

Hypogammaglobulinemia and Respiratory Failure

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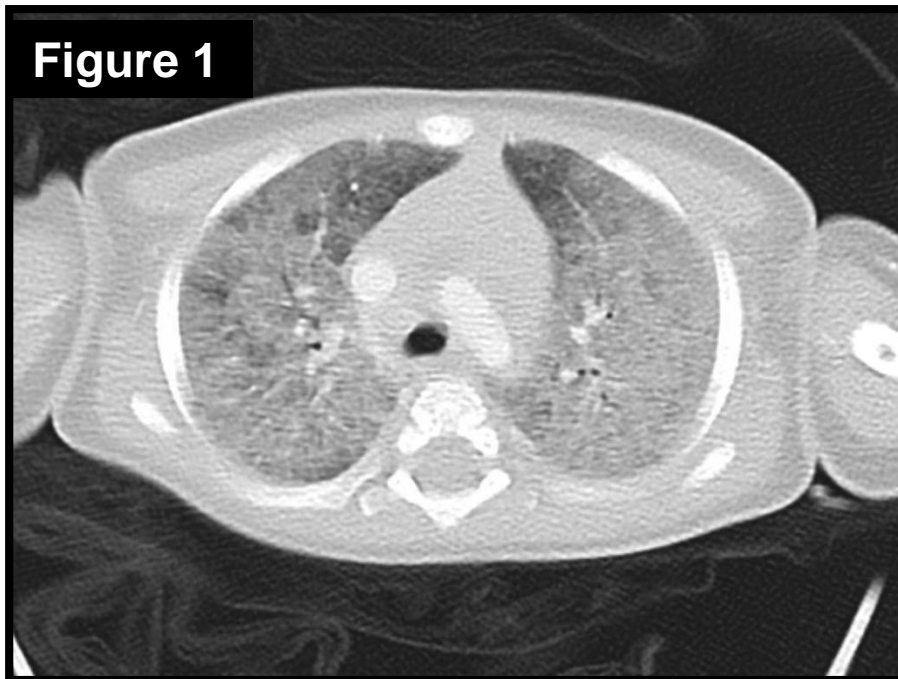
Medical College of Wisconsin

CIS PID School 2016

Inpatient Consultation

- 6mo male admitted with cough and cyanosis (Pox 50%)
- Intubated due to respiratory failure and failed extubation
- **PMHx:** Term newborn w/o complications. Newborn screen normal. No infectious history or other illnesses prior to hospitalization. Immunizations up to date
- **FHx:** unremarkable
- **SHx:** Lives with parents. No pets, no smokers. Not in daycare.

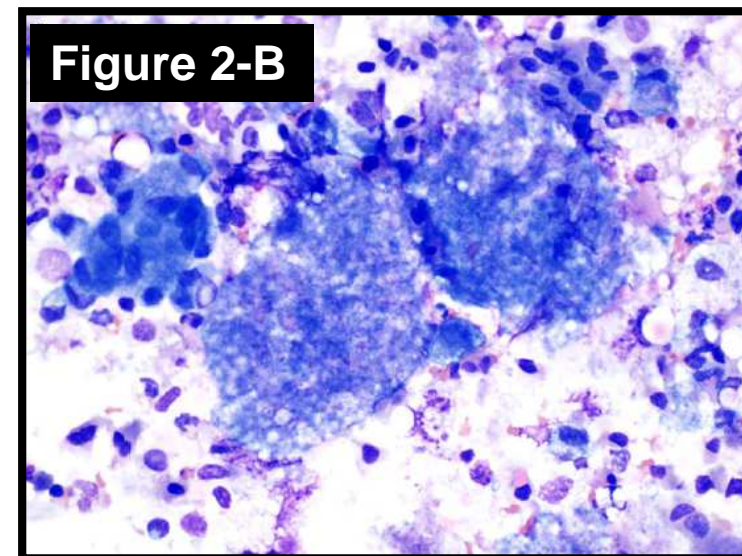
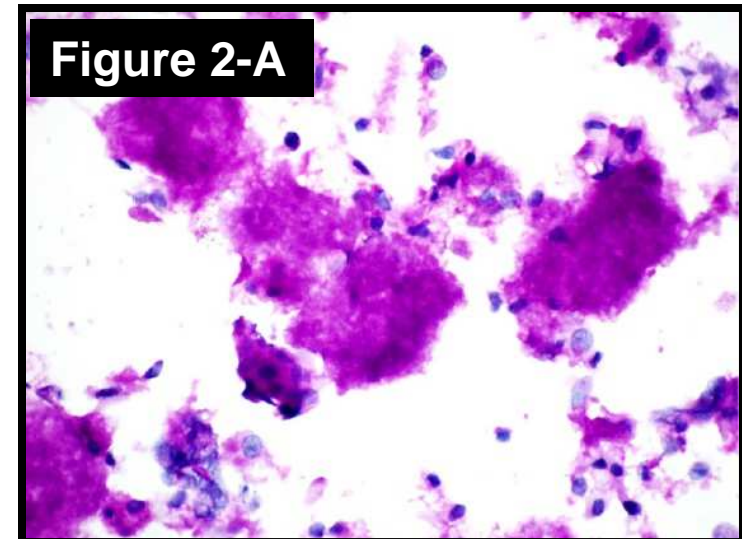
Studies



Ground glass opacities, interstitial thickening

Pertinent lab studies:

- IgG=<80, IgA=8, IgM=108 mg/dL
- Vaccine titers not detected (ND)
- Switched memory B cells ND



Proteinaceous material and surfactant, c/w PAP

Negative/Normal Studies

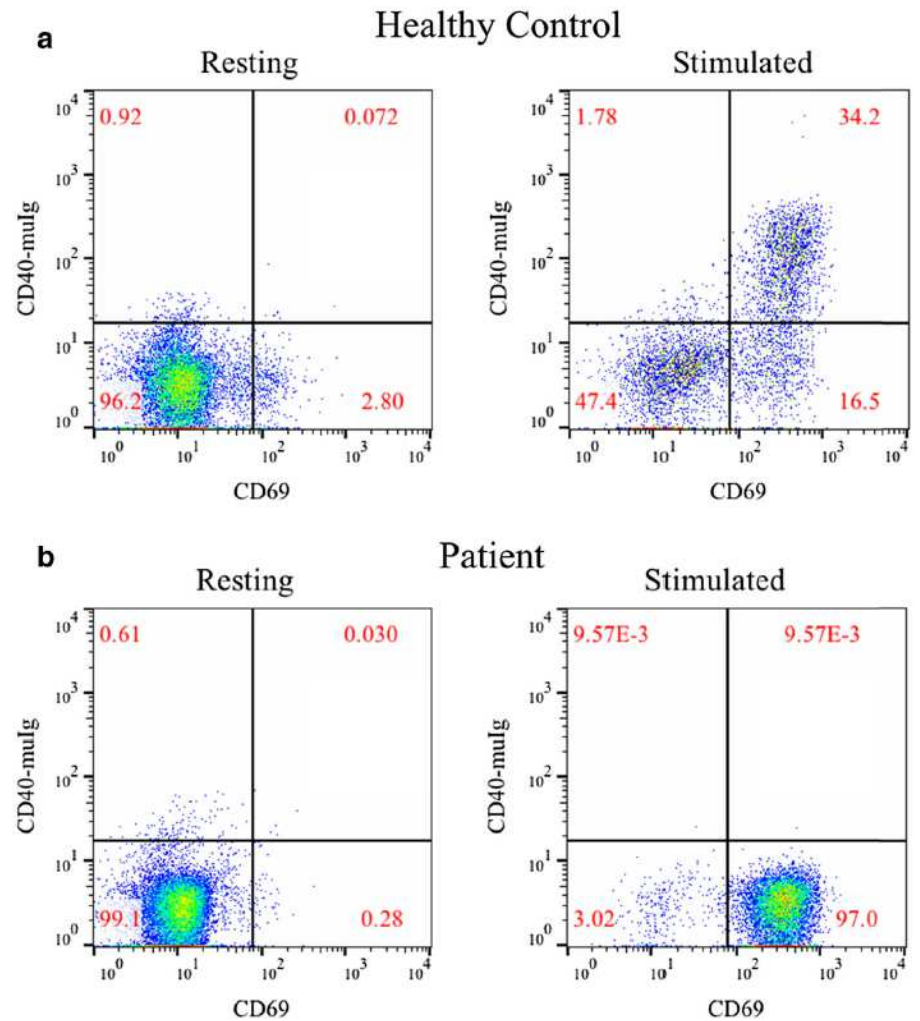
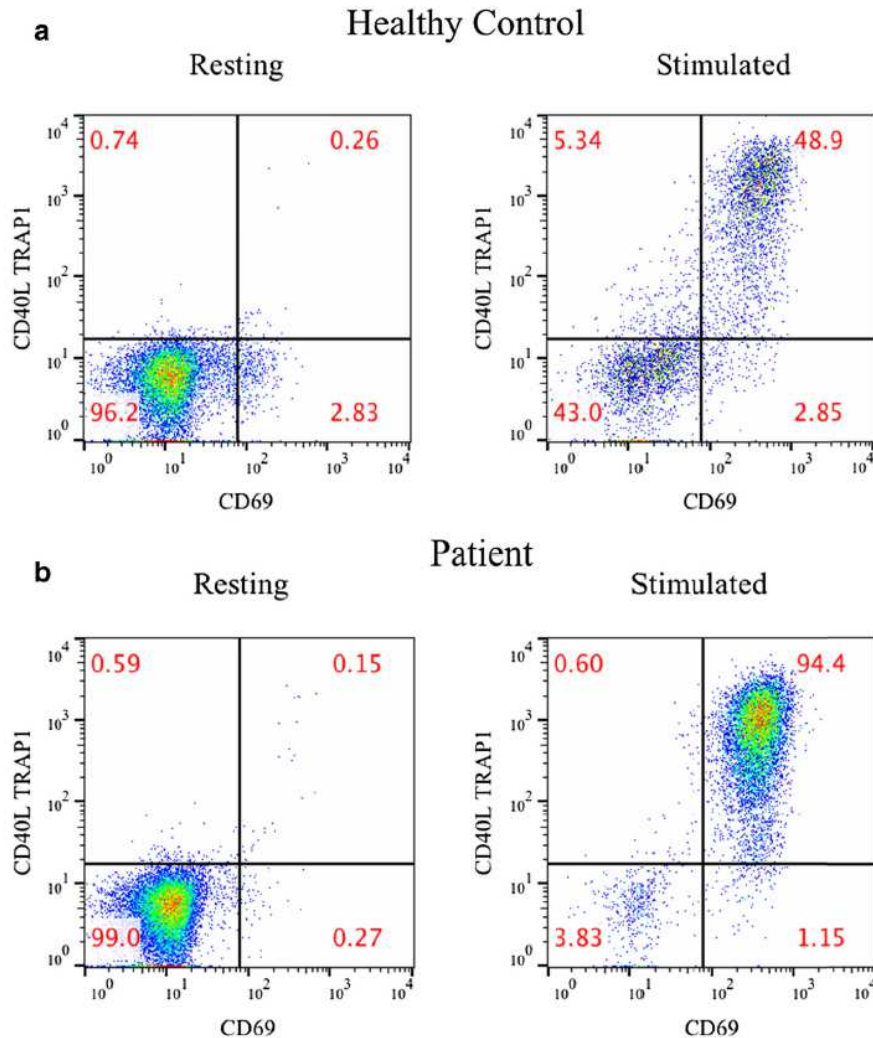
- CD40 staining
- CD40L staining (activated T cells)
- TLR assay
- α -1 antitrypsin (stool)
- 24hr urine protein
- DHR
- PAP genes: *SPB*, *SPC*, *ABCA3*, *NKX2.1*, *GM-CSFR*

What Next?

CD40L Evaluation

Expression

Binding



Diagnosis

- **WES: hemizygous point mutation in the *CD40L* gene (c.608G<C)**
- **CD40L expression is normal but the protein is dysfunctional – unable to bind a CD40-Ig construct**
- **X-linked hyper IgM syndrome**

