Mycobacterium abscessus as a complication of immunosuppression after allogeneic stem cell transplantation for congenital neutropenia

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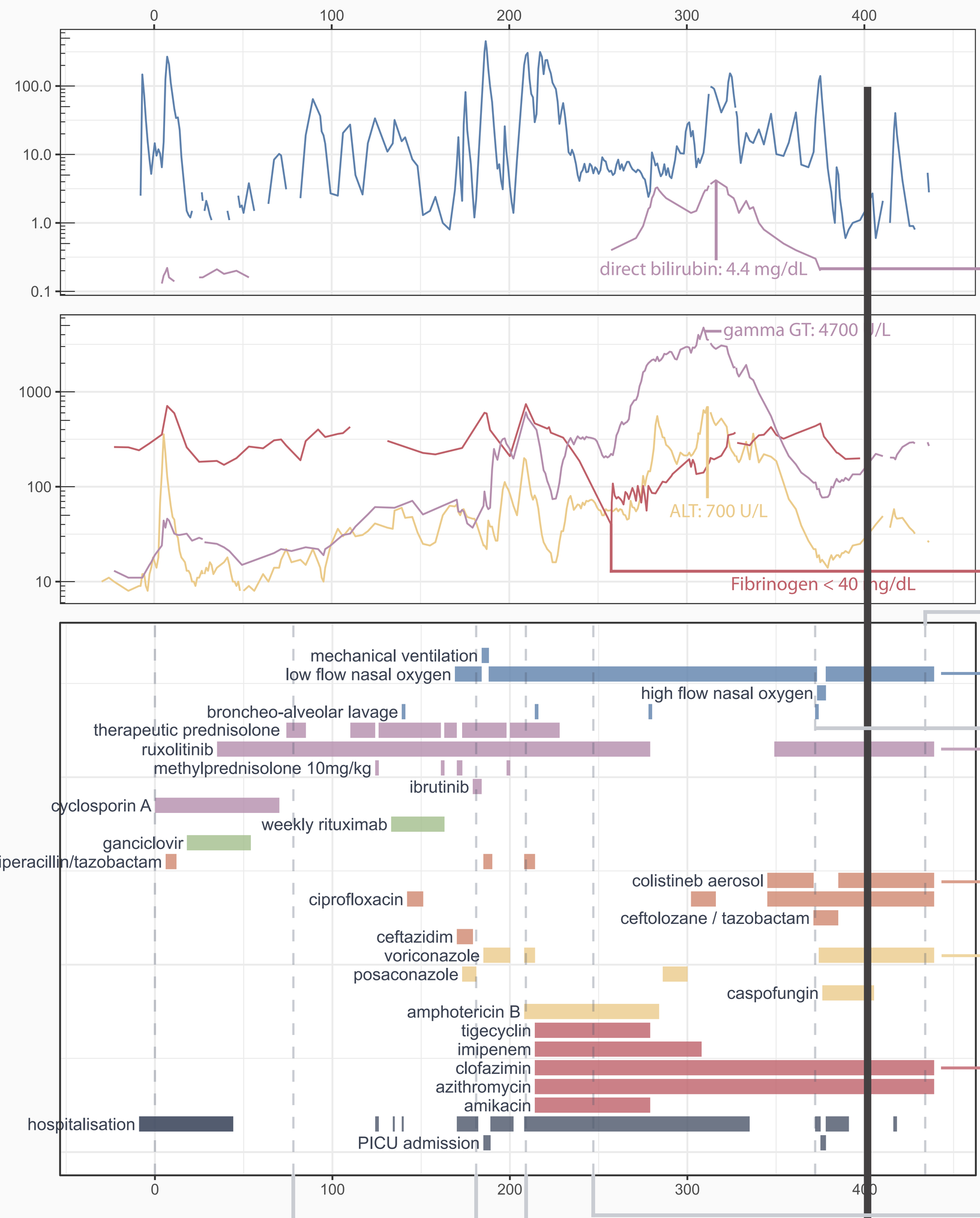
Background

- **Mycobacterium abscessus** is a rapidly growing NTM commonly found in soil and water
- Intrinsic resistance to numerous antimicrobial classes & can form biofilms
- Pulmonary disease is most common presentation, **disseminated infection is rare and associated with high morbidity and mortality**, especially in immunocompromised patients
- Allogeneic stem cell transplantation further promotes MA infection due to prolonged neutropenia, immunosuppression and delayed T cell reconstitution, in the illustrated case due to pulmonary GvHD requiring severe immunosuppression.

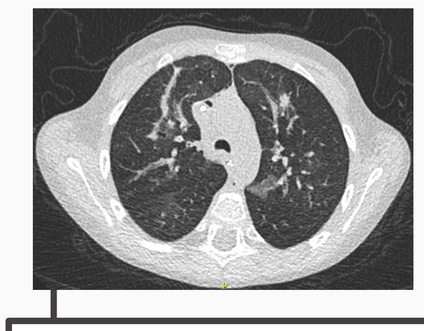
Case report: 3 year old boy with congenital neutropenia due to CSF3R mutation, alloSCT with 10/10 MUD, conditioning with BuFlu + ATG/CsA



Severe drug-induced hepatitis due to the multi-drug regimen.

Tigecyclin-induced hypofibrinogenemia

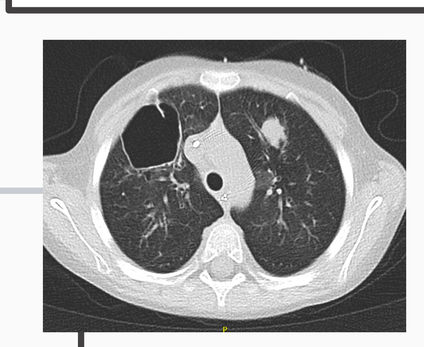
Day 434



Collapse of pulmonary cavity, increased ground-glass opacities: interplay between infection and bronchiolitis obliterans: dose increase of ruxolitinib

All follow-up cultures for M. abscessus negative

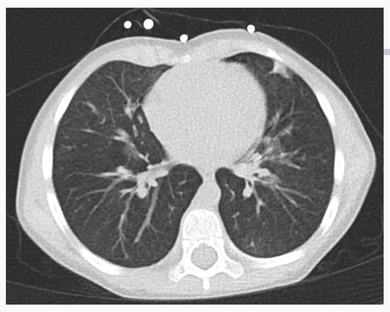
Planned duration of clofazimin: 12 months after first negative culture



Day 372

Day 310-350

Respiratory deterioration: sputum sample positive for pseudomonas aeruginosa: despite colistineb aerosol and ciprofloxacin worsening respiratory status after BAL: admission to PICU with HFNO due to desaturation, tachypnea and wheezing after BAL. BAL positive for (1) **aspergillus spp**: re-introduction of voriconazole TDM and caspofungin and (2) **pseudomonas**: 2 weeks treatment with ceftolozane / tazobactam with good effect.



Day 78

Persistent dyspnea and wheezing after earlier episode of pneumonia with ground-glass opacities on CT: possible pulmonary GvHD.

Day 181

Further respiratory deterioration, broncheo-alveolar lavage positive for **aspergillus spp**, treated with posaconazole and **pseudomonas aeruginosa**, treated with ciproflocaxin and ceftazidim.
EBV and CMV reactivation: ganciclovir and rituximab.

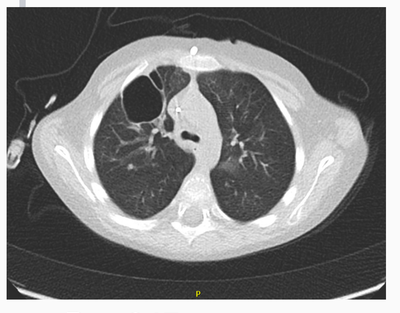
Ibrutinib for pulmonary GvHD refractory to high dose steroids and maximum dose of ruxilitinib.

Day 190

PICU admission with fluid-refractory septic shock and multi-organ failure: vasopressor support and mechanical ventilation for 48 hours, decreased fractional shortening of 20%: ibrutinib discontinued.

Day 209

Severe respiratory exacerbation with pronounced wheezing: 30 mm pulmonary cavity and **positive blood cultures and BAL for (1) M. abscessus massiliense**, treatment see figure (red bars), and BAL positive for (2) **pseudomonas aeruginosa**, now resistant to ceftazidim and piperacillin/tazobactam and (3) **aspergillus fumigatus**, treated with amphotericin B.



Day 247

Day 0

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