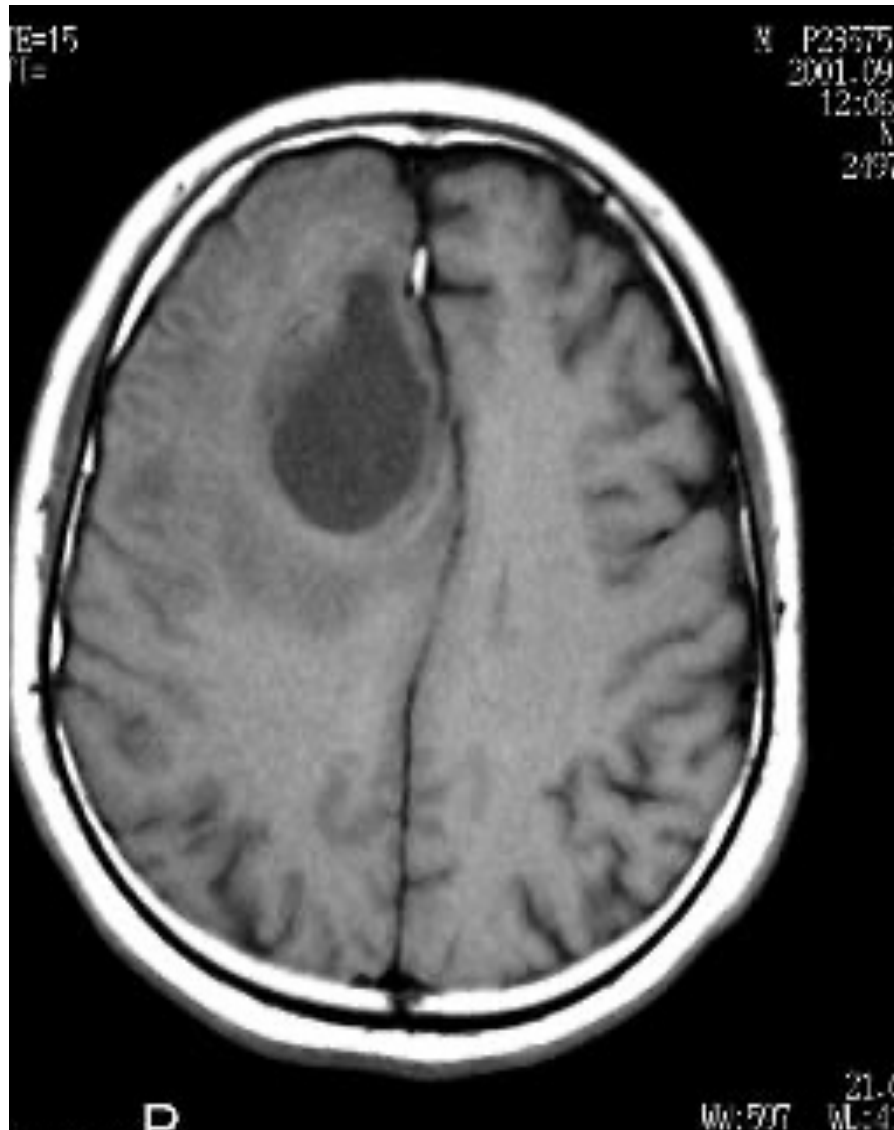


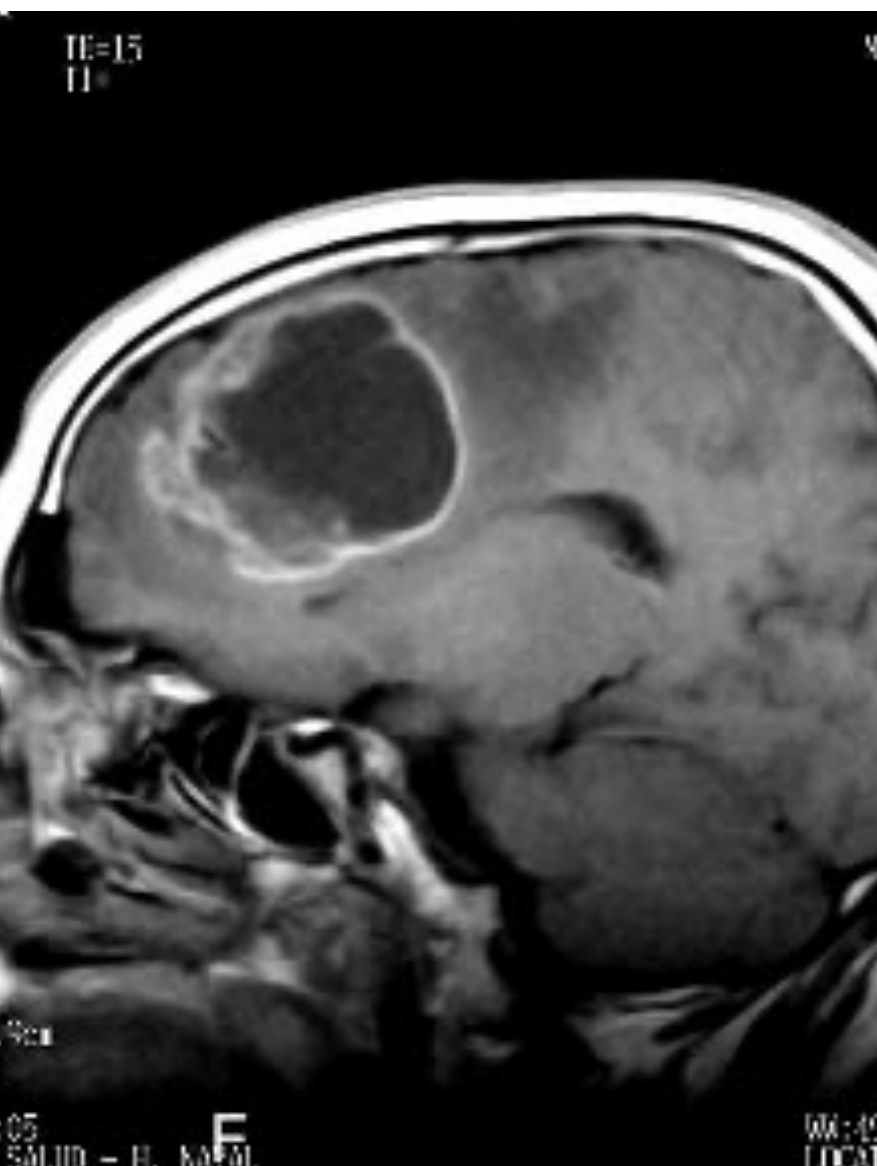
# EPIDEMIOLOGÍA

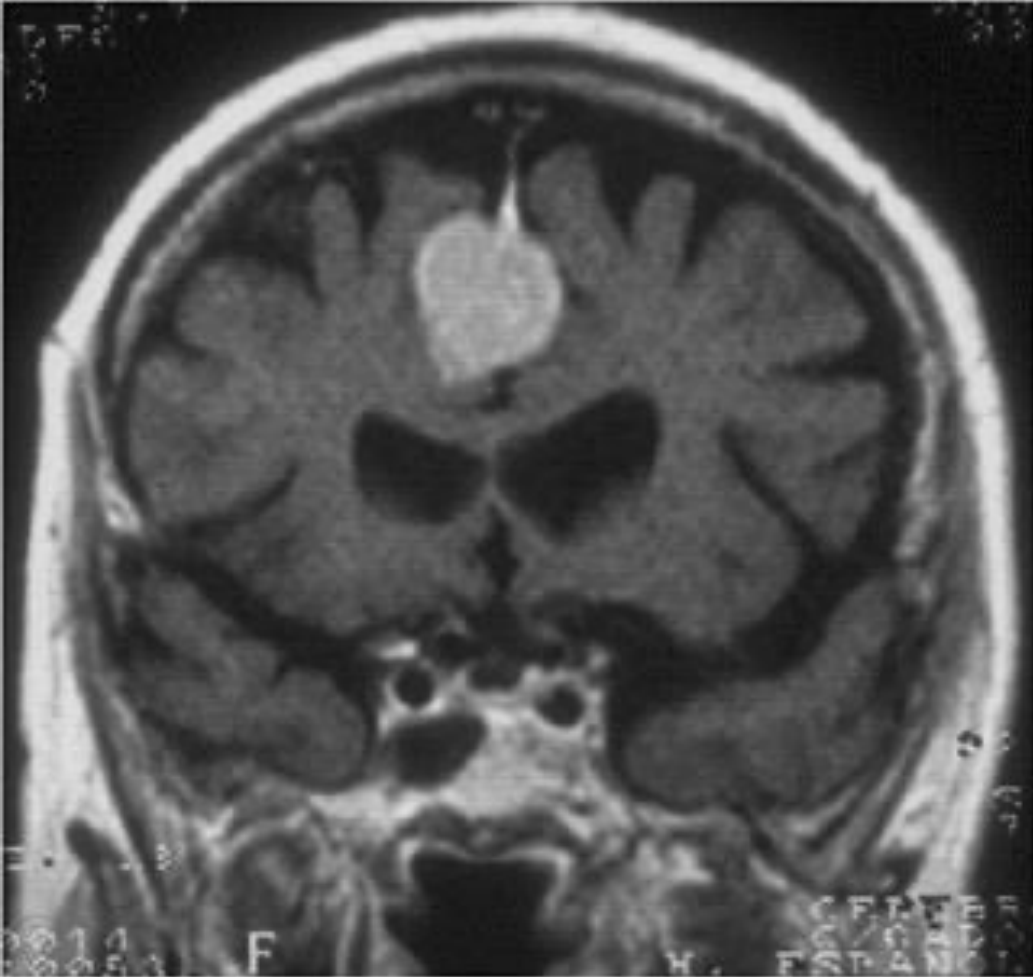
Tabla 1. Frecuencia de los tumores cerebrales primarios.

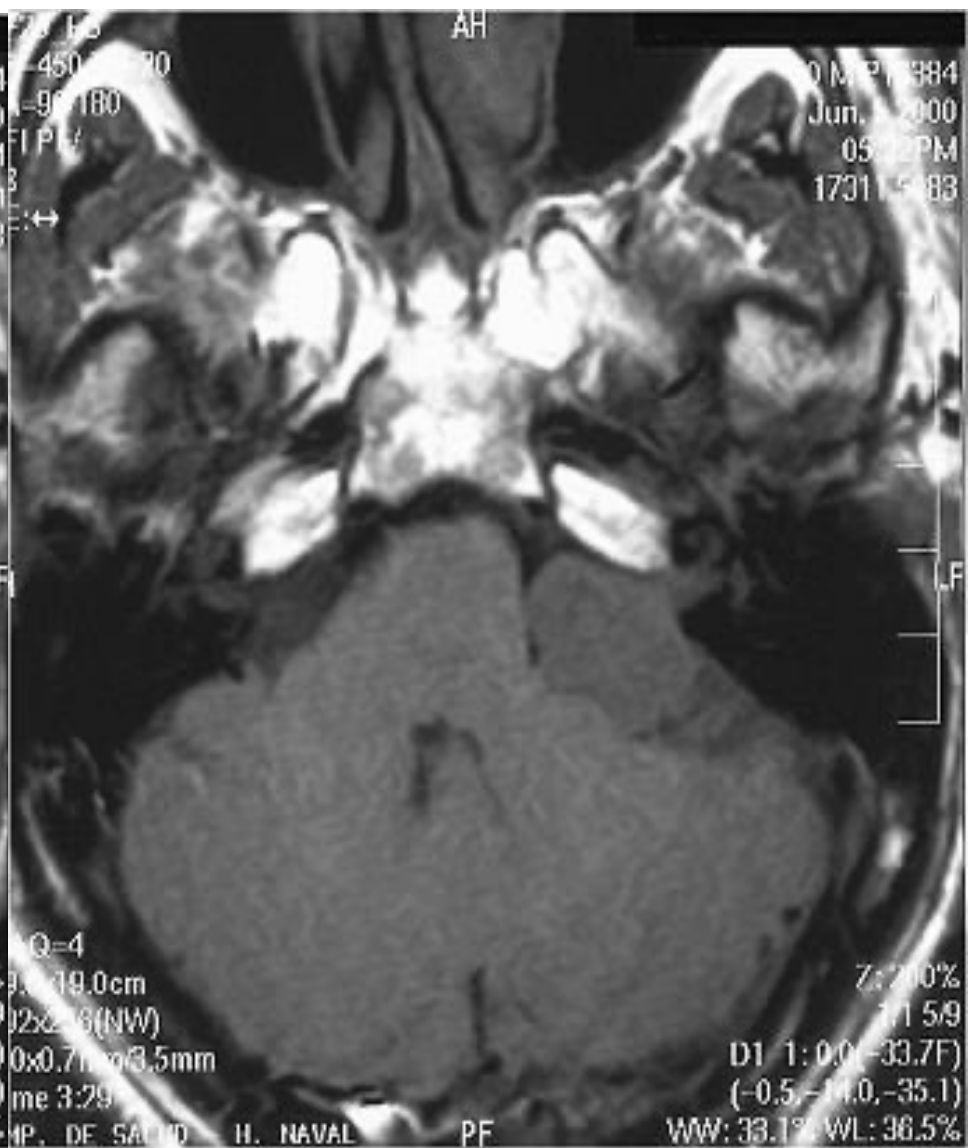
Tipo	Frecuencia (%)
Glioblastoma multiforme (grado IV-OMS)	30
Astrocitomas (grados I a III de la OMS)	20
Otros gliomas (ependimoma, oligodendroglioma, meduloblastoma)	7
Meningioma	18
Tumores de la vaina nerviosa (neurinoma)	9
Tumores de la glándula pituitaria	5
Otros	11





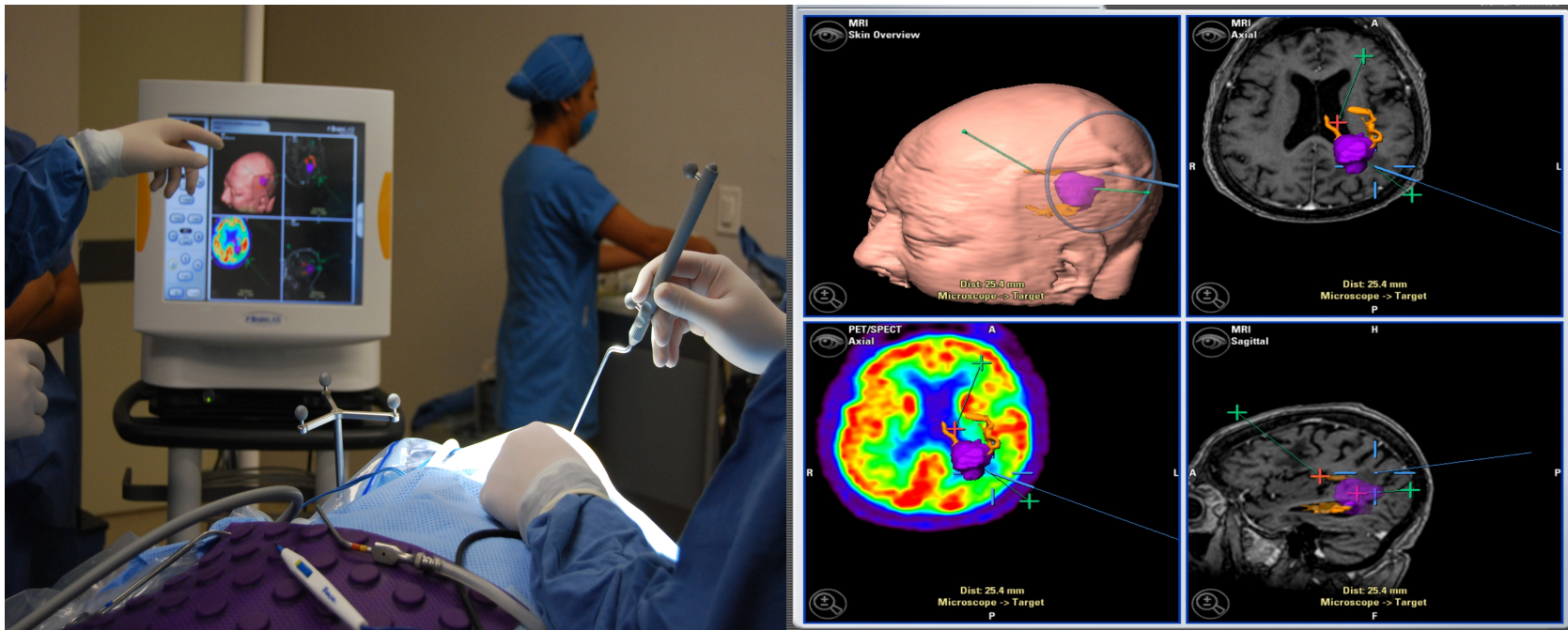


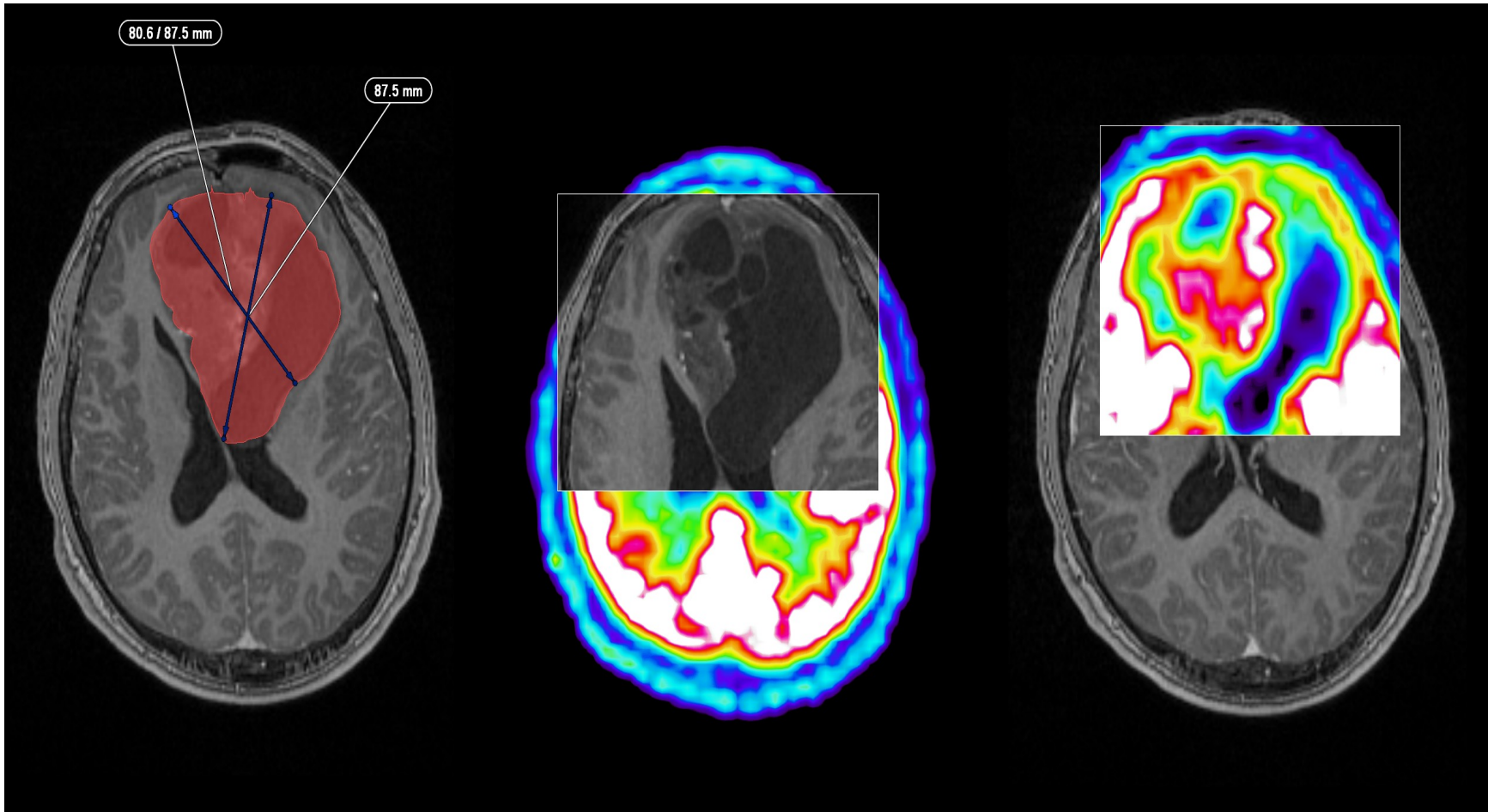




# NAVEGACION MULTIMODAL

- La esencia de la imagen multimodal radica en la habilidad de sobreponer imágenes de diferentes modalidades en una forma conjunta, lo cual se logra combinando información funcional y anatómica integrada en vistas multidimensionales utilizando técnicas de colores que proveen pistas visuales en la distribución espacial de la imagen.

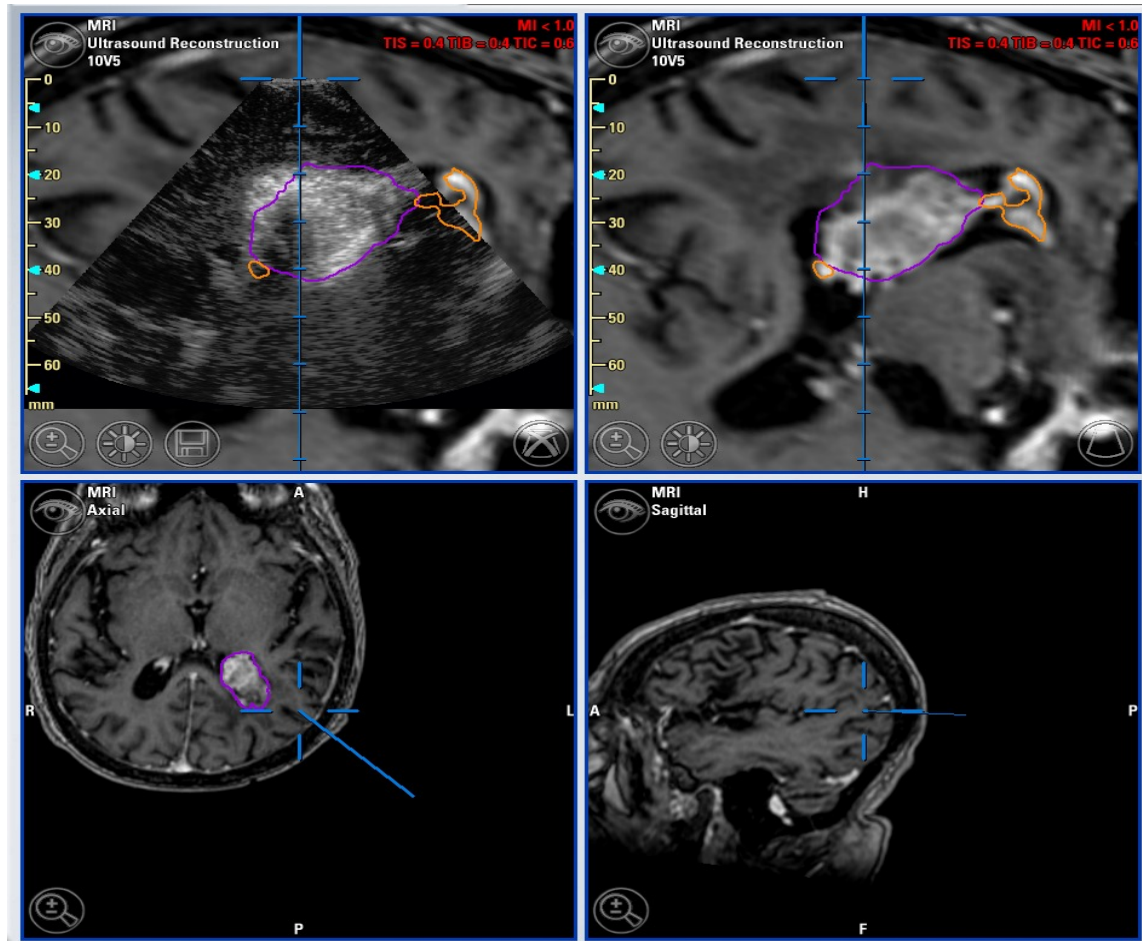




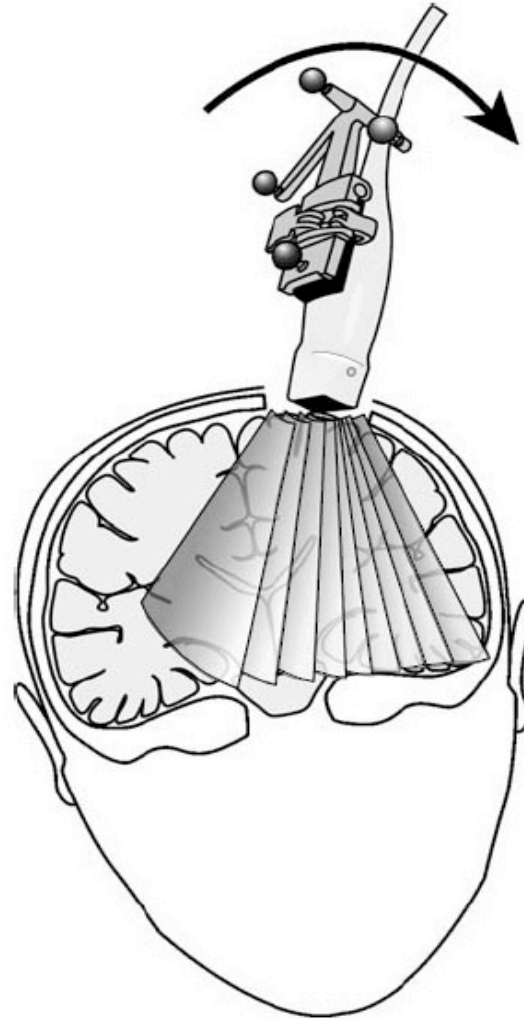


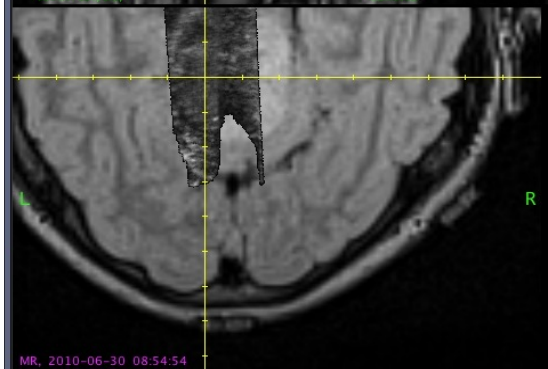
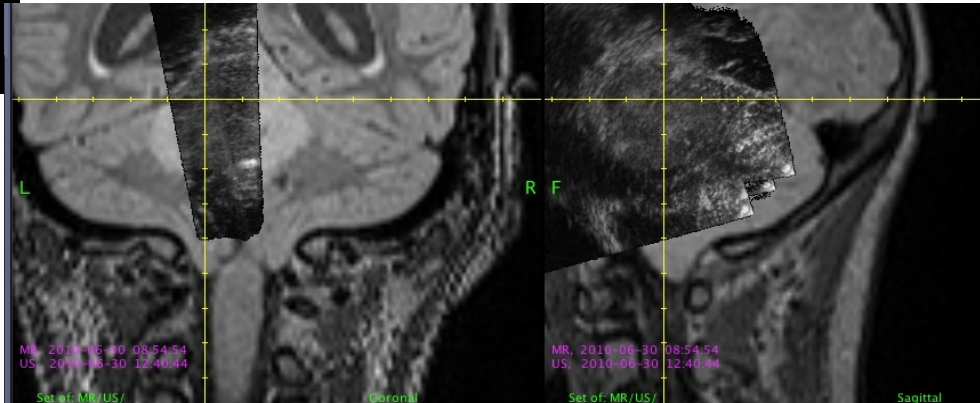
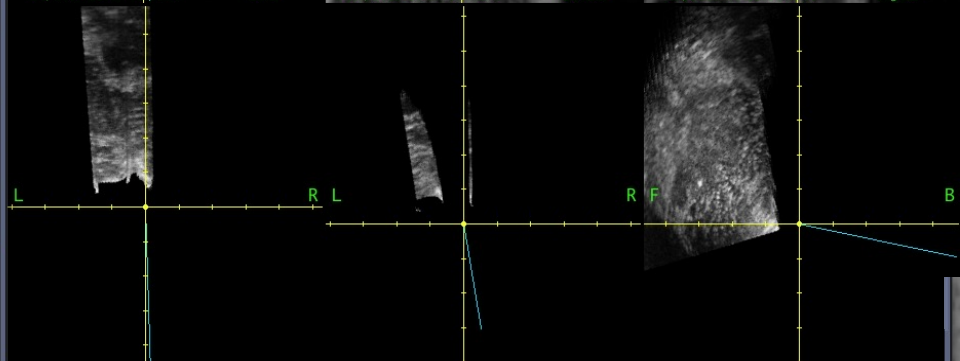
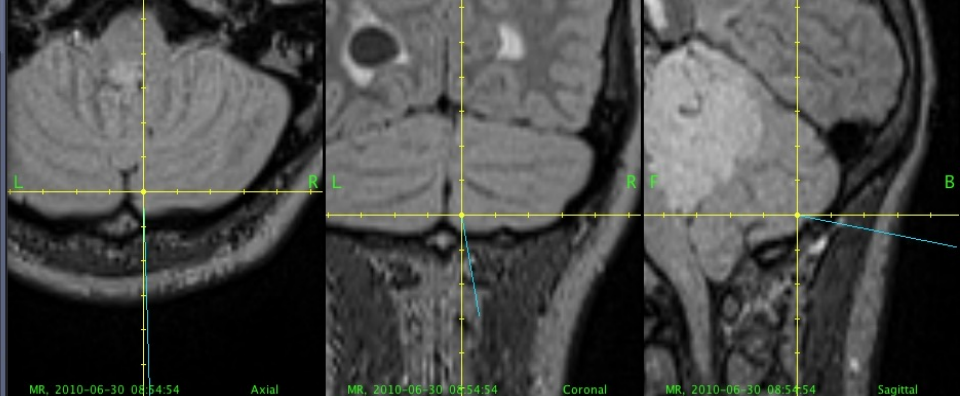
# NAVEGACION USG 3D

- Actualización de imágenes intraoperatorias
- Corrección del cambio encefálico “BRAIN SHIFT”

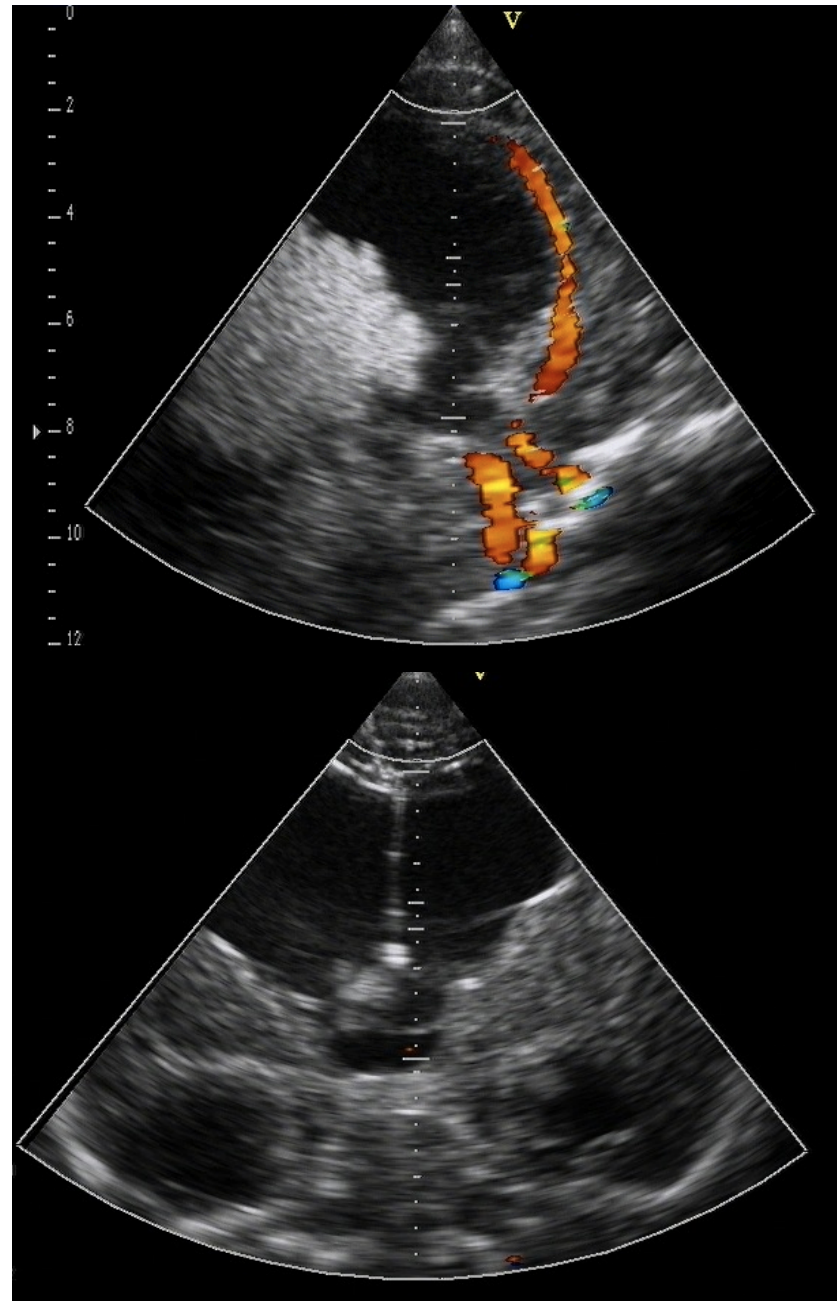
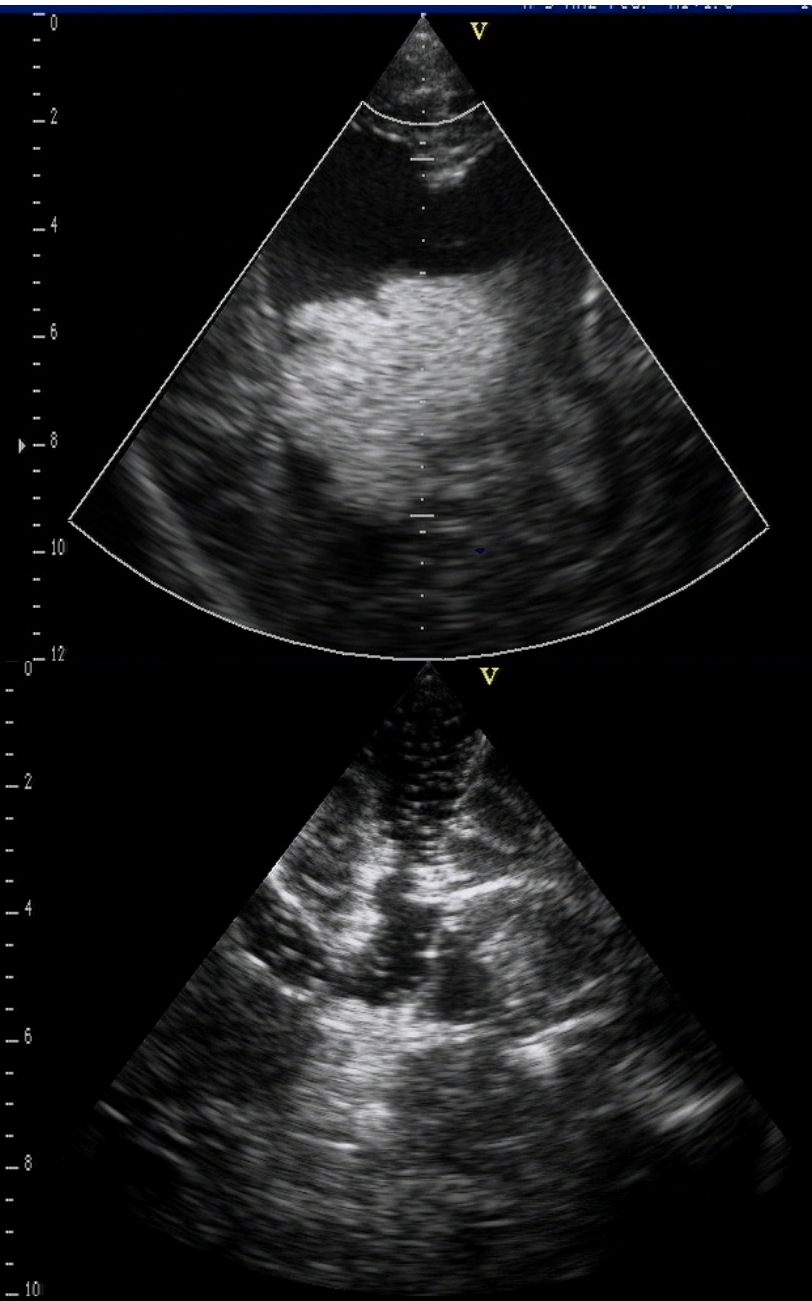


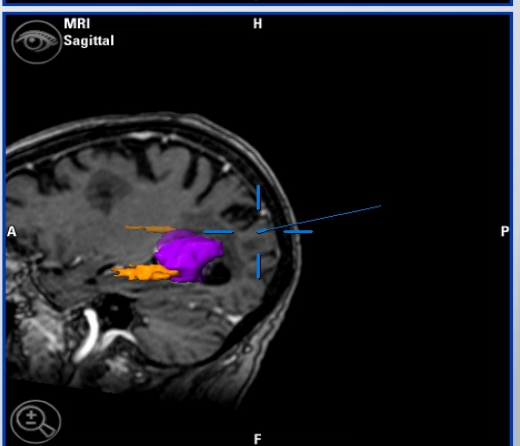
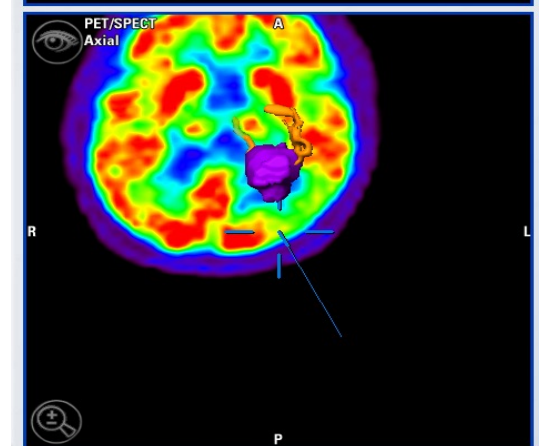
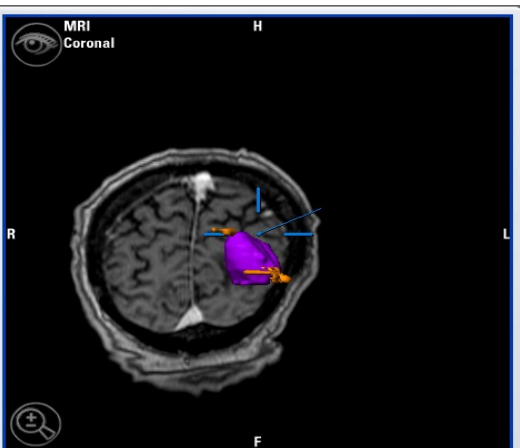
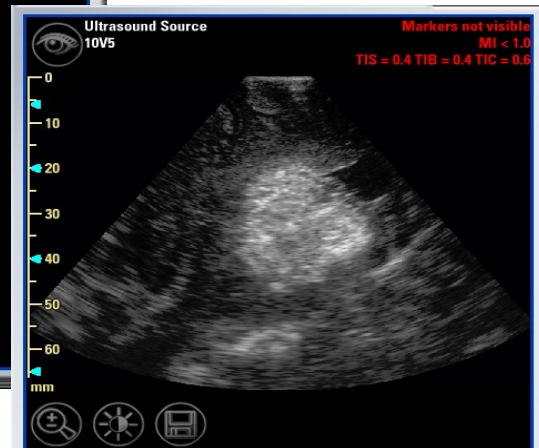
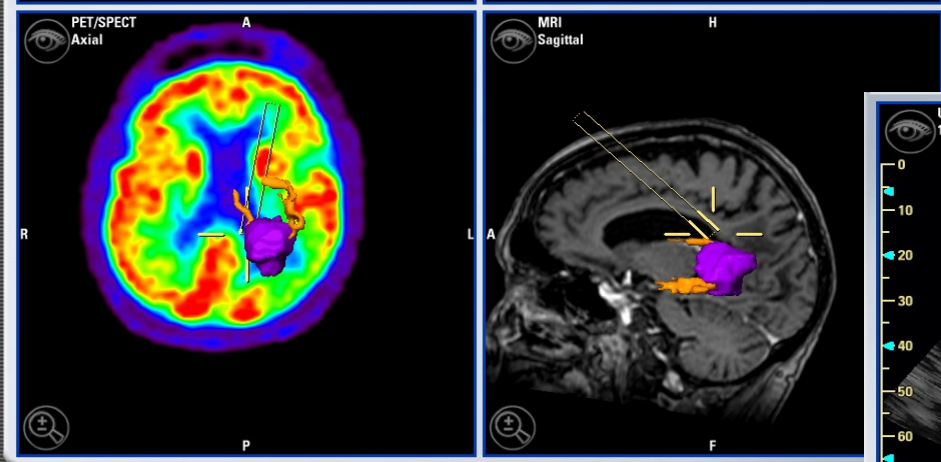
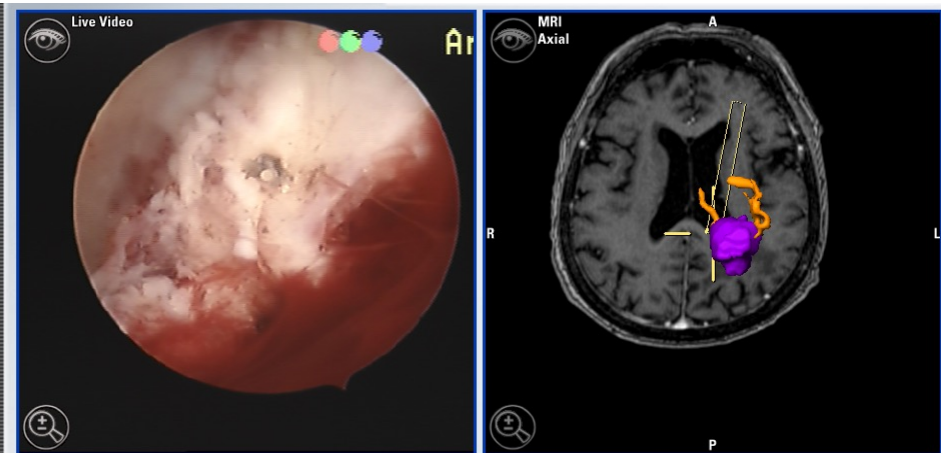
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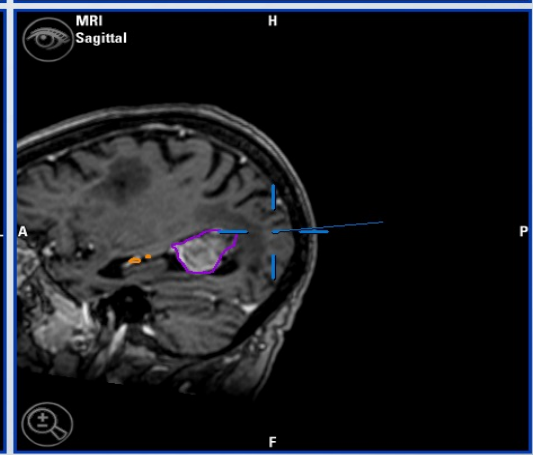
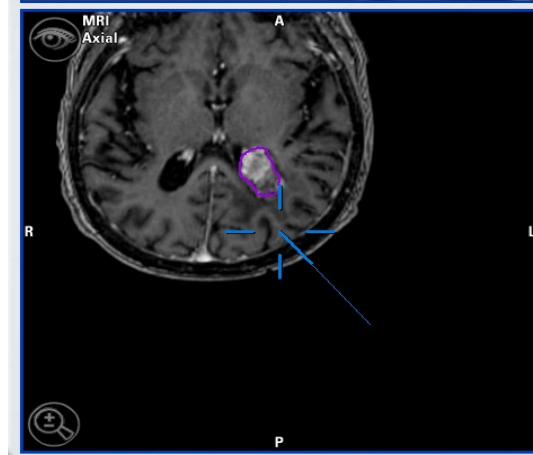
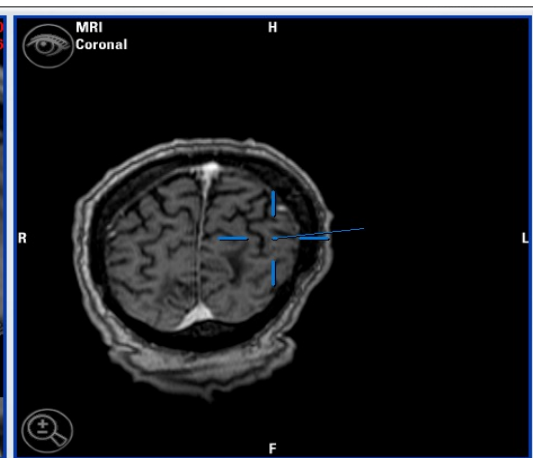
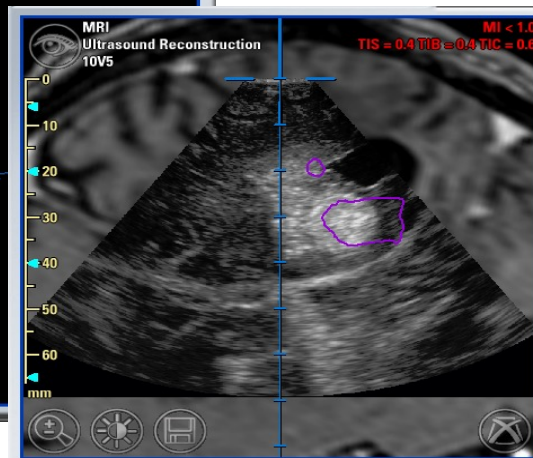
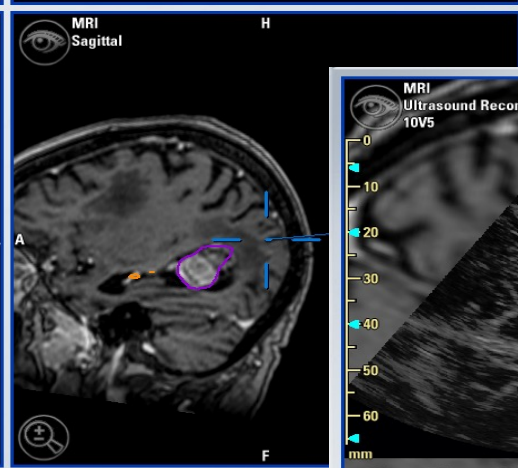
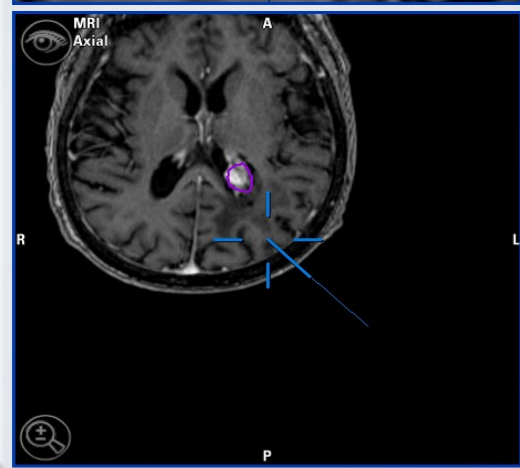
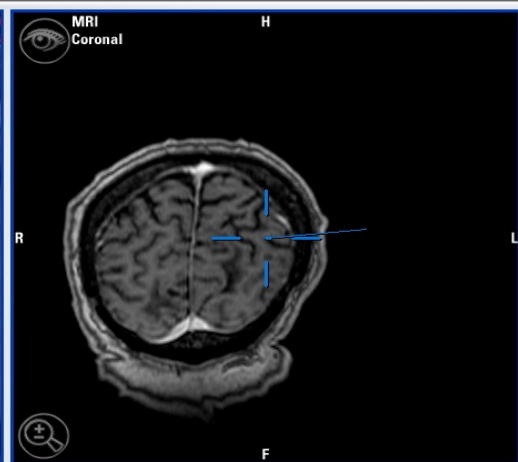
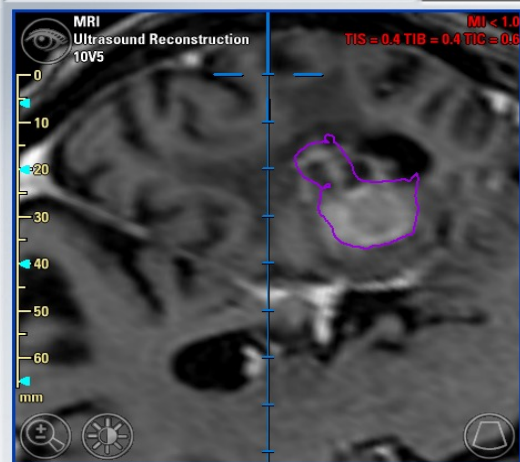


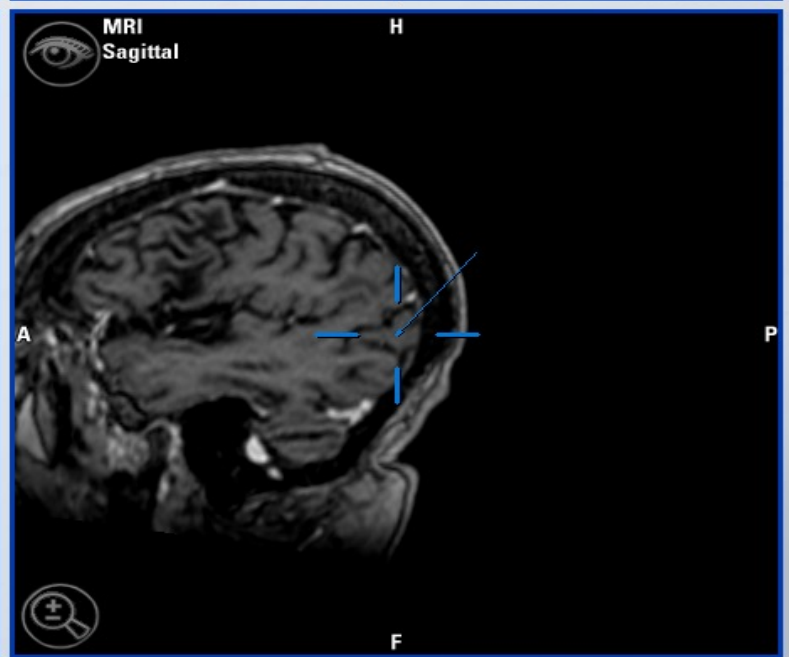
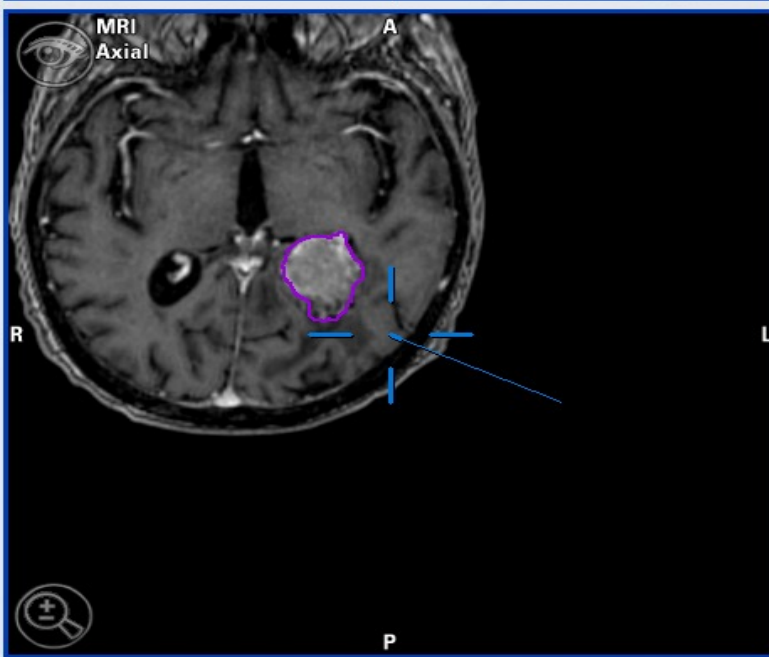
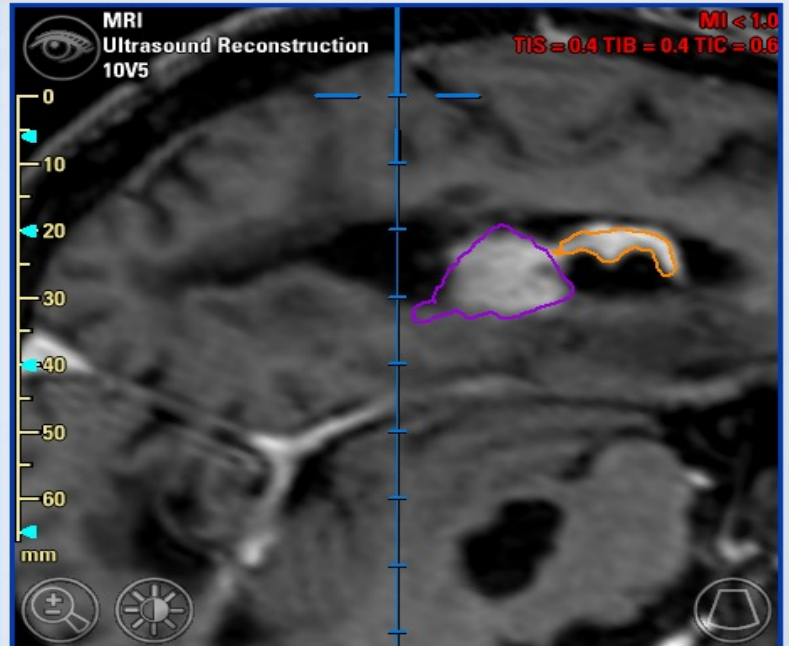
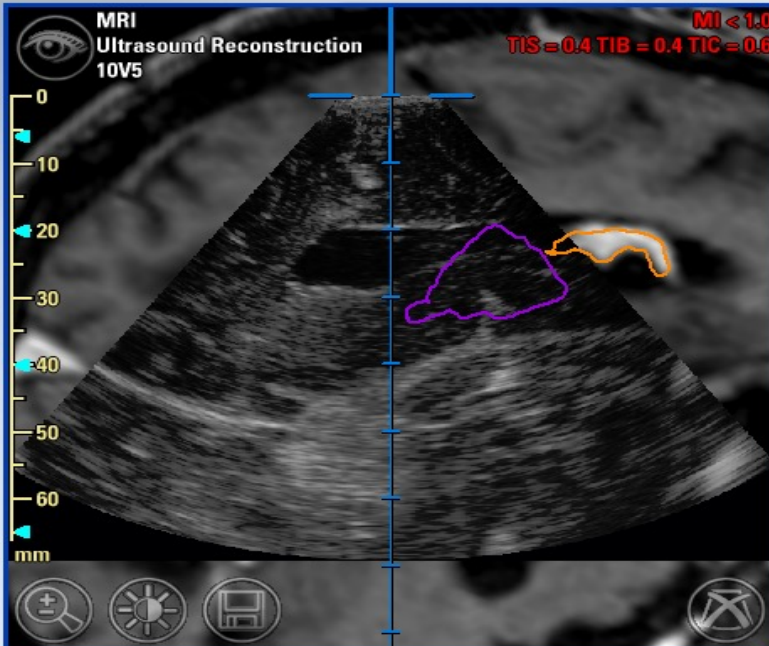


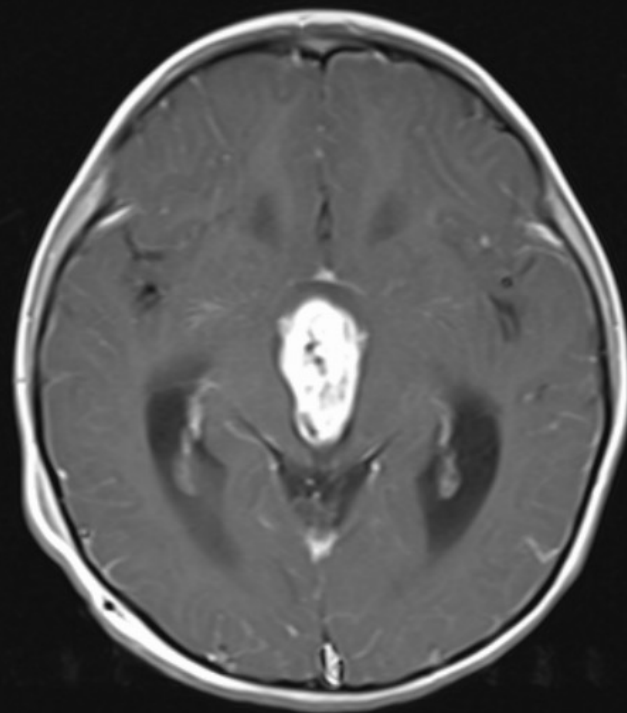
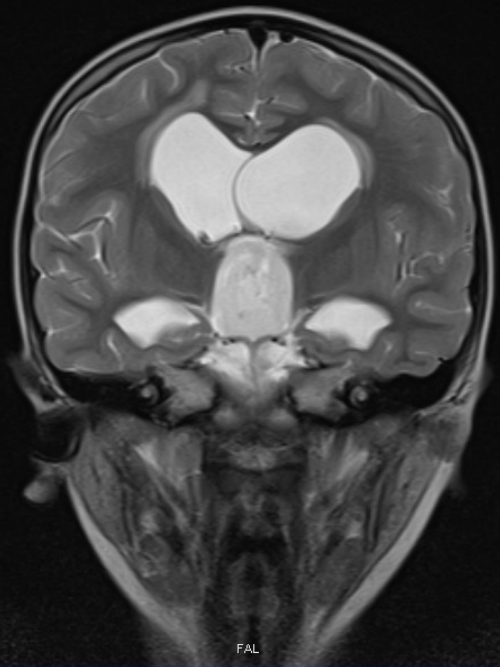
# LESIONES INTRAVENTRICULARES



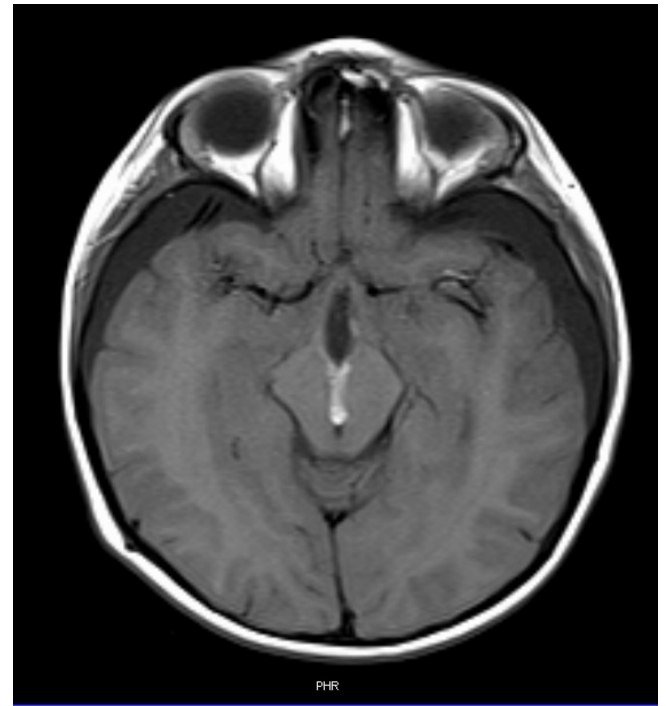
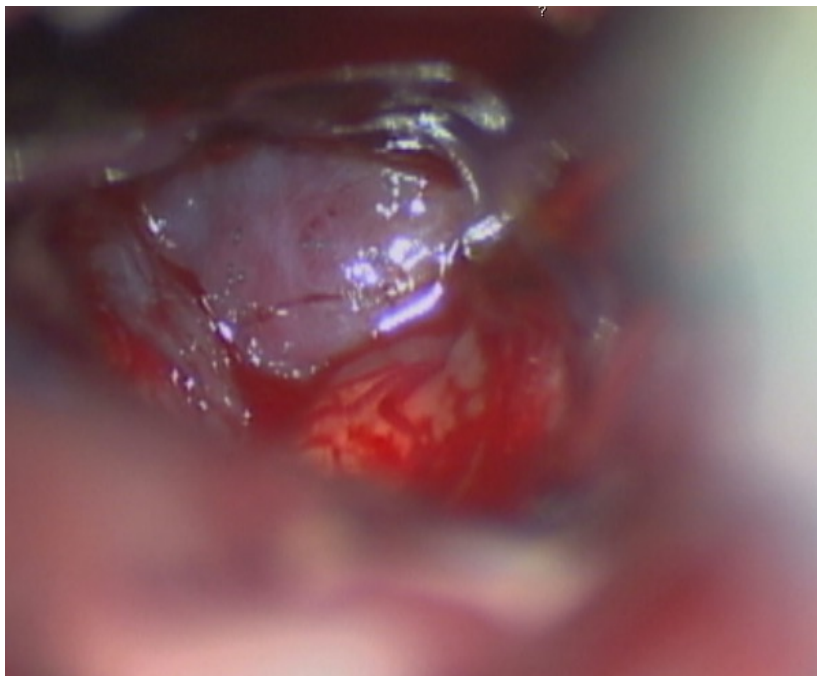
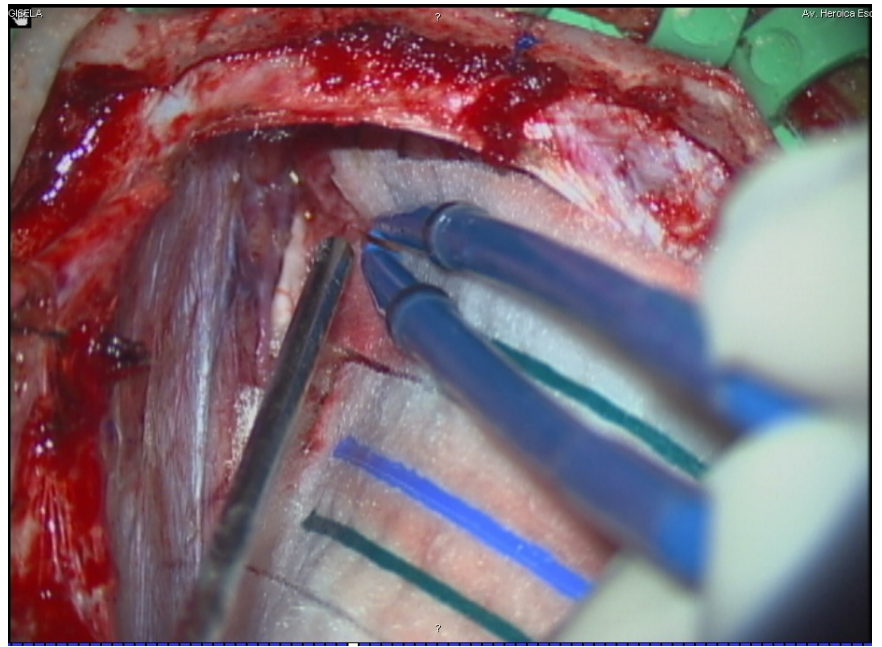
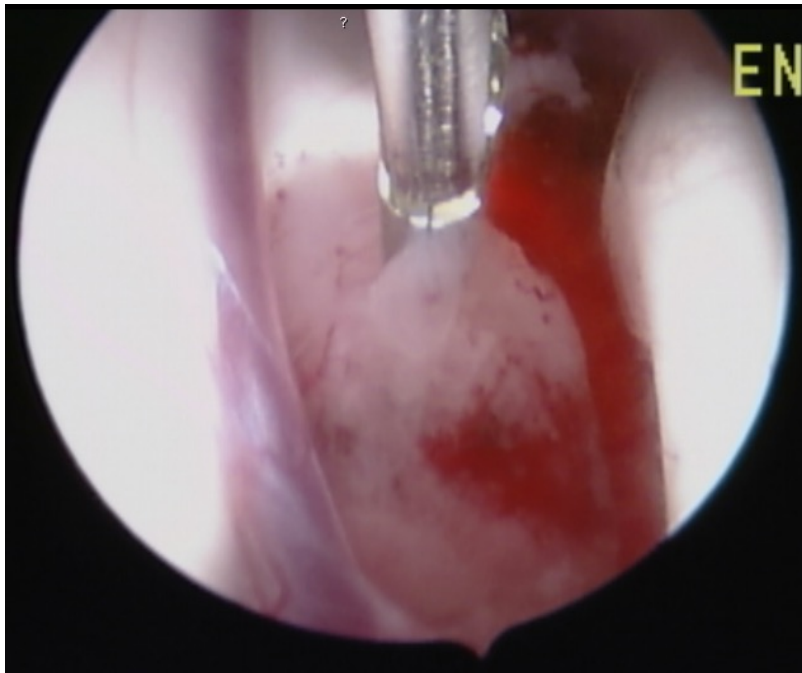




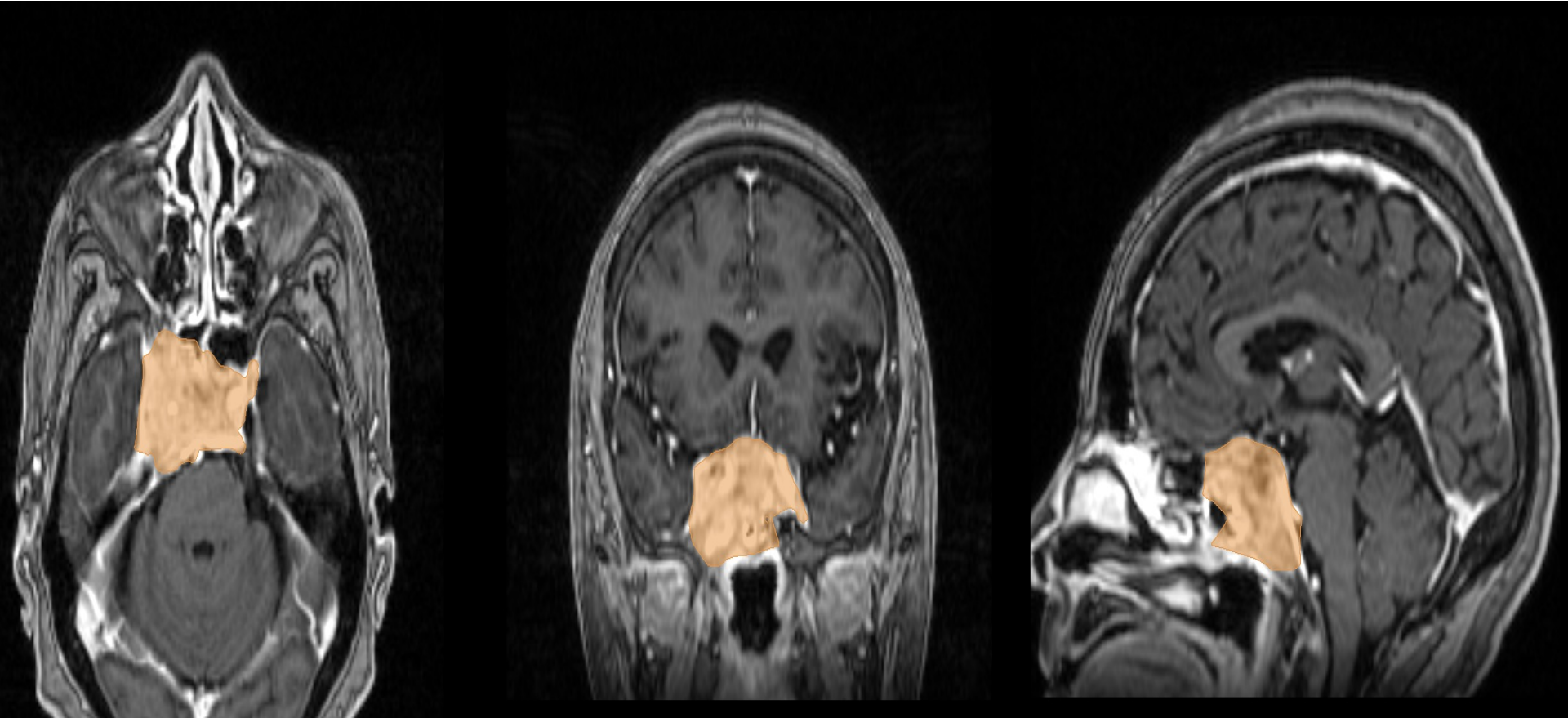


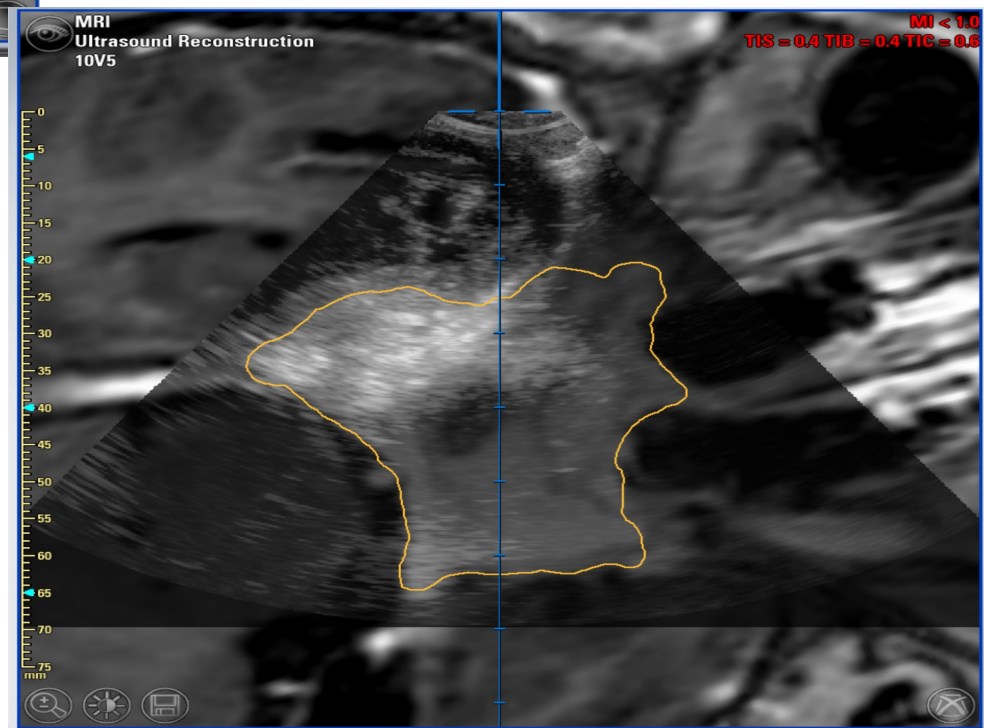
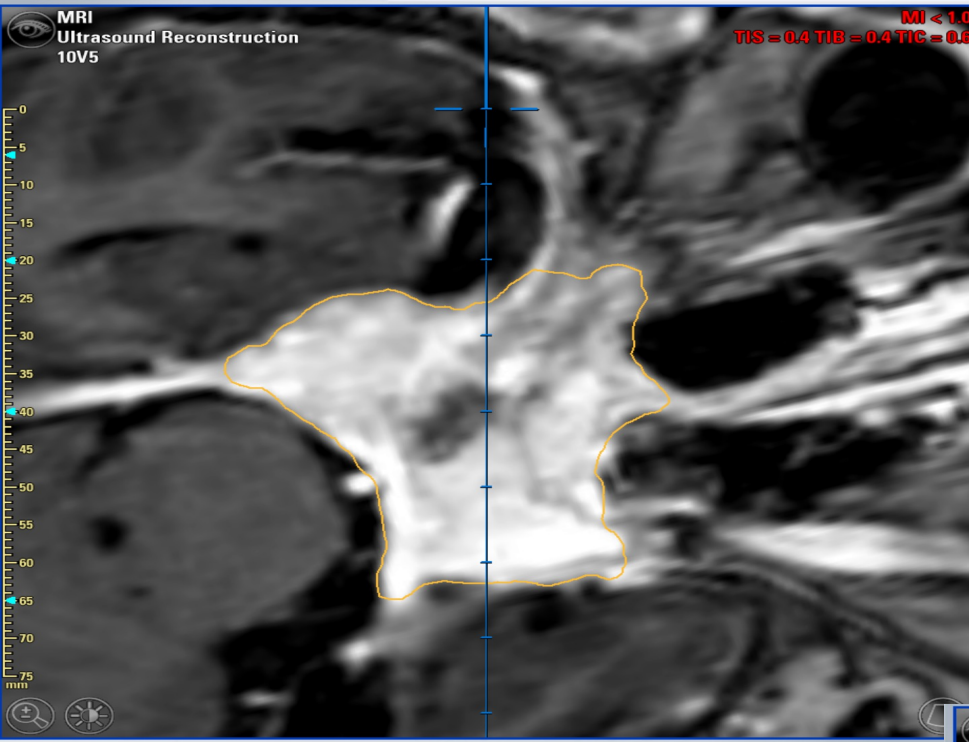




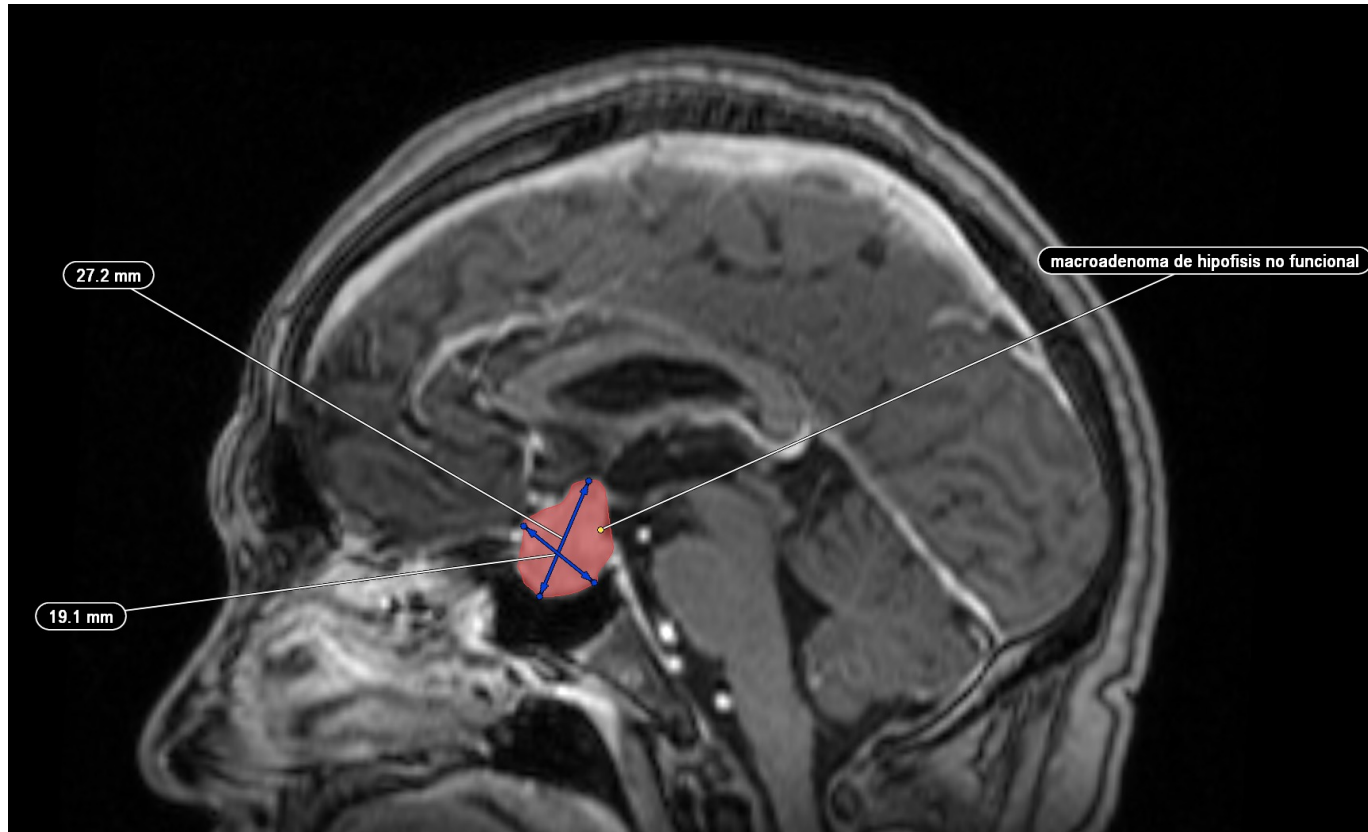


# MENINGIOMA





# ADENOMAS HIPOFISIARIOS

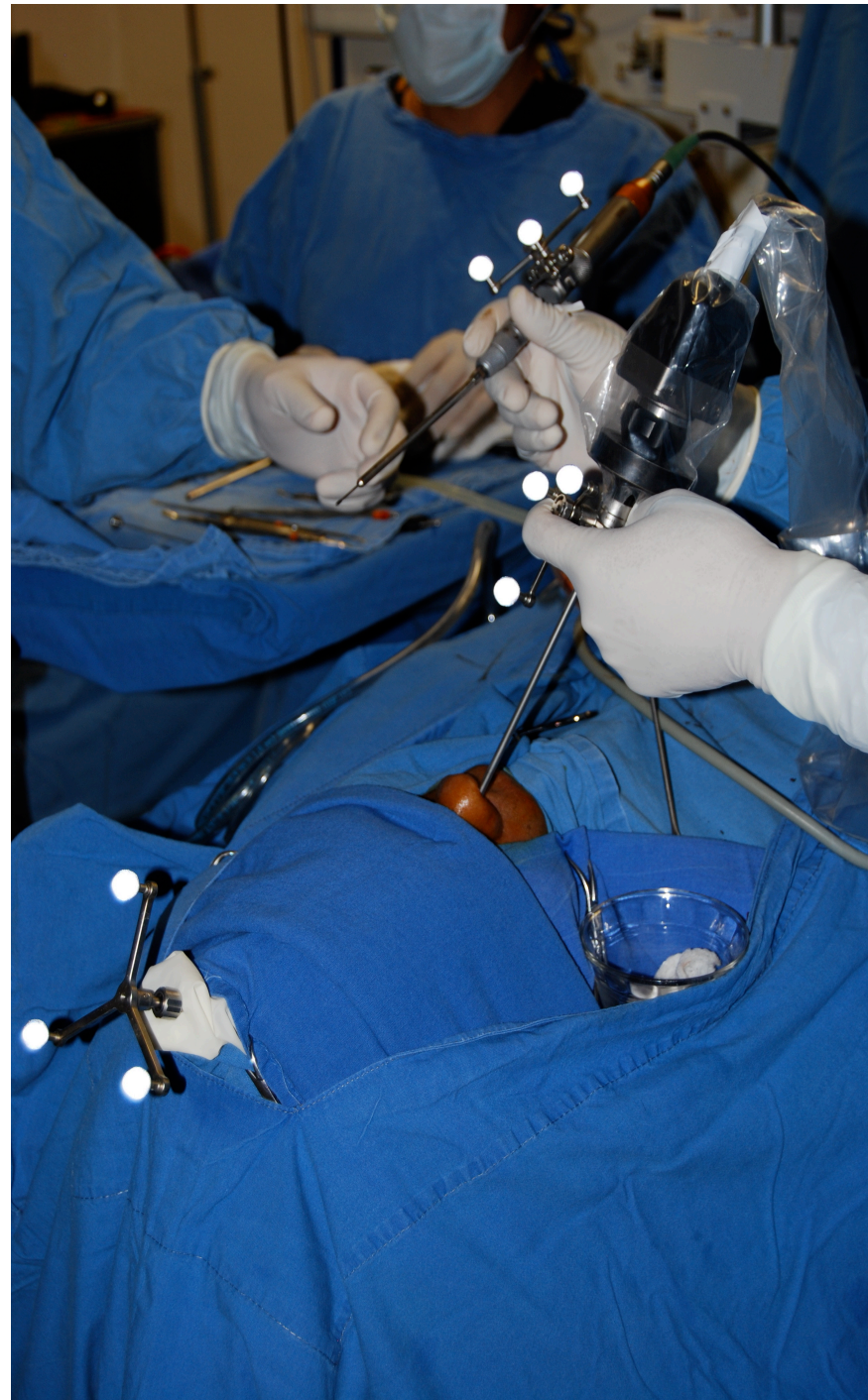
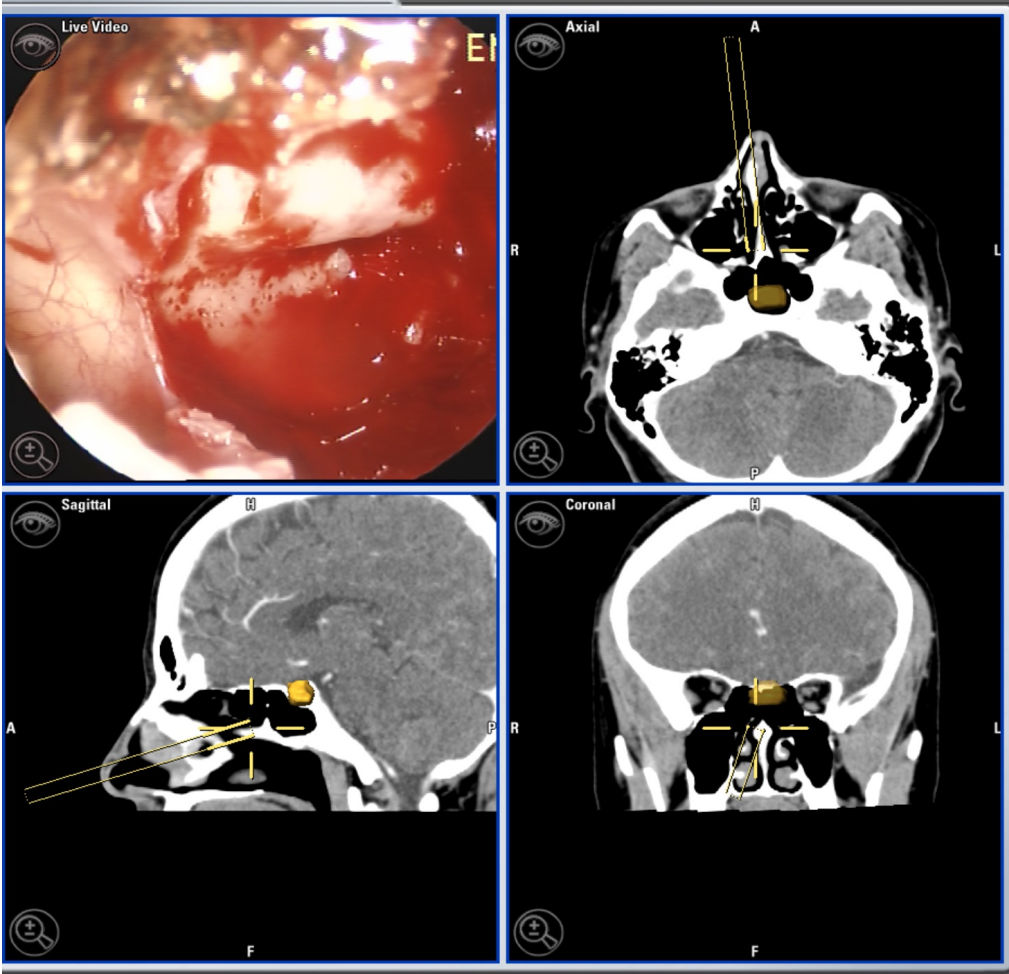


8 PACIENTES (5M/3F)

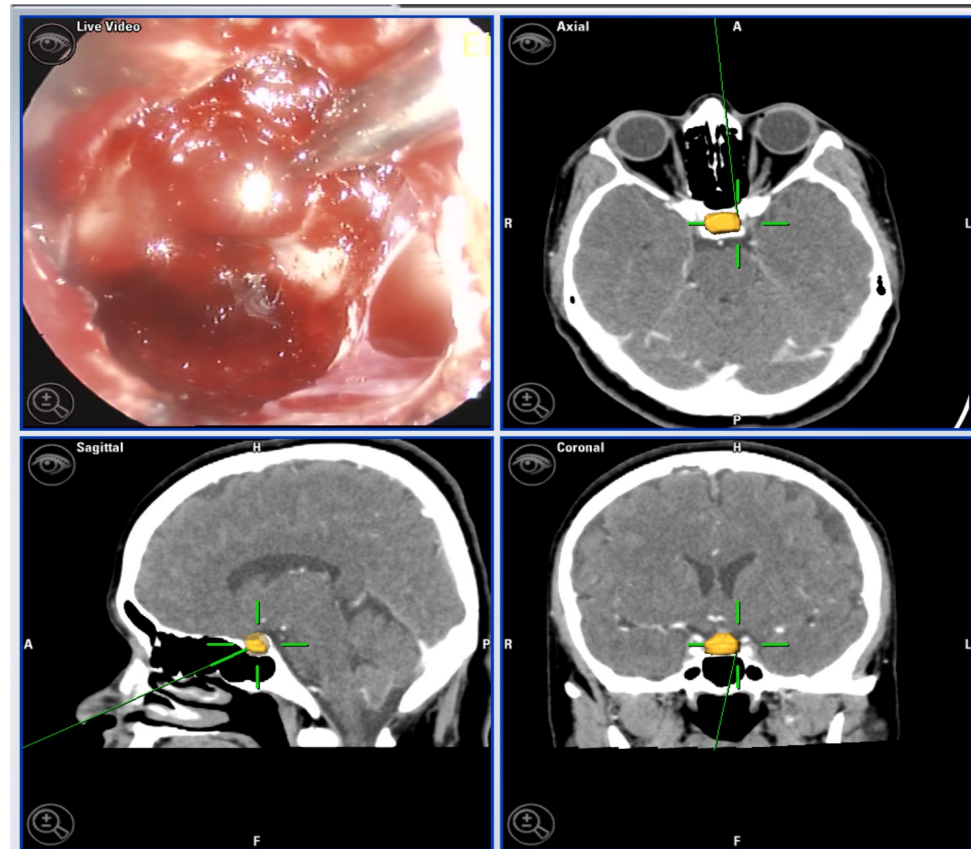
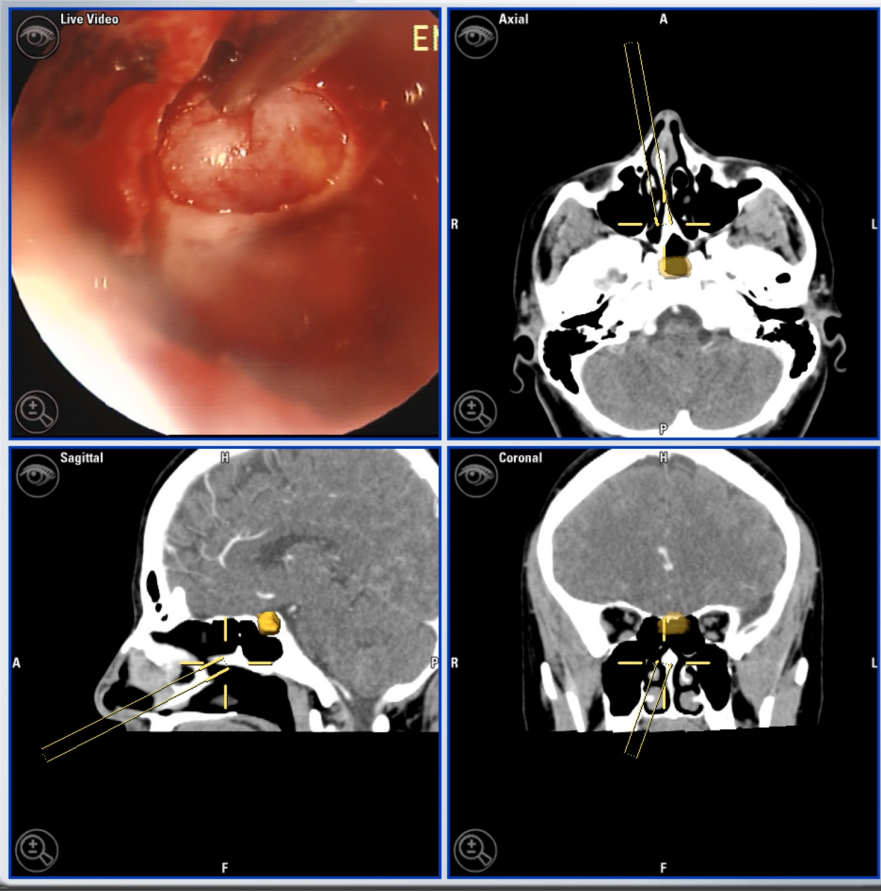
35 – 85 AÑOS

2 CASOS QX PREVIA (25%)

5 CASOS (62%) II C

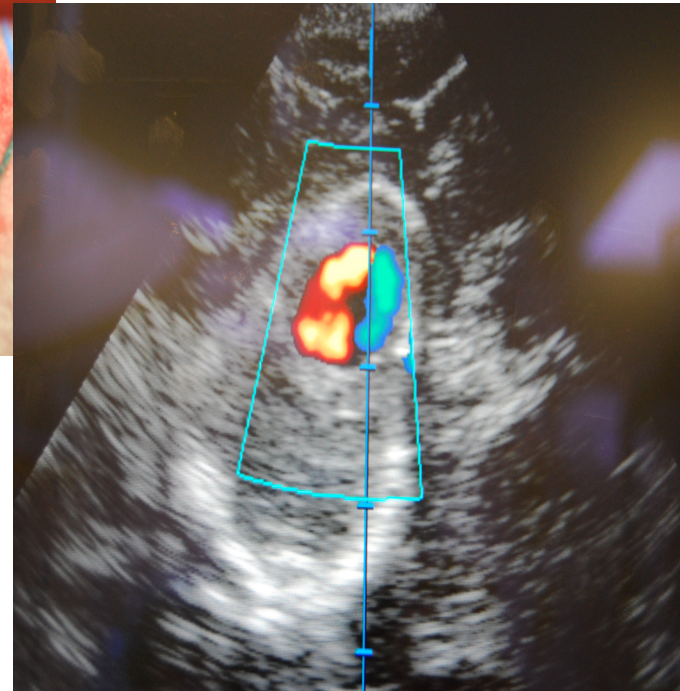
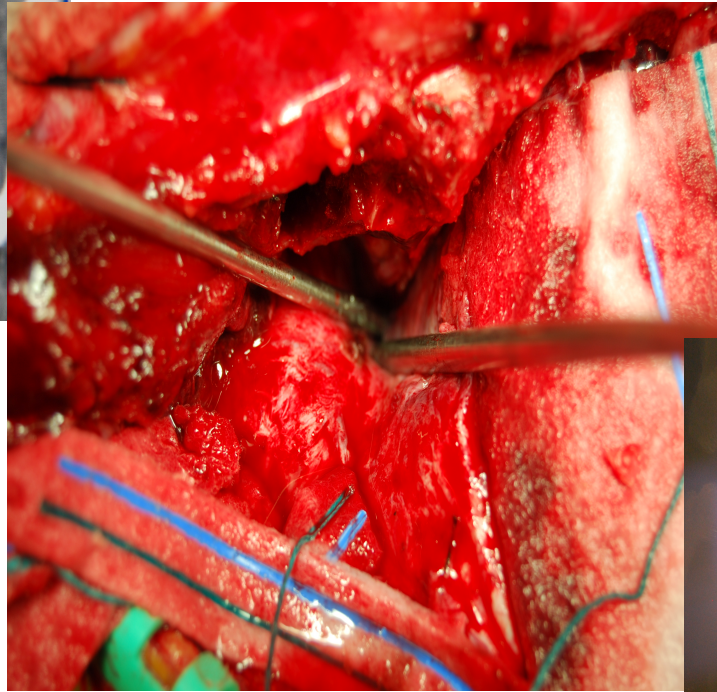
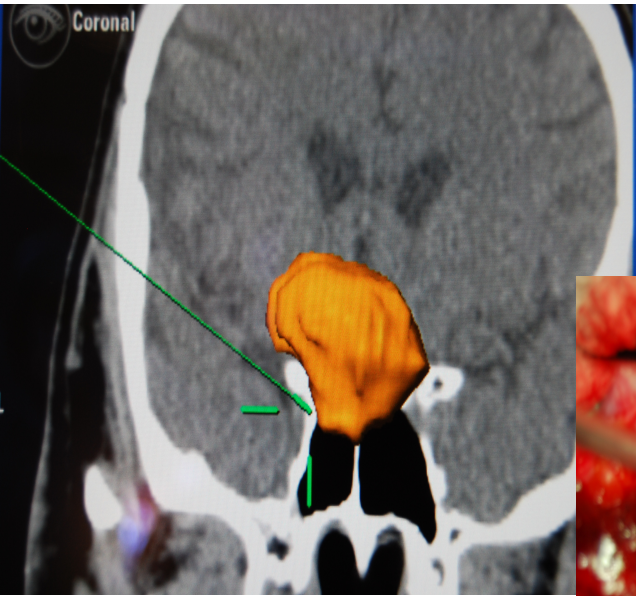


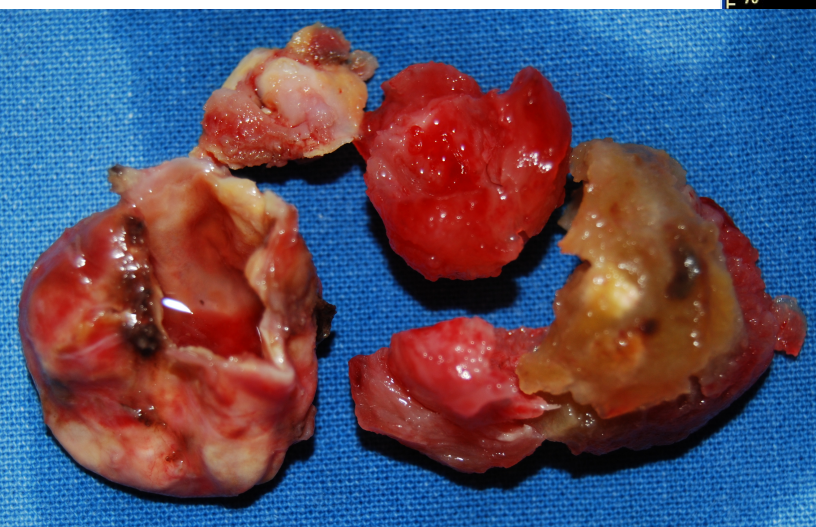
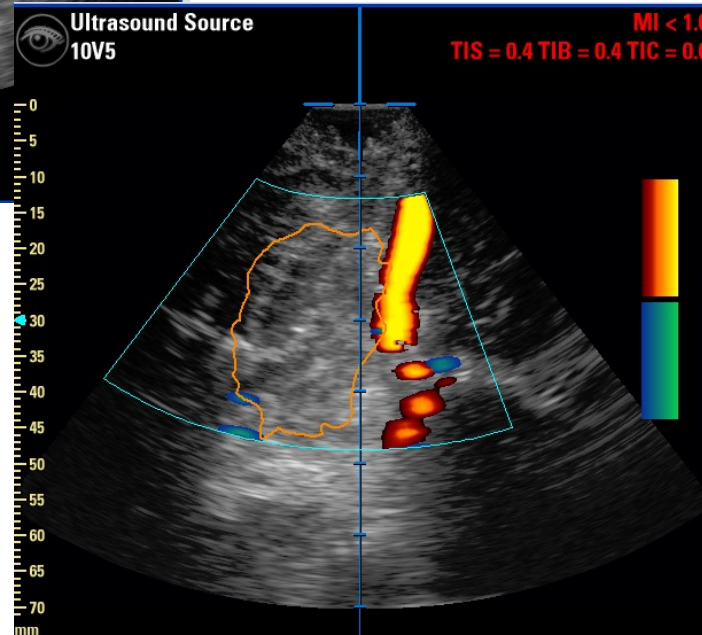
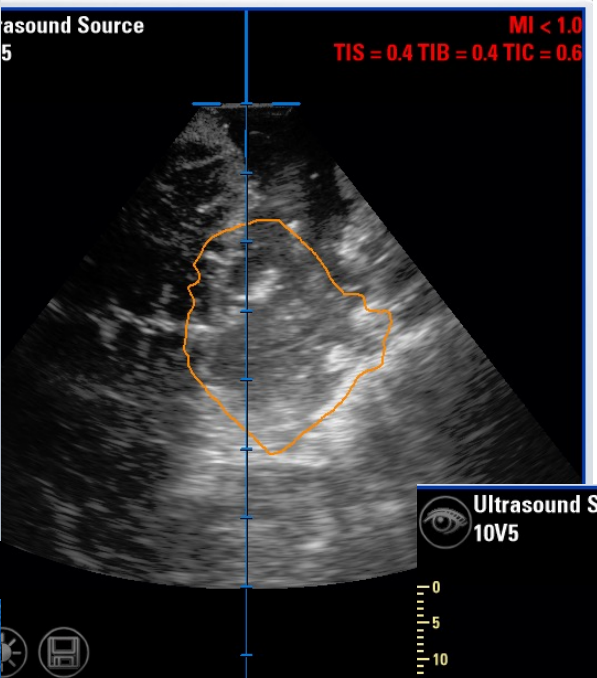
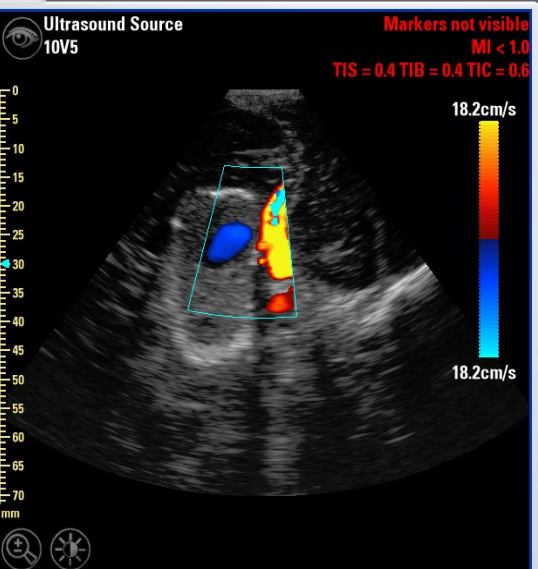
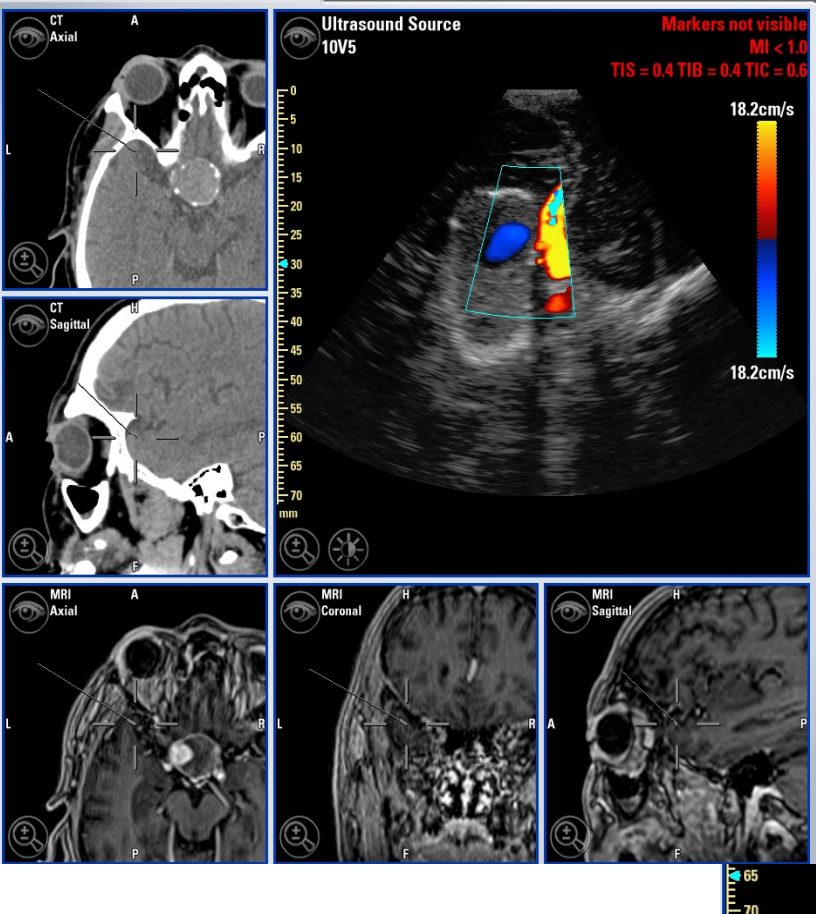
# LOCALIZADOR EN EL ENDOSCOPIO



# LOCALIZADOR EN EL ASPIRADOR

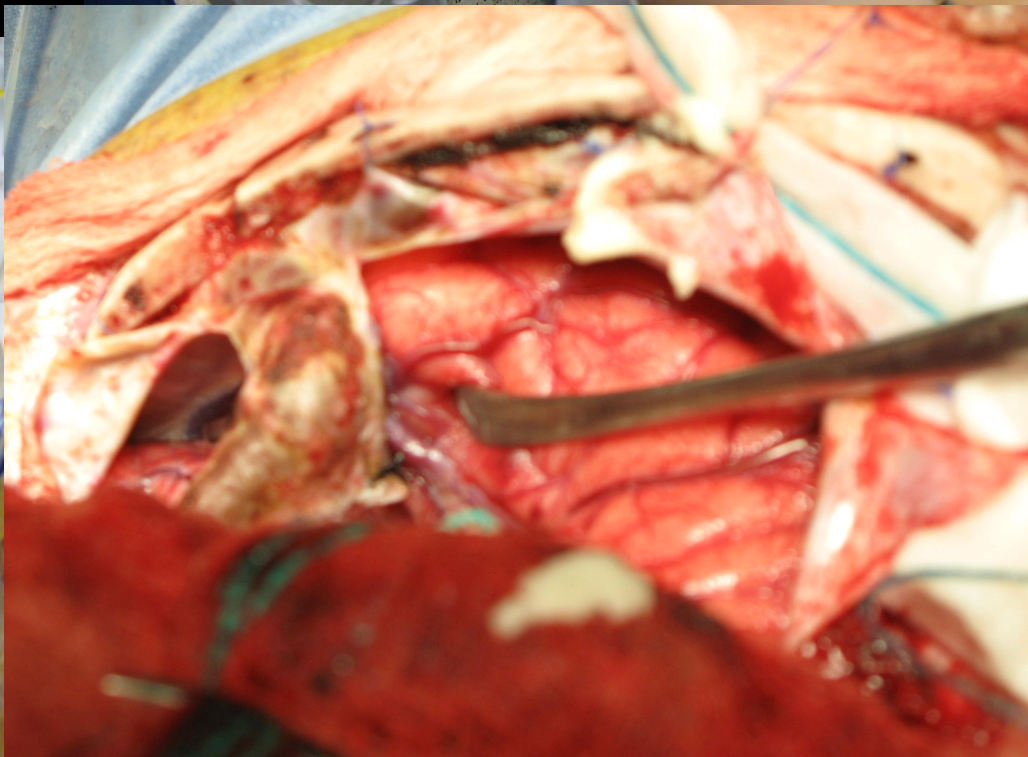
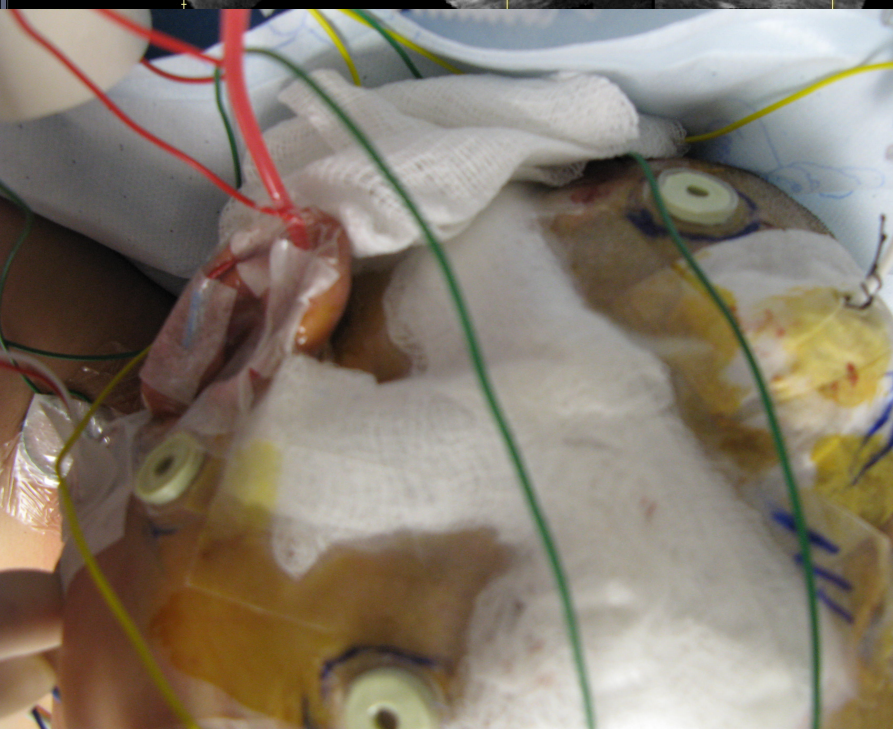
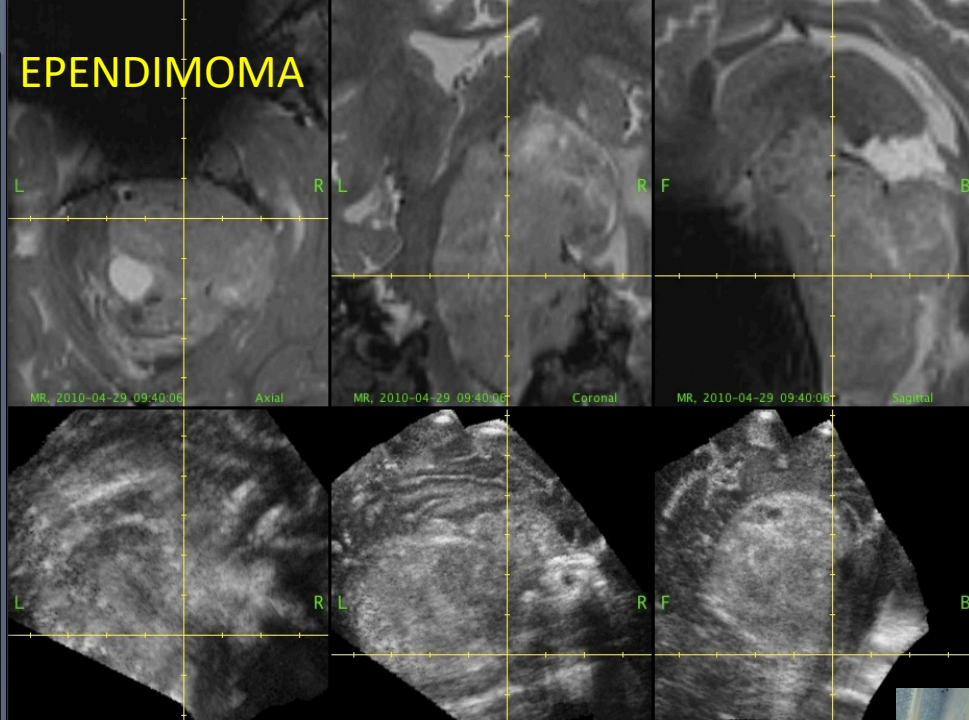
# ANEURISMA GIGANTE

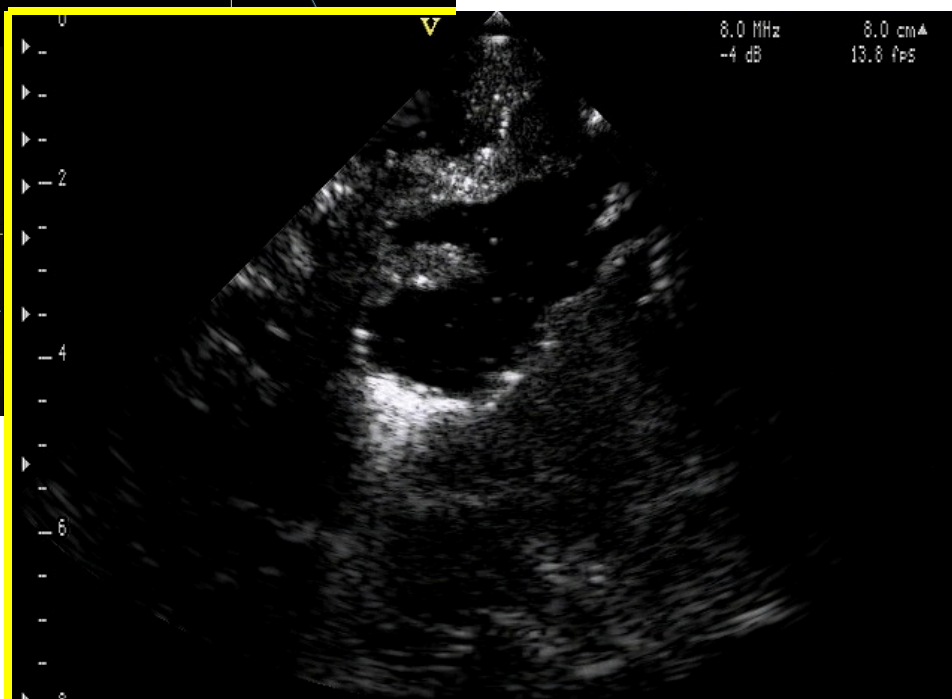
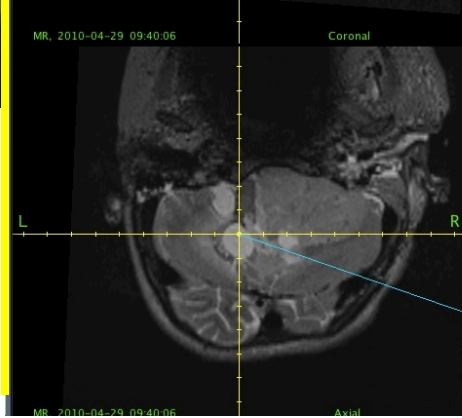
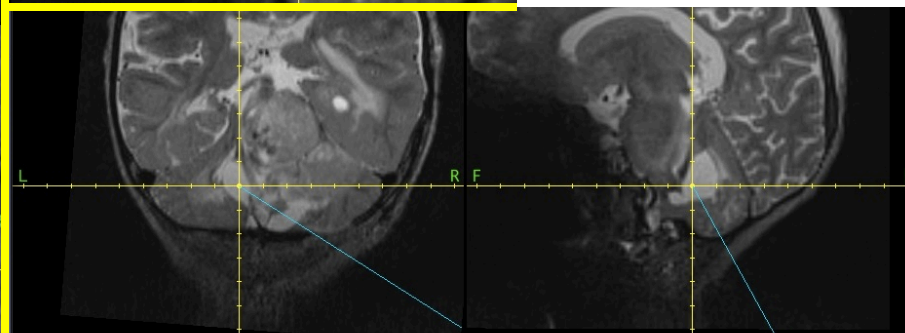
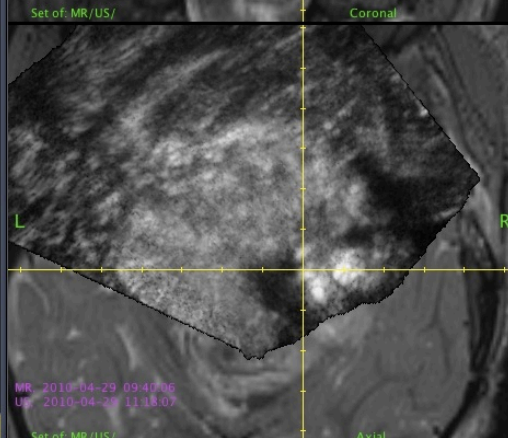
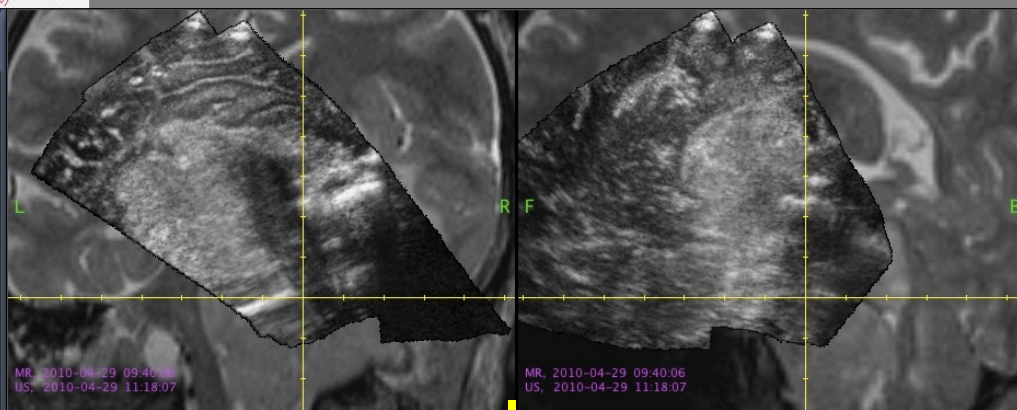


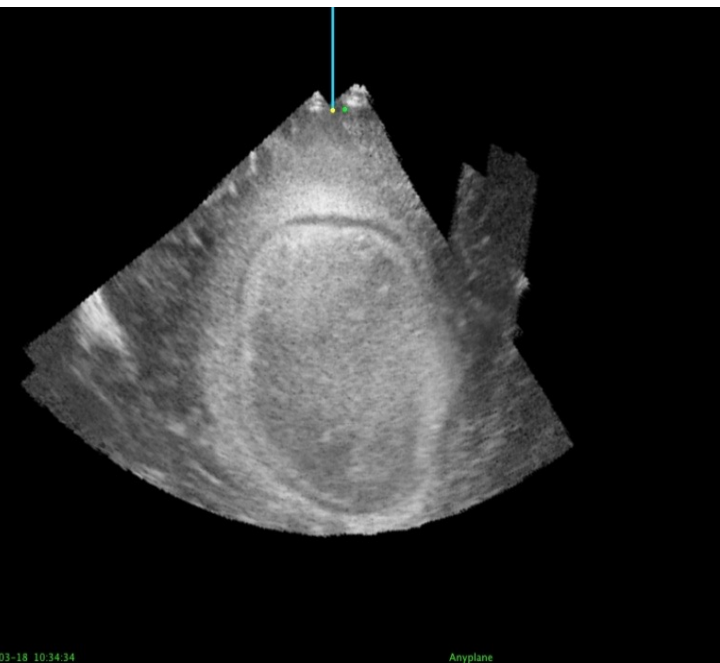
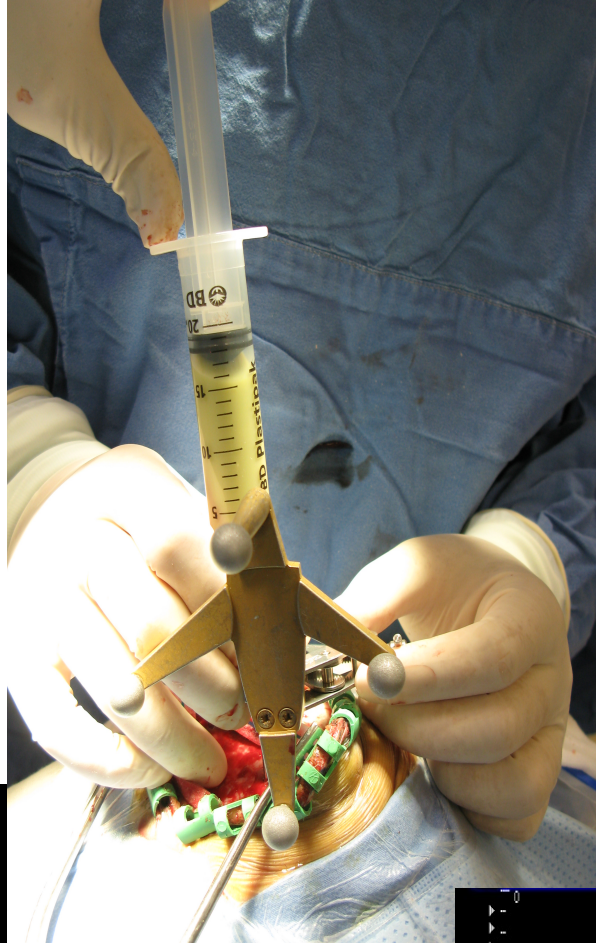




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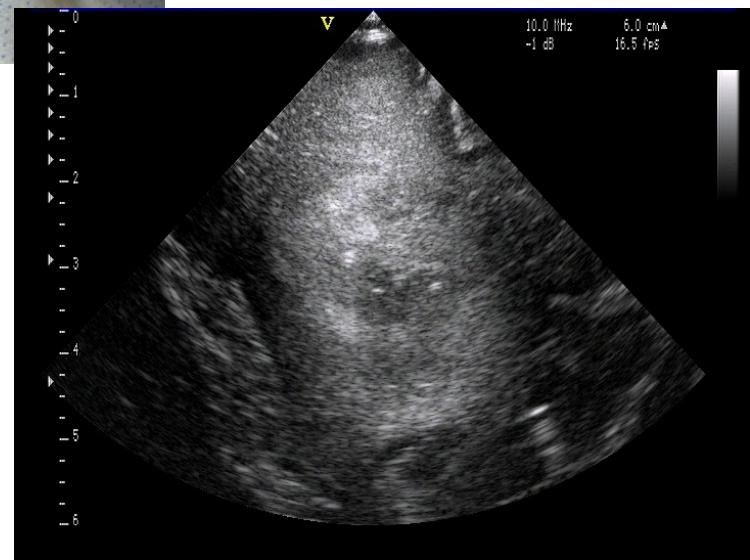




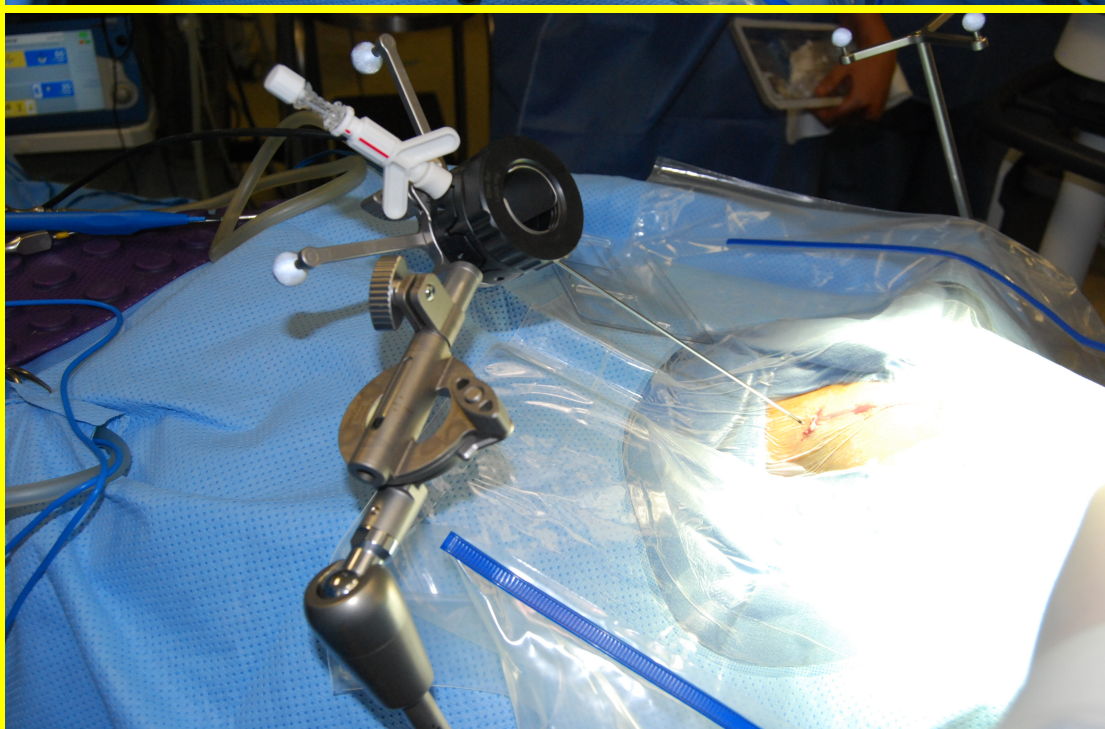


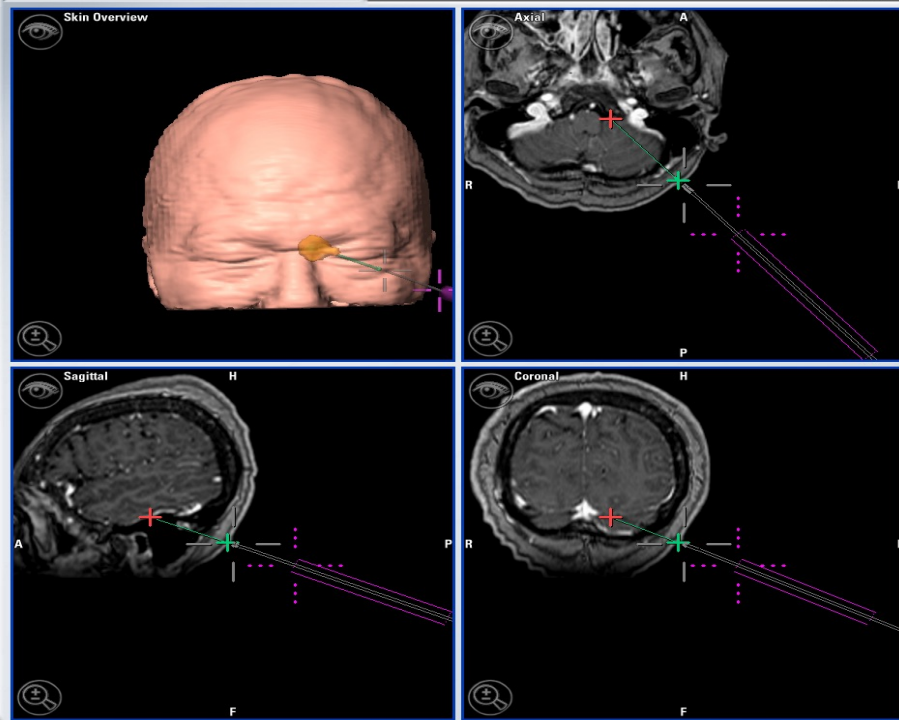
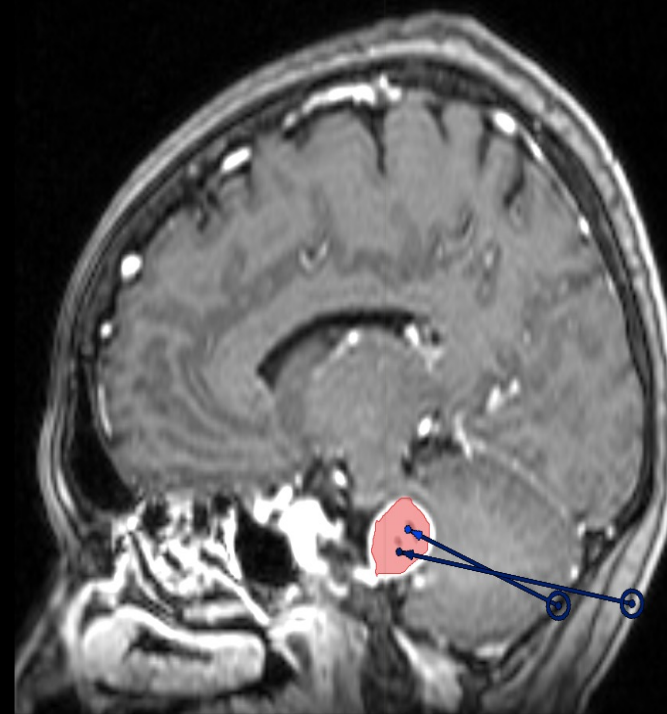
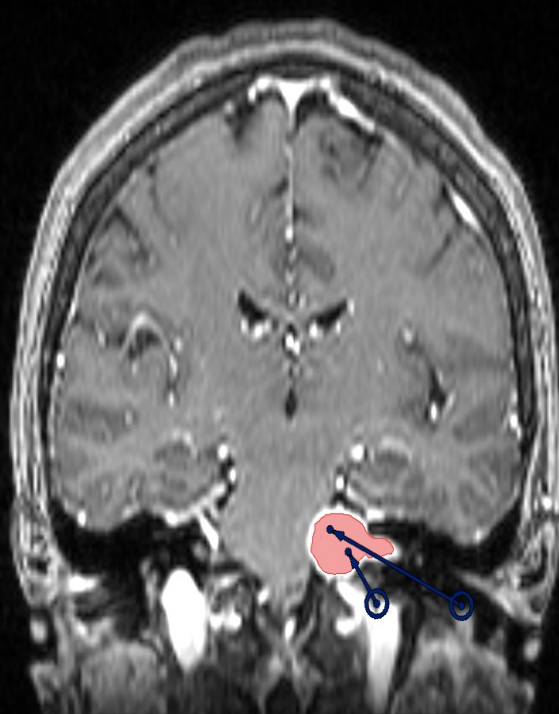
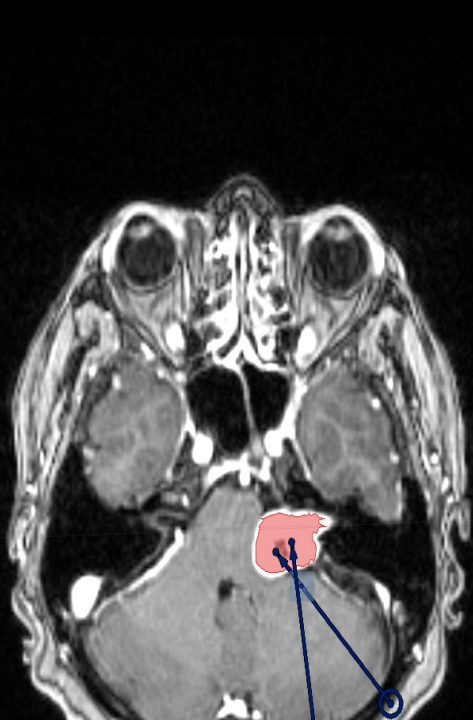
USG 3D

USG 2D



# BIOPSIA GUIADA POR NAVEGACIÓN





# BENEFICIOS CLÍNICOS Y QUIRÚRGICOS DE LA NAVEGACIÓN

- MENOS COMPLICACIONES GRAVES 57%
- MENOS TRANSFUSIONES DE SANGRE 28%
- REDUCCIÓN ESTANCIA HOSPITALARIO (5DIAS) 37%
- REDUCCIÓN ESTANCIA UCI (0.7 DIAS) 41%
- REDUCCIÓN DURACIÓN DE BIOPSIAS 36%
- REDUCCIÓN TIEMPO QUIRÚRGICO (0.5HR) 15%
- REDUCCIÓN TIEMPO OPERATORIO (0.2HR) 5%
- REDUCCION DE COSTOS TOTALES 17%

GRACIAS....

