



Dott.ssa Maria Agostina Giallorenzi, 18-06-2021

Il caso clinico

Maschio 77-Y, intensa astenia e tosse.

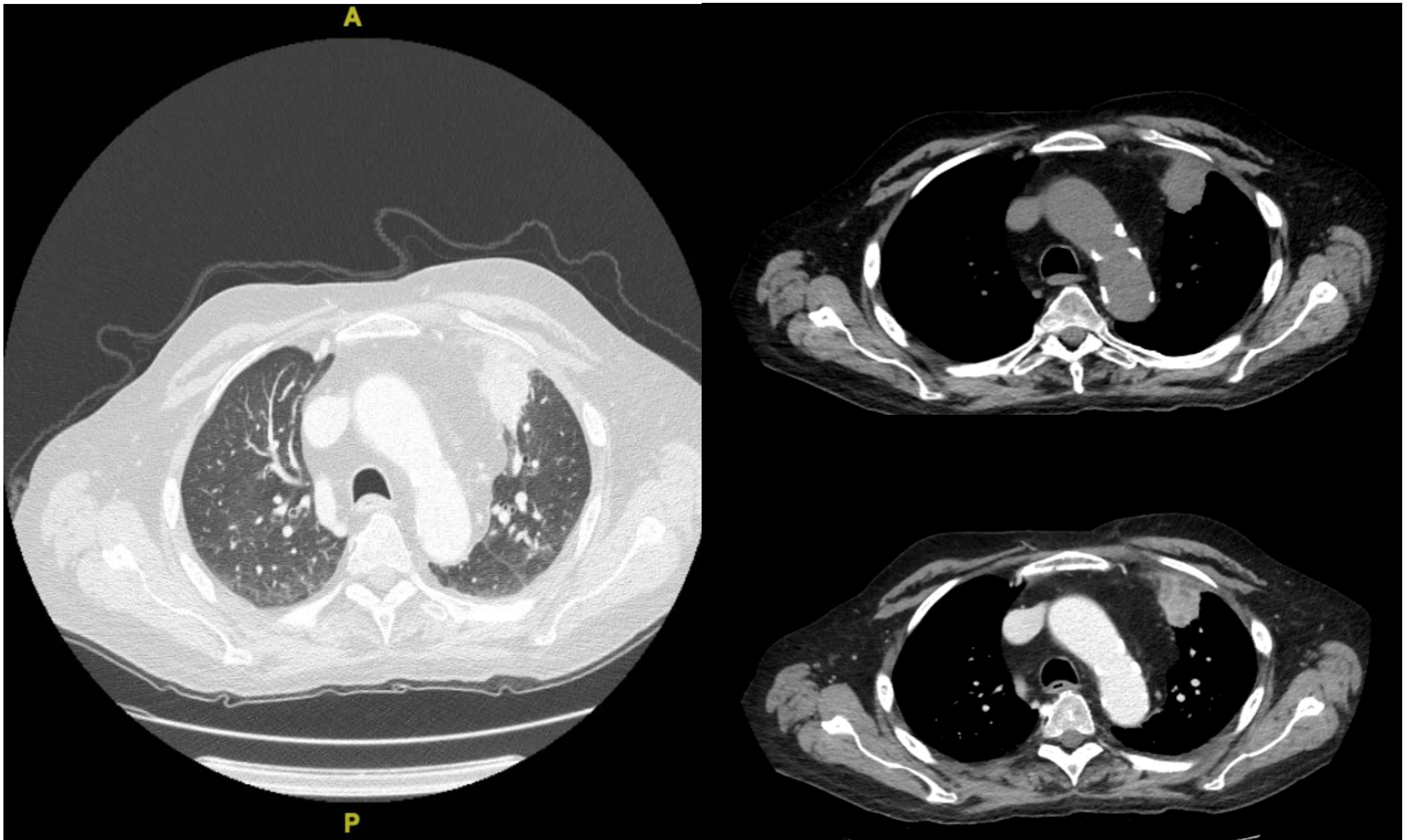
In APR trapianto renale in fossa iliaca dx (2015).

Durante il ricovero per accertamenti (in altro centro) viene sottoposto a TC Total Body, che pone il sospetto di neoplasia polmonare con metastasi cerebrali (IV stadio).

Per questo motivo viene inviato a videat pneumologico-oncologico del nostro ospedale.

TC Total Body

Reperti toracici





TC Total Body

Reperti cerebrali

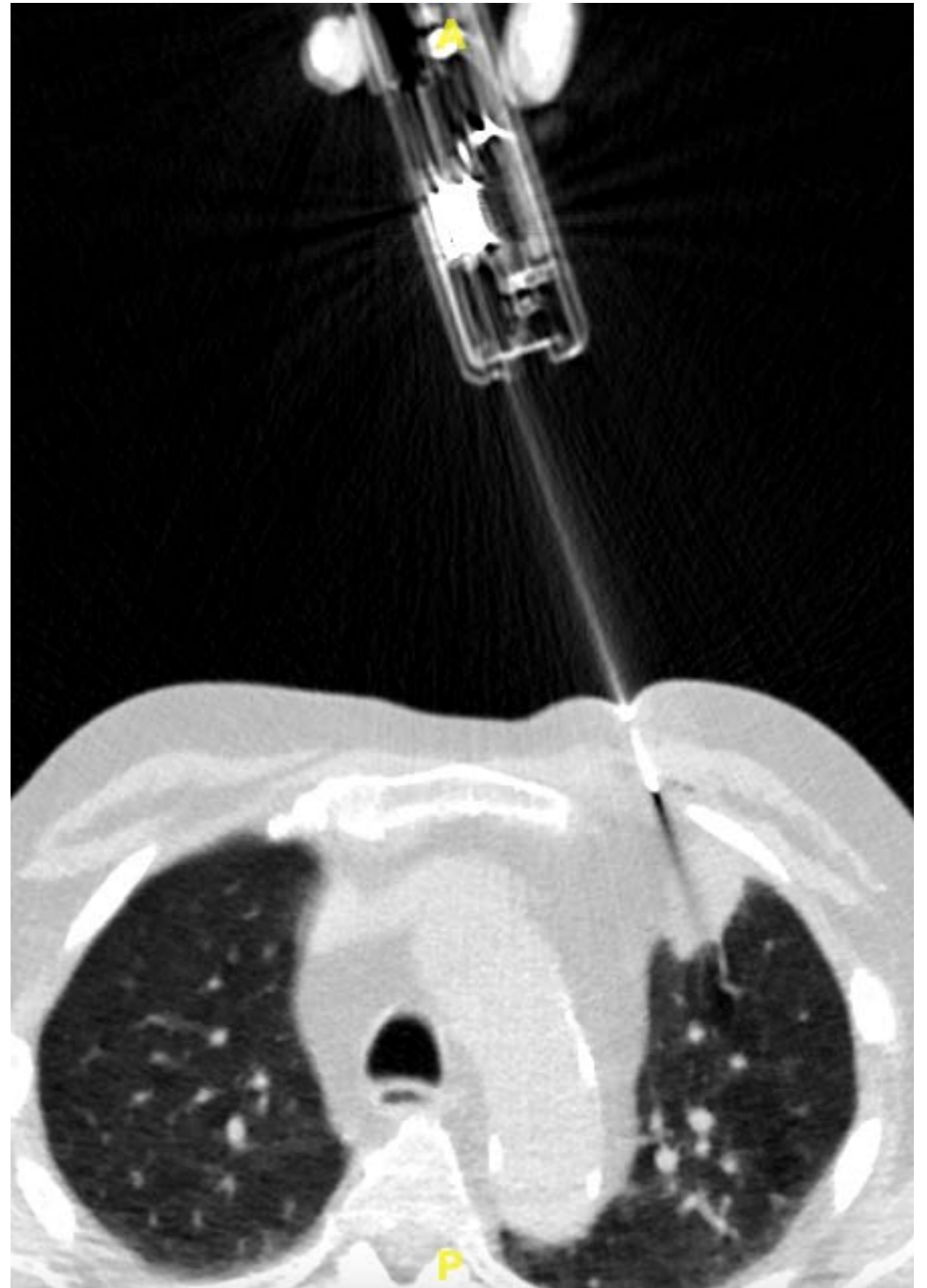


Si programmano biopsia polmonare e PET/TC-TB per completamento stadiazione.

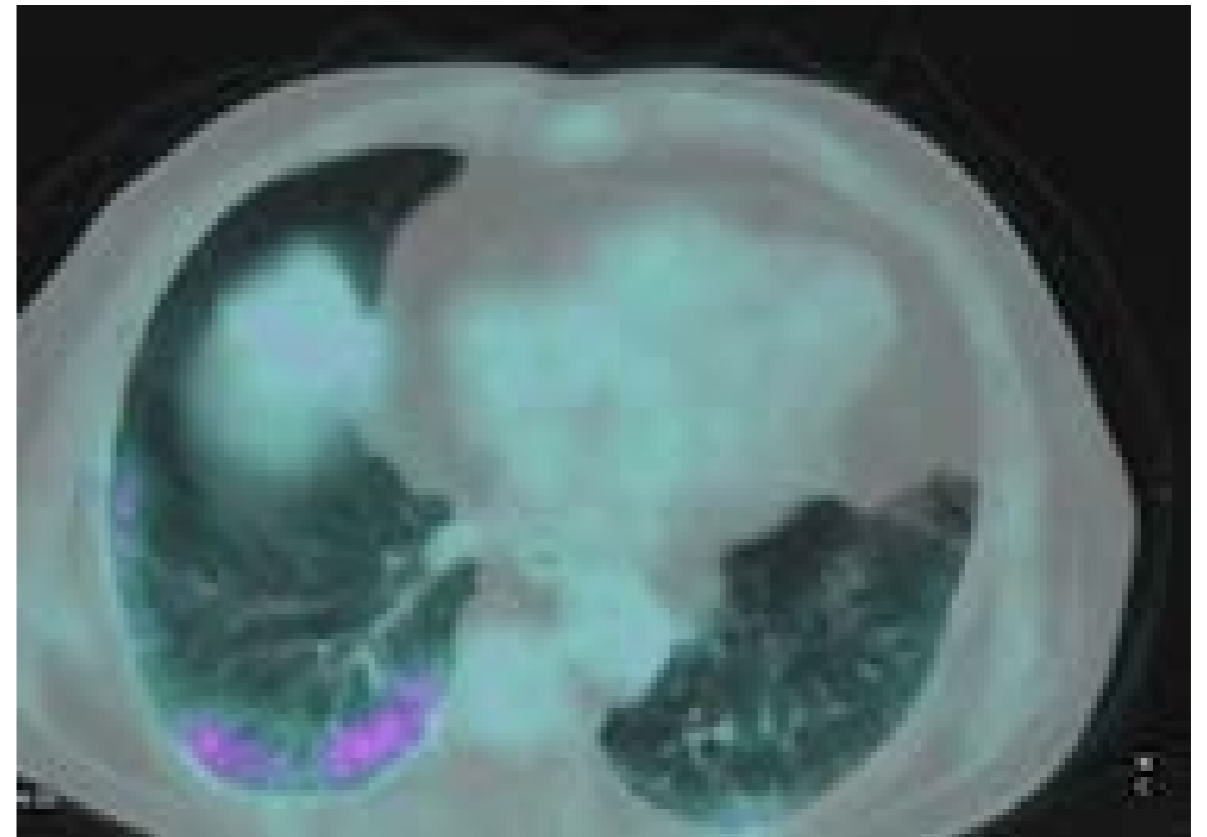
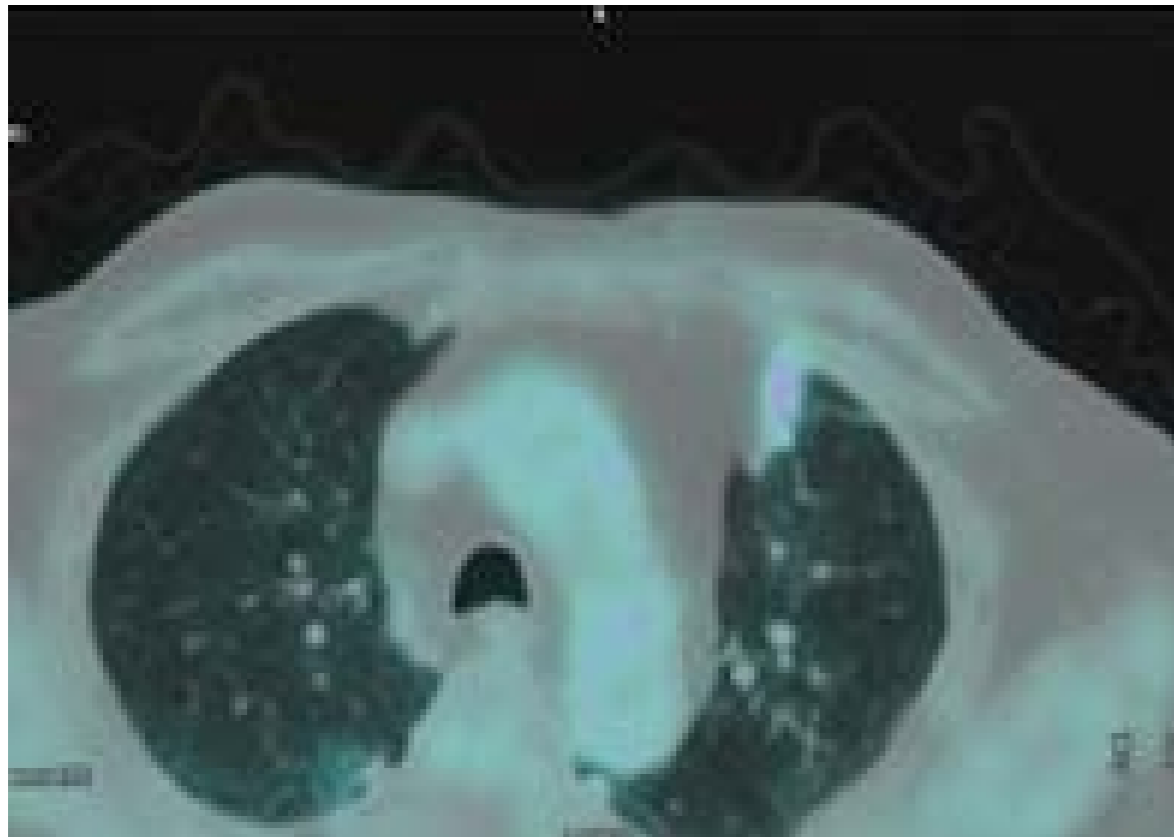
Il Paziente inizia terapia antibiotica aspecifica.

Biopsia polmonare TC-guidata

E.I. “proliferazione di tessuto fibroso associato ad aggregati di infiltrato infiammatorio cronico e granulocitario neutrofilo”



PET/CT-TB



Come proseguire l'iter diagnostico-terapeutico?

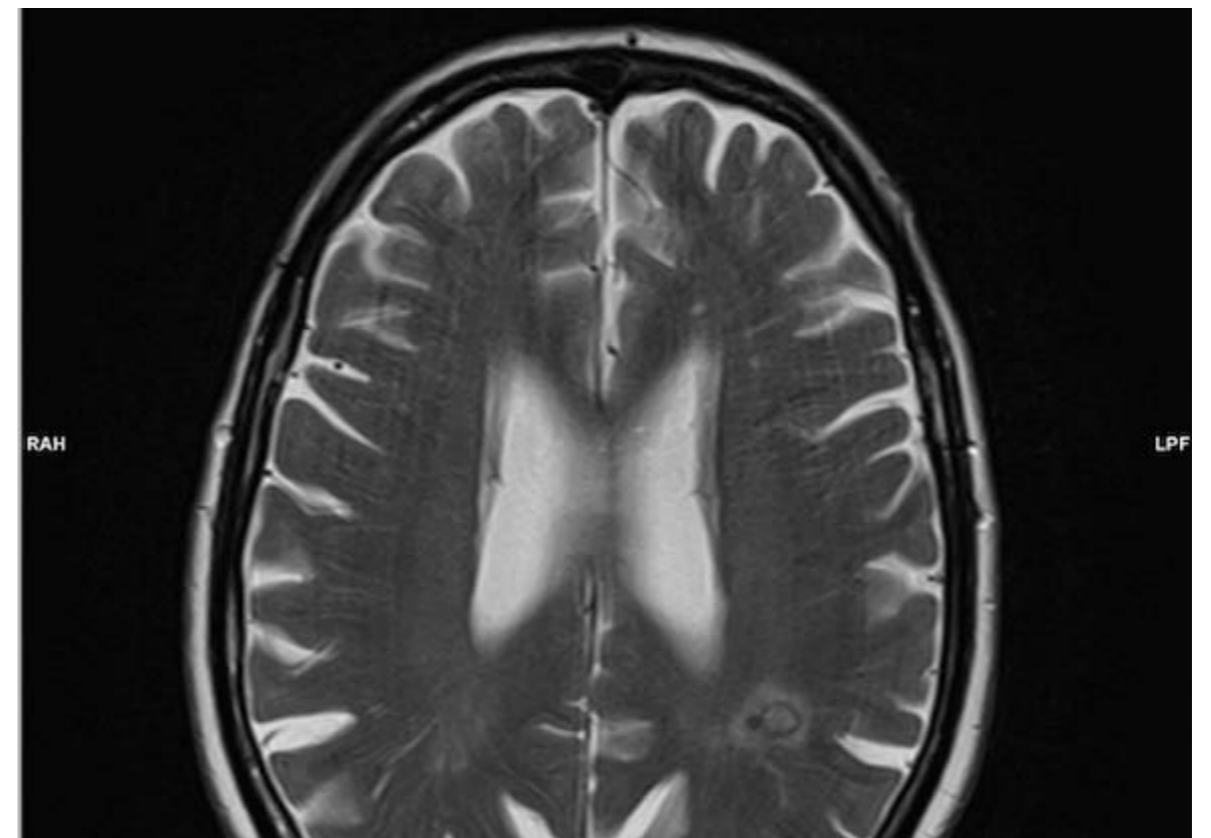
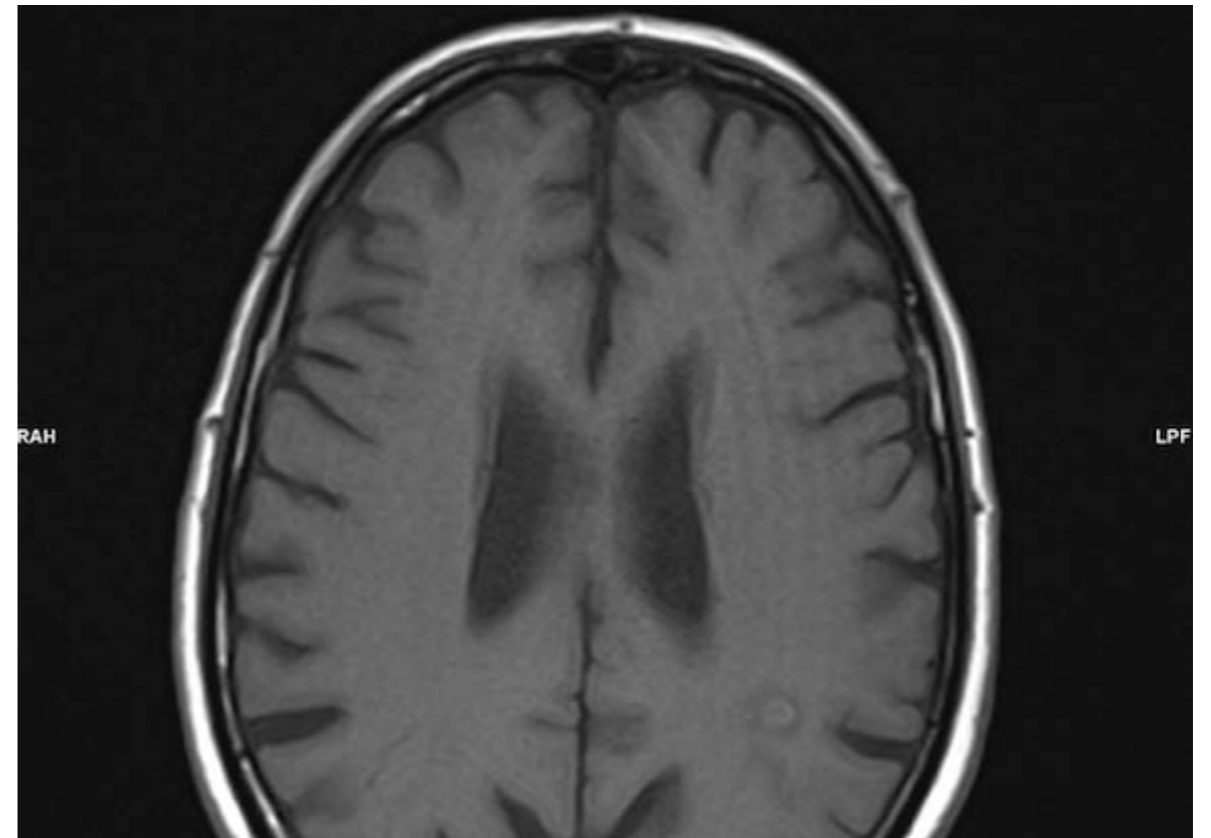
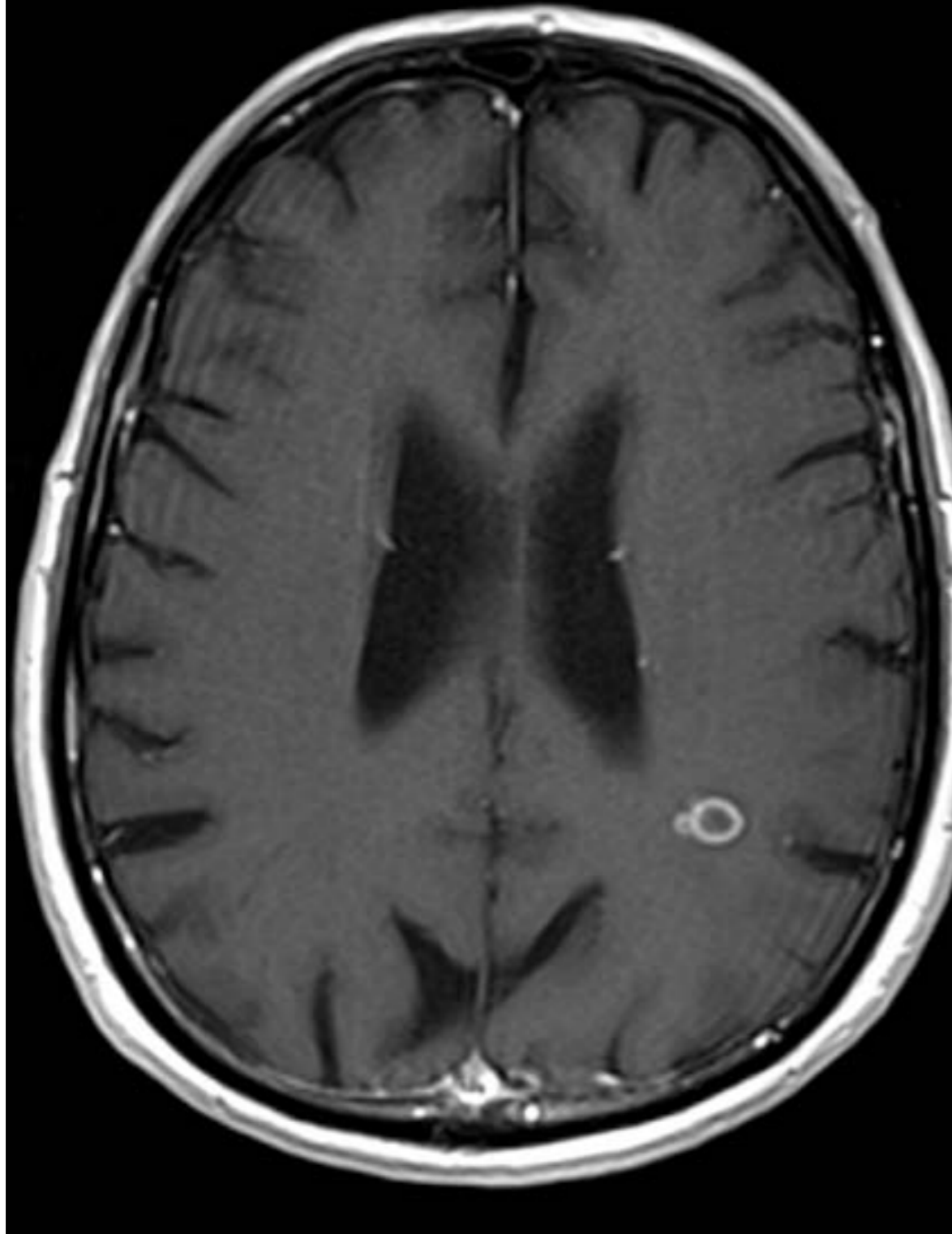
Sospetta neoplasia polmonare ipocaptante e con esame istologico non dirimente, in paziente immunodepresso, con sintomatologia aspecifica.

Biopsia cerebrale?

Ripetere la biopsia polmonare?

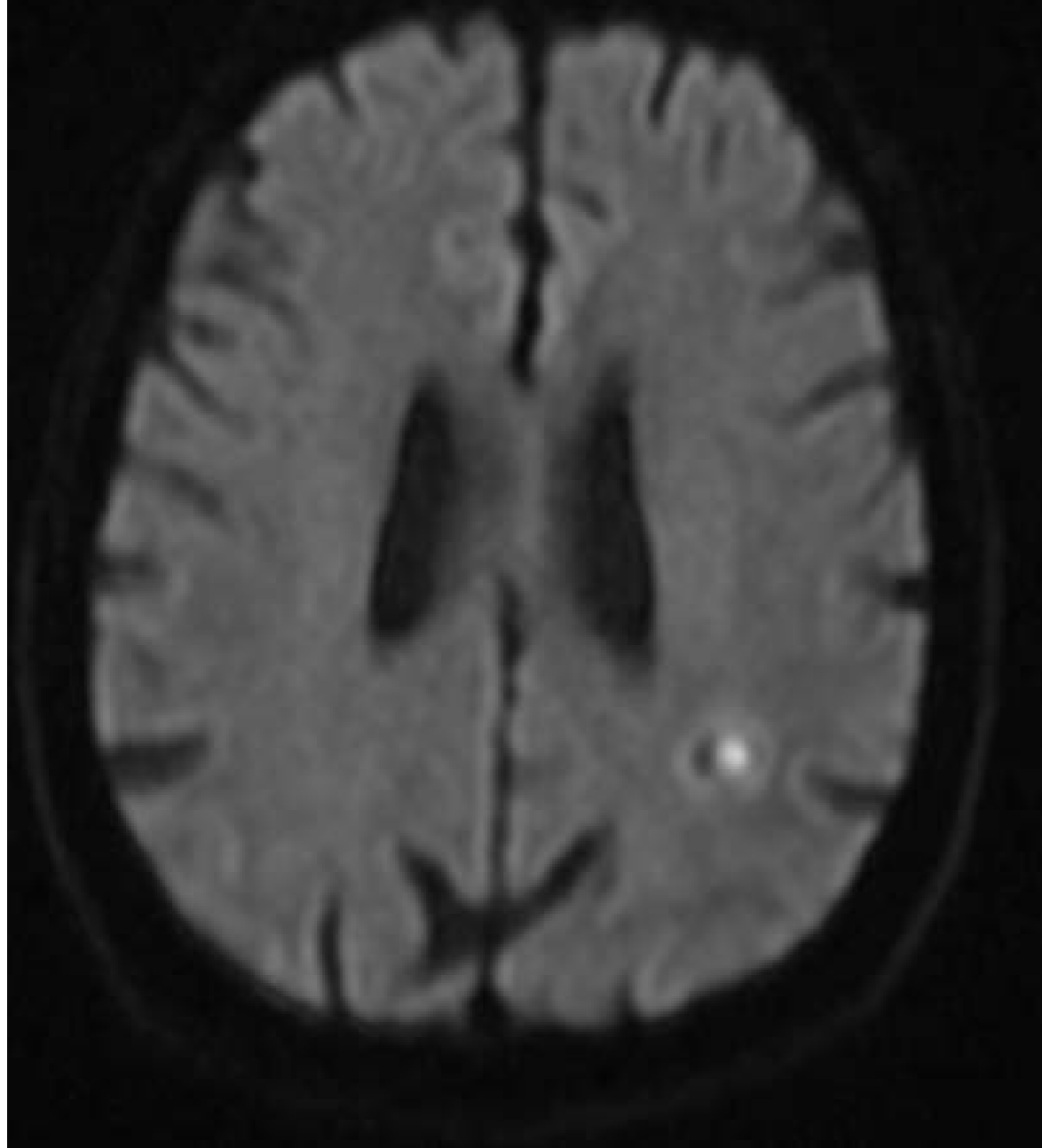
I consulenti Radiologi propongono approfondimento diagnostico del quadro cerebrale con esame RM.

RM Encefalo

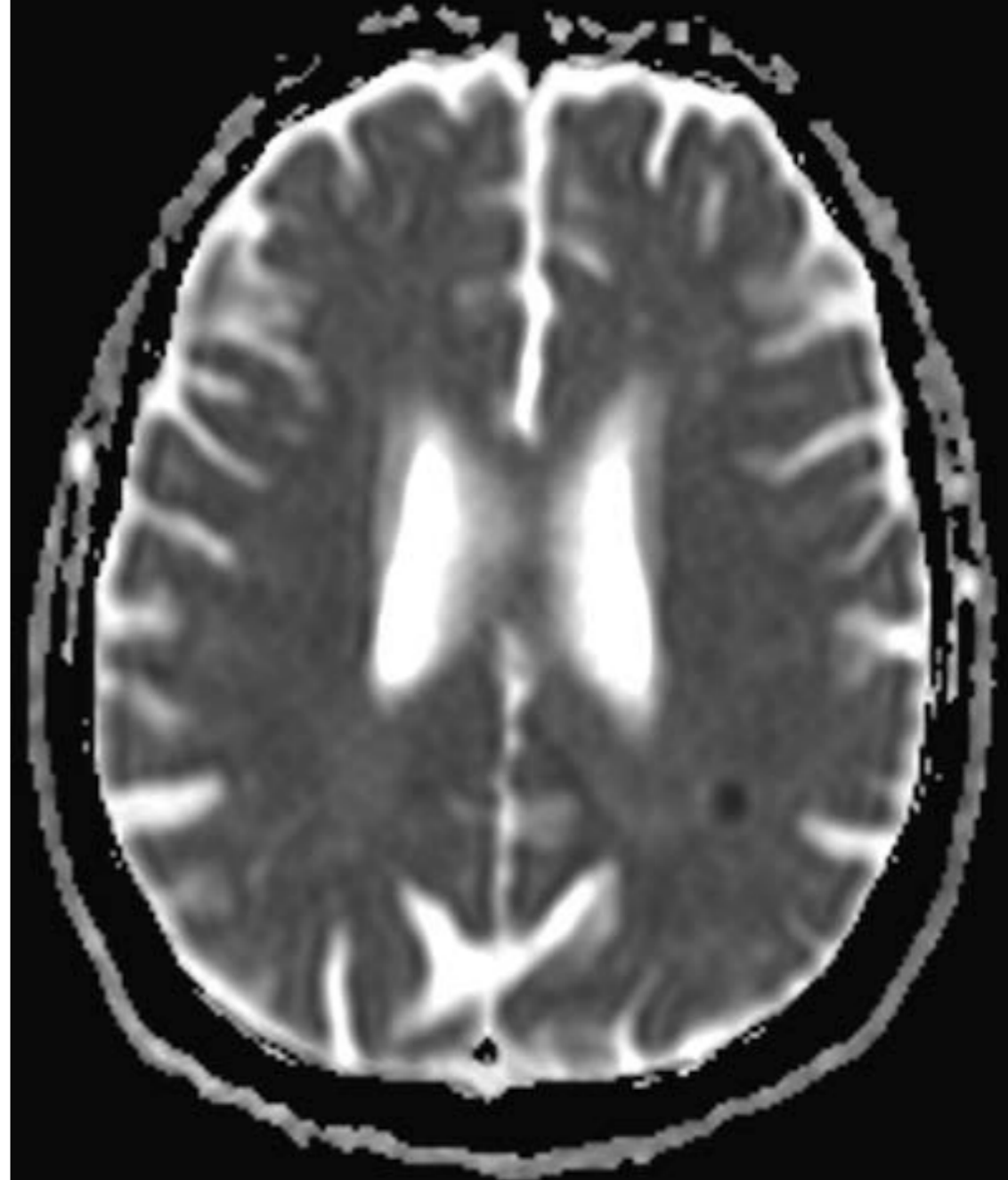


RM Encefalo

ep2d_diff



ep2d_d



L'esame RM pone ulteriore sospetto di lesioni di significato flogistico.

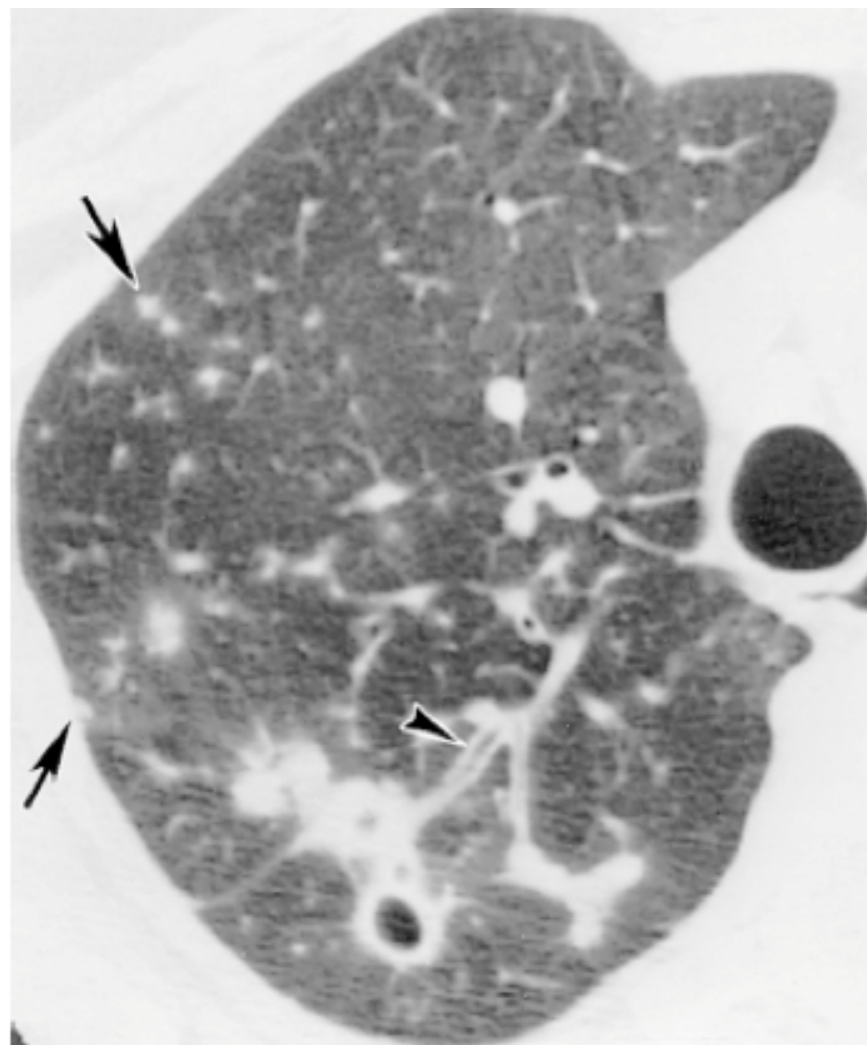
Pertanto il Paziente viene sottoposto a screening infettivologico in immunodepresso.

PCR per micobatteri su istologico del 20-04-2021: "L'indagine molecolare è risultata positiva per **micobatteriosi atipica** (M. Avium, M. Kansasii, M. Fortuitum, M. Chelonae)."

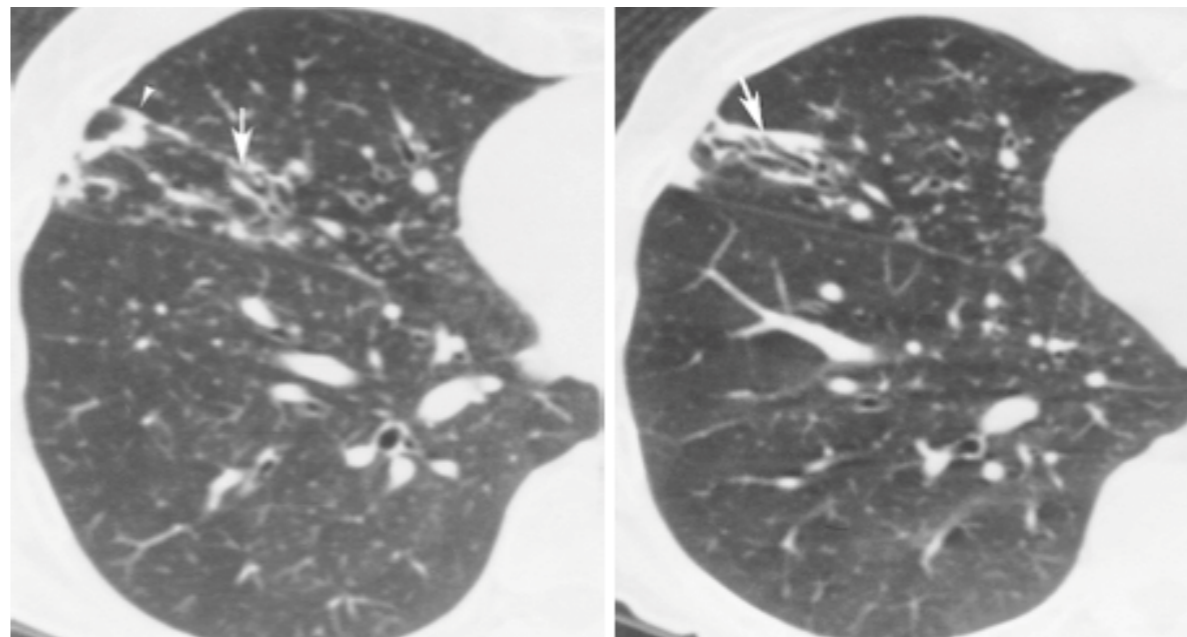
**Processo flogistico disseminato o
neoplasia metastatica?**

Semeiotica TC delle micobatteriosi atipiche

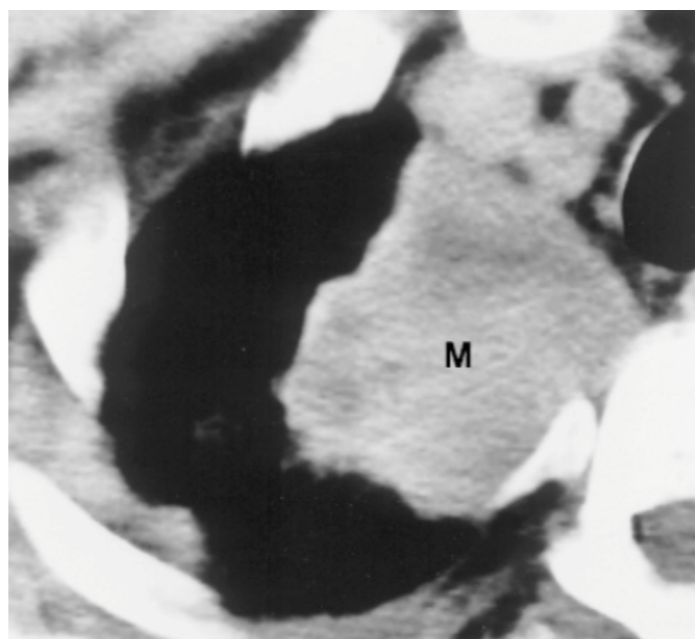
Erasmus JJ, McAdams HP, Farrell MA, Patz EF Jr. **Pulmonary nontuberculous mycobacterial infection: radiologic manifestations.** Radiographics. 1999 Nov-Dec;19(6):1487-505. doi: 10.1148/radiographics.19.6.g99no101487. PMID: 10555671.



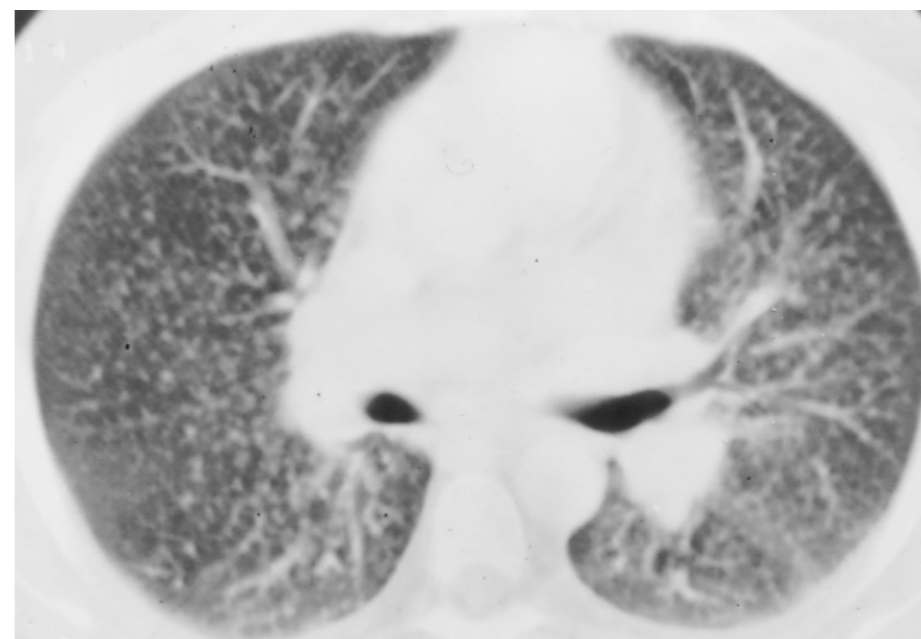
(a) INFEZIONE CLASSICA: noduli centrolobulari (5-15mm) anche con coinvolgimento multisegmentario del parenchima, occasionalmente con associate aree mass-like; cavitazione thin-wall; bronchiectasie.



(b) INFEZIONE NON CLASSICA: bronchiectasie cilindriche e noduli centrolobulari (1-3mm); tree-in-bud.








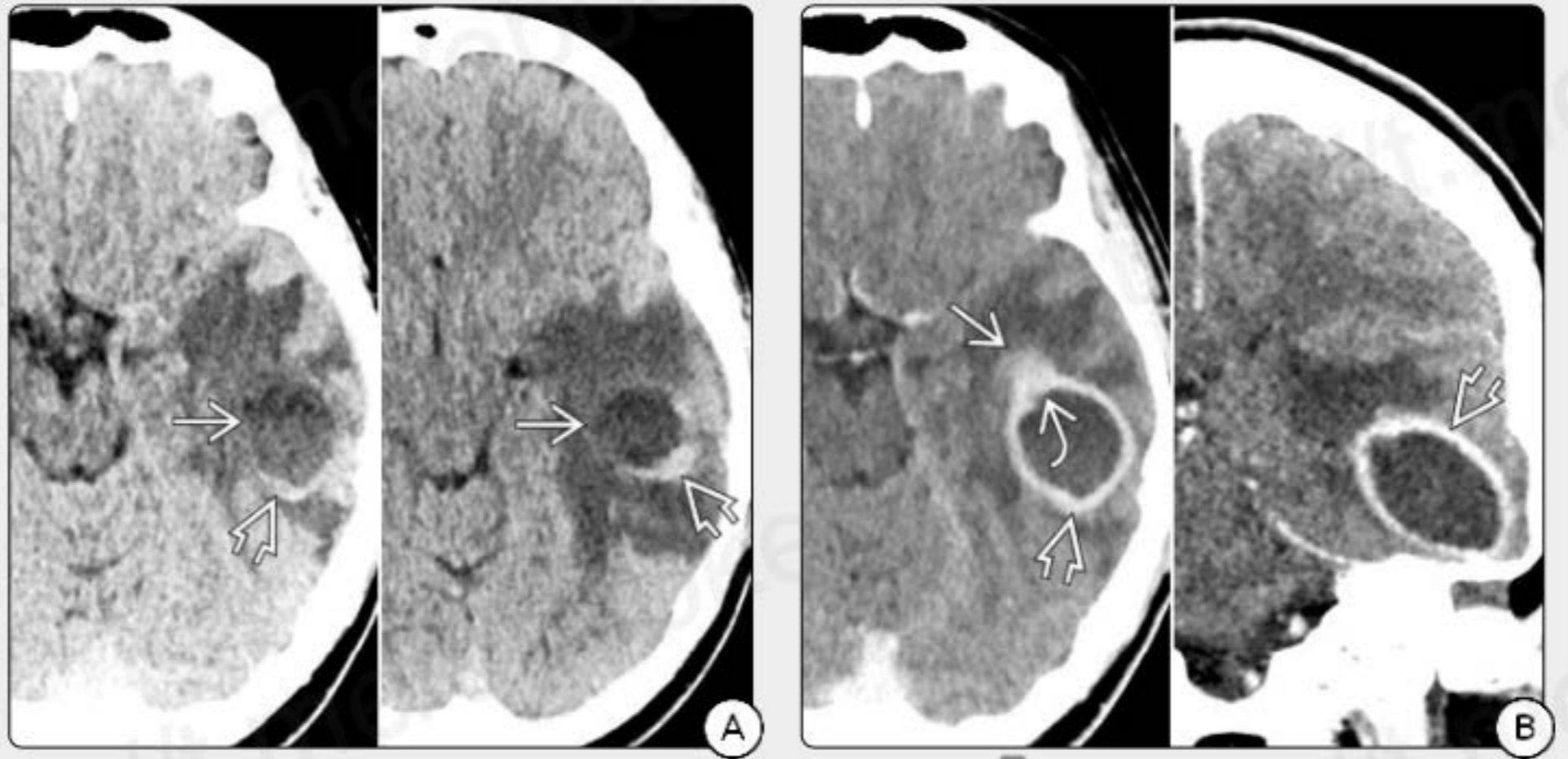
(e) INFEZIONE NEL PAZIENTE IMMUNOCOMPROMESSO: mass-like.



(e) INFEZIONE NEL PAZIENTE IMMUNOCOMPROMESSO: noduli miliariformi.

Semeiotica TC dell'ascesso cerebrale

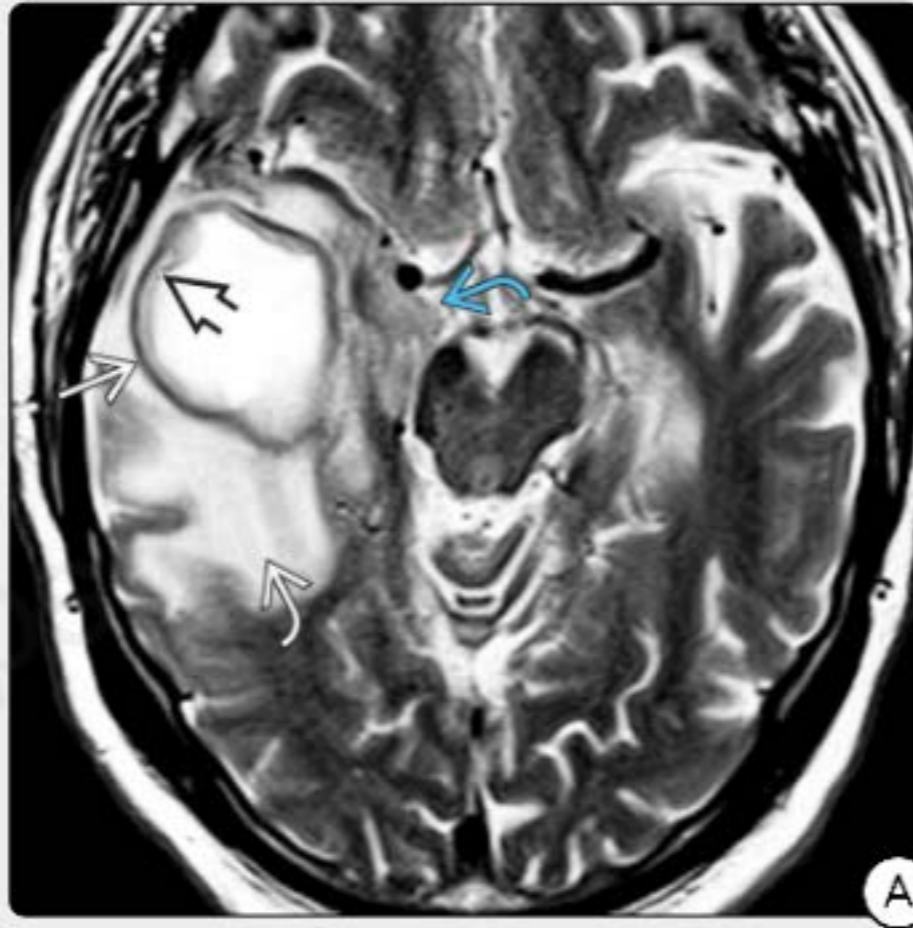
(12-36A) (L and R) NECT scans show large, well-defined lesion with hyperdense rim  and a hypodense center . (12-36B) Axial (L), coronal (R) CECT scans show complete, well-delineated rim enhancement . The abscess has progressed from late cerebritis to the early capsule stage. Note wall defect  with adjacent area of new cerebritis .



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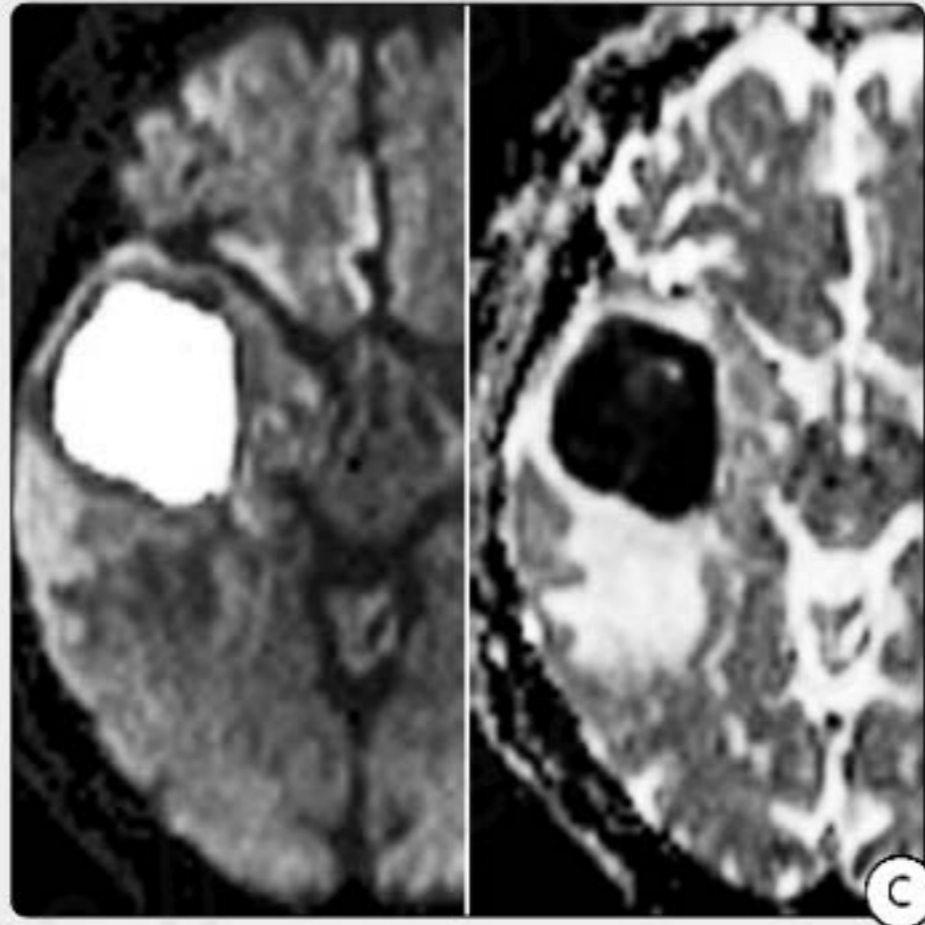
Semeiotica RM dell'ascesso cerebrale / 1

(12-37A) T2WI in early capsule stage of abscess development shows classic "double rim" sign with hypointense outer rim and mildly hyperintense inner rim surrounding very hyperintense necrotic core. Note peripheral edema and mass effect (uncal herniation). (12-37B) T1 C+ FS in the same case shows intense enhancement of the well-developed abscess capsule.



Semeiotica RM dell'ascesso cerebrale / 2

(12-37C) DWI (L) and ADC map (R) in the same case show that necrotic contents of the abscess cavity restrict strongly, whereas the wall of the capsule itself does not. (12-38) MRS in another late cerebritis/early capsule abscess with TR 2,000 TE 35 shows amino acids (valine, leucine, isoleucine) at 0.9 ppm ➡, acetate at 1.9 ppm ➡, lactate at 1.3 ppm ➡, and succinate at 2.4 ppm ➡.



PARENCHYMAL METASTASES: IMAGING AND DDx

CT

- Variable density (most iso-, hypodense)
- Most enhance on CECT
- Perform bone CT for calvarial, skull base metastases

T1WI

- Most metastases: iso- to slightly hypointense
- Melanoma metastases: hyperintense
- Hemorrhagic metastases: heterogeneously hyperintense

T2/FLAIR

- Varies with tumor type, cellularity, hemorrhage
- Most common: iso- to mildly hyperintense
- Can resemble small vessel vascular disease

T2*

- Subacute blood, melanin "bloom"

T1 C+

- Almost all nonhemorrhagic metastases enhance strongly
- Solid, punctate, ring, "cyst + nodule"

DWI

- Variable; most common: no restriction
- Highly cellular metastases may restrict

MRS

- Most prominent feature: lipid peak
- Elevated Cho, depressed/absent Cr

Differential Diagnosis

- Most common: abscess, septic emboli
- Less common
 - Glioblastoma
 - Multiple embolic infarcts
 - Small vessel (microvascular) disease
 - Demyelinating disease
 - Multiple cavernous malformations

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Take home messages

- Semeiotica TC delle micobatteriosi atipiche;
- Semeiotica TC ed RM dell'ascesso cerebrale (vs metastasi);
- **Ruolo del Radiologo nella gestione multidisciplinare del Paziente.**

References

- Erasmus JJ, McAdams HP, Farrell MA, Patz EF Jr. **Pulmonary nontuberculous mycobacterial infection: radiologic manifestations.** Radiographics. 1999 Nov-Dec;19(6):1487-505. doi: 10.1148/radiographics.19.6.g99no101487. PMID: 10555671.
- Villanueva-Meyer JE, Cha S. **From Shades of Gray to Microbiologic Imaging: A Historical Review of Brain Abscess Imaging: RSNA Centennial Article.** Radiographics. 2015 Sep-Oct;35(5):1555-62. doi: 10.1148/rg.2015140297. Epub 2015 Jul 24. PMID: 26207582.