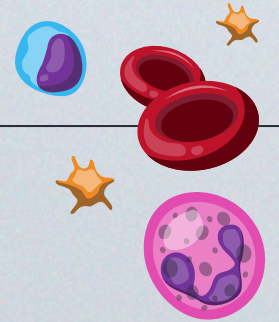


# Defying challenges

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## Multiple Myeloma

*Gabriela M. Torres, MD*  
*SJCH/VACHS Hematology Oncology Fellow*  
*March 1<sup>st</sup>, 2024*



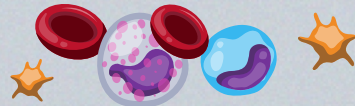
**HEMATOLOGY  
& ONCOLOGY**

San Juan City Hospital  
VA Caribbean Healthcare System

# HPI

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65 y/o female with PMHx of Hypertension and no toxic habits is referred to our services on April 2016 after being diagnosed with Multiple Myeloma

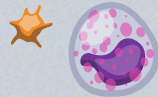


# Diagnosis

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## Routine Laboratories

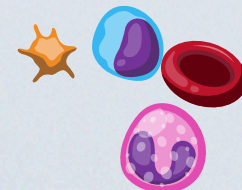
- No CRAB criteria
- Skeletal survey and PET/CT study negative for lytic bone lesions



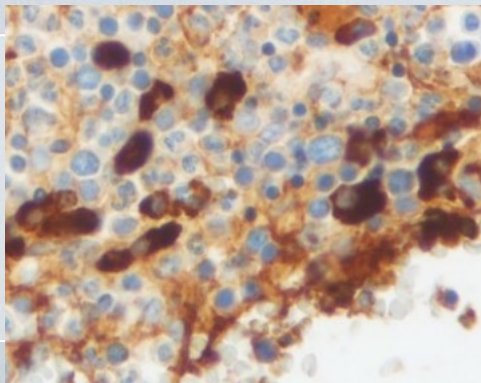
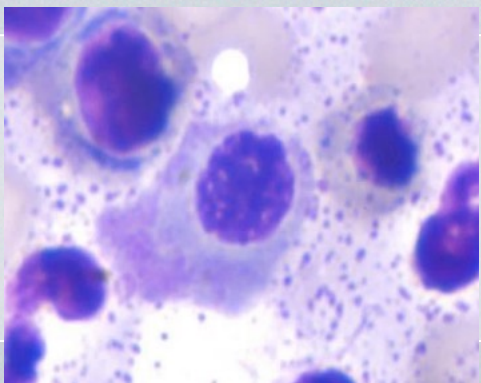
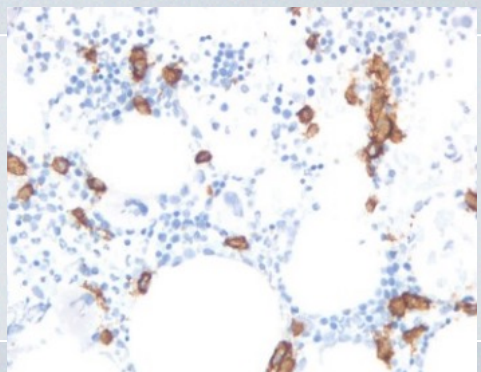
## Myeloma Panel

<b>Serum M-spike</b>	<b>2.7 g/dL</b>
<b>IgG levels</b>	<b>3,105 mg/dL</b>
<b>IgA</b>	< 42 mg/dL
<b>IgM levels</b>	< 25 mg/dL
<b>Beta-2 microglobulin</b>	2.2 mg/L
<b>LDH</b>	438 U/L





# Bone Marrow Biopsy



**40%-45% plasma cells**

Normocellular bone marrow involved by plasma cell myeloma

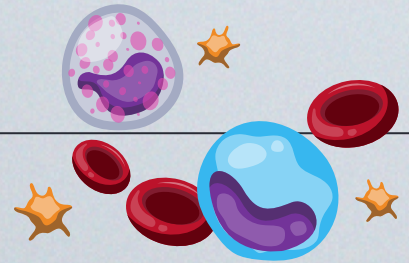
FISH positive for 1q+, 4p-, 14q-, 17p- and -17

ISS IIIA high risk,  
asymptomatic

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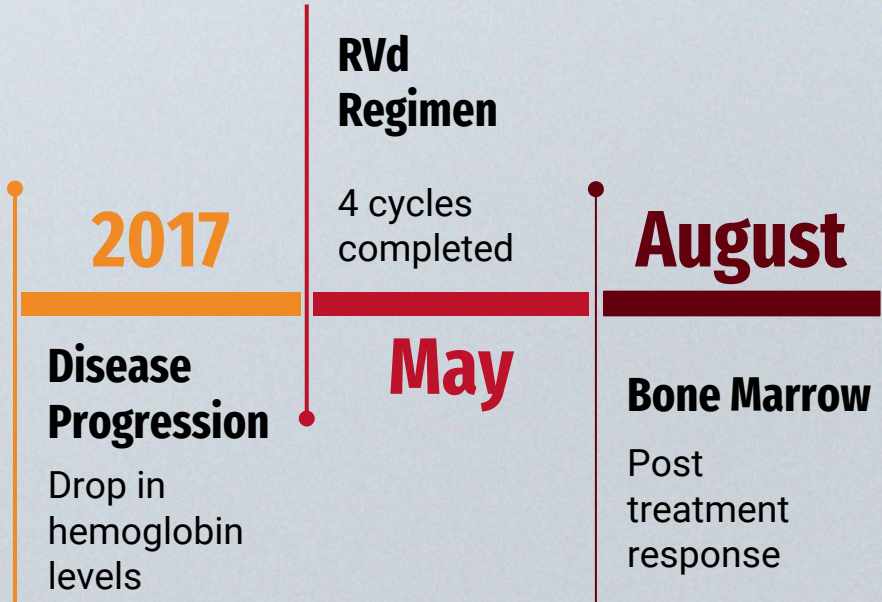
**IgG kappa**

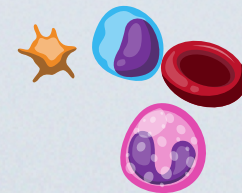
**Multiple Myeloma**



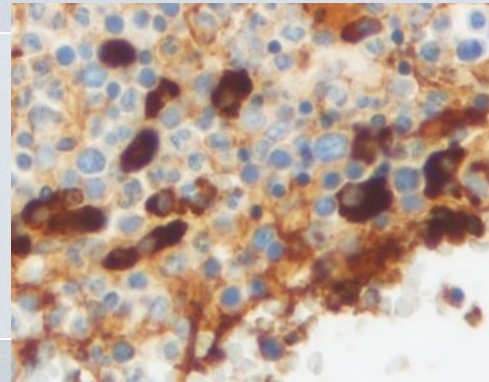
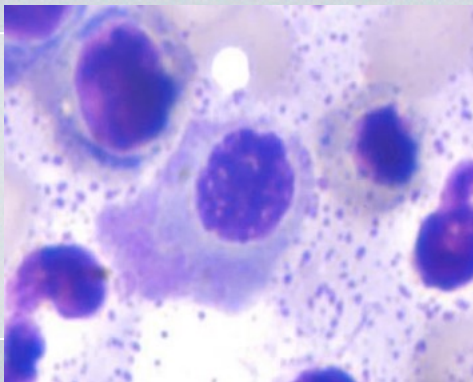
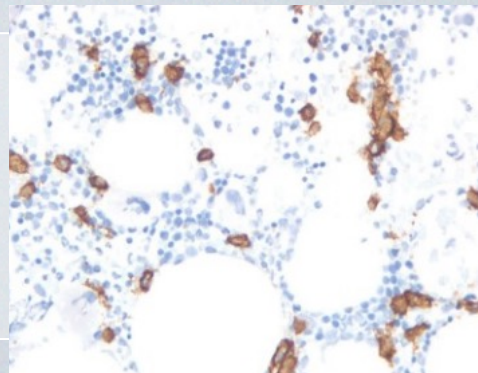


# Clinical Course





# Bone Marrow Biopsy



## Partial Response

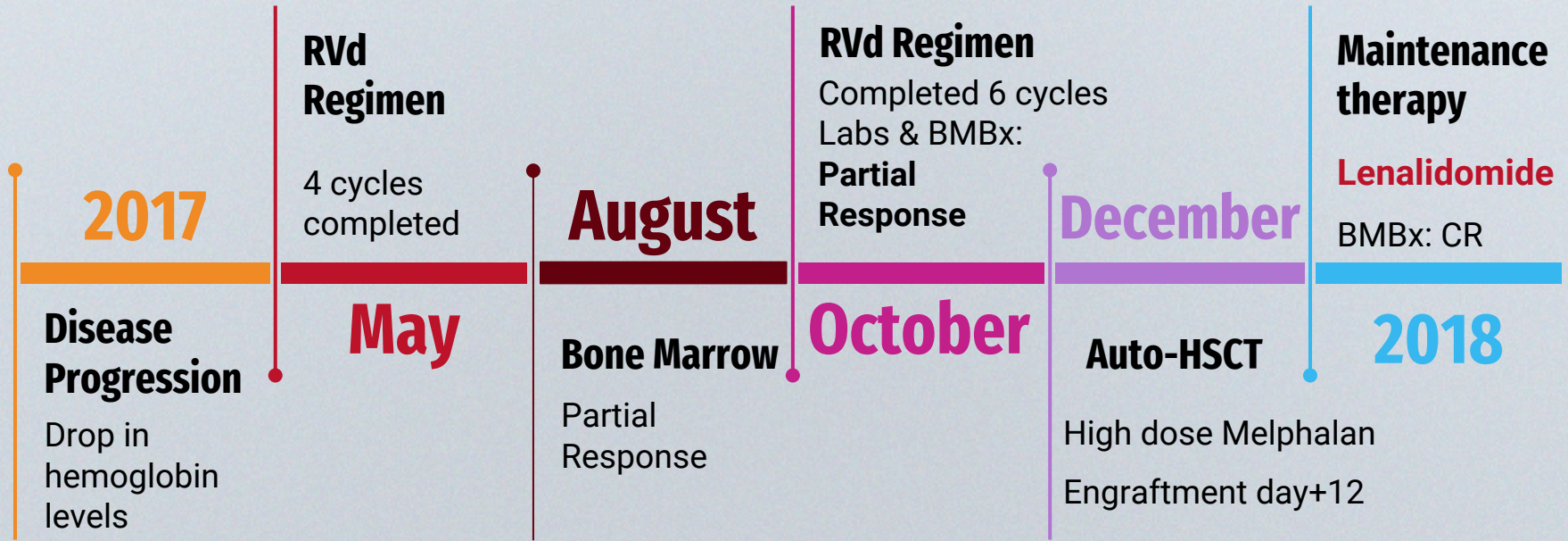
Residual (~**5%**)  
IgG/Kappa myeloma

Low level extra copy  
of 1q25

74% reduction in  
serum M-spike:  
**2.7g/dL** → **0.7g/dL**



# Clinical Course







# Clinical Course

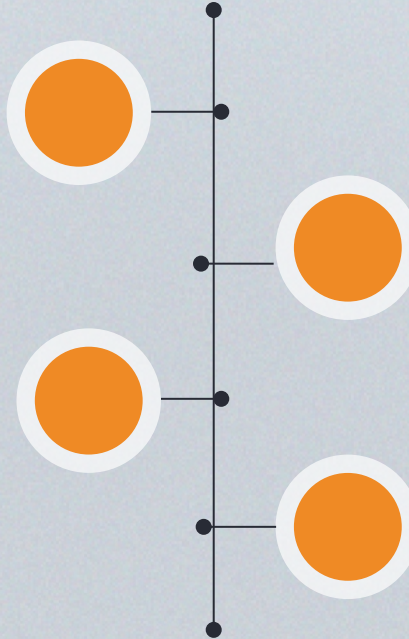
## 2020

**March 2020**

Increasing M-spike  
Started on **Pomalidomide**

**November 2020**

Bone Marrow Biopsy:  
**low level (1-2%) residual  
disease**



**October 2020**

**Isatuximab-irfc** added due  
to progressive disease.  
Later discontinued due to  
severe reaction

**November 2020**

Continued on  
**Pomalidomide** 4mg POD  
and Zoledronic acid

# Clinical Course

## 2021

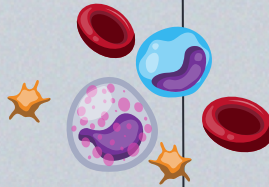
### Laboratories

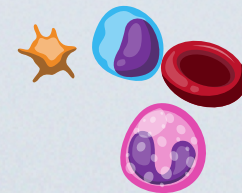
Creatinine	0.72 mg/dL
Calcium	9.3 mg/dL
Myeloma Panel	
Kappa FLC	122.6 mg/L
Lamda FLC	13.7 mg/L
FLC ratio	8.95
Serum M-spike	0.64 g/dL
Urine M-spike	Not detected
Ig levels	Normal

### Management

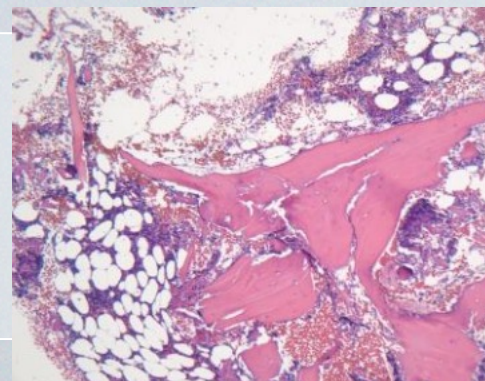
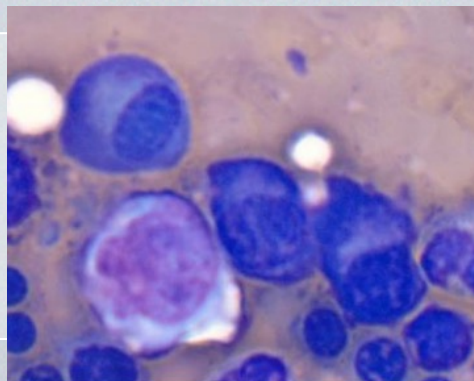
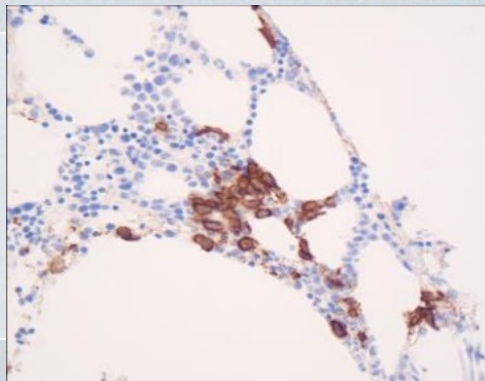
**Elotuzumab +  
Pomalidomide +  
Dexamethasone**

3 cycles





# Post treatment BM Biopsy



## Relapsed High Risk Myeloma

Normocellular BM with  
**10%** kappa monoclonal  
plasma cells

Kappa monoclonal  
plasma cells with  
**aberrant phenotype**

Cytogenetic FISH:  
**TP53 deletion**  
Trisomy 9  
Extra copies of 1q25  
Loss of IGH

# Clinical Course

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## 2022

### New Therapy Regimen

Daratumumab  
+  
Carfilzomib  
+  
Dexamethasone

### Bone Marrow Biopsy

- Persistent high risk IgG/Kappa Myeloma (**5% involvement**)
- FISH with TP53, extra 1q25 and trisomy 9

Patient continued treatment and completed **9 cycles** on July 2022

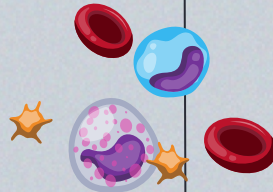
# Post treatment workup

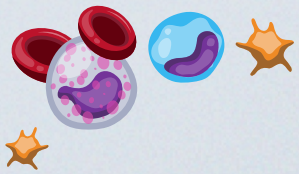
	Nov/2021	June/2022	July/2022
<b>Kappa FLC</b>	51.3 mg/dL	57.3 mg/L	82.6 mg/L
<b>Lamda FLC</b>	< 1.5 mg/dL	< 1.5 mg/L	< 1.5 mg/L
<b>K/L ratio</b>	> 34.2	> 38.2	> 55.07
<b>Serum M-spike</b>	0.8 g/dL + 0.1 g/dL	0.7g/dL+ 0.1g/dL	0.7 g/dL
<b>IgG levels</b>	963 mg/dL	1,009 mg/dL	
<b>B2-MG</b>	1.5 mg/L	1.6 mg/L	

## Bone Marrow Biopsy

Persistent high risk IgG/Kappa Myeloma  
(**10% involvement**)

FISH with TP53, extra 1q25, loss of IGH  
and trisomy 9



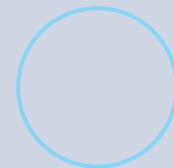


# Clinical Course Summary

<b>2017</b>	<b>Lenalidomide + Bortezomib + Dexa</b>	excellent response
<b>2018</b>	<b>S/P Autologous HSCT → Lenalidomide</b>	maintenance
<b>2020</b>	<b>Pomalidomide</b>	↑ M-spike
<b>2020</b>	<b>Isatuximab</b> (added due to progressive disease)	Discontinued
<b>2020</b>	<b>Continued on Pomalidomide</b>	Progression
<b>2021</b>	<b>Elotuzumab + Pomalidomide + Dexa</b>	Progression
<b>2022</b>	<b>Daratumumab + Carfilzomib + Dexa</b>	Progression

# What's next?

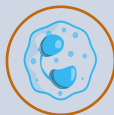
## 2022



### OPTIONS

Candidate for  
**BCMA CART  
therapy**

2022  
August



### REFERRAL

Evaluated at **Moffitt  
Cancer Center** for  
CART  
Issues with healthcare  
insurance

2022  
August



### TREATMENT

Belantamab  
Mafodotin-blmf  
started as alternate  
option

2022  
September



### TOXICITY

SE: **grade 2  
keratopathy**  
Kappa FLC slight  
decrease

2022  
September



### NEXT STEP

Patient remains without  
treatment, waiting for  
approval of CART

2022  
November



# New Therapy Regimen

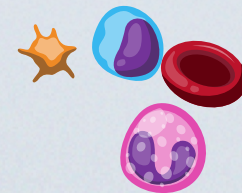
2023

Teclistamab SQ

	Prior to therapy	Cycle 2	Cycle 4
Kappa FLC	116.0 g/dL	0.8 g/L	< 0.7 g/dL
Lambda FLC	2.3 g/dL	< 1.5 g/L	< 1.5 g/dL
K/L ratio	50.43	0.53	
Serum M-spike	1.0 g/dL	-----	0.5 g/dL (urine: 0.0)
IgG levels	963 mg/dL	865 mg/dL	585 mg/dL
IgM	-----	< 5 mg/dL	< 5 mg/dL
IgA	-----	< 5 mg/dL	< 5 mg/dL

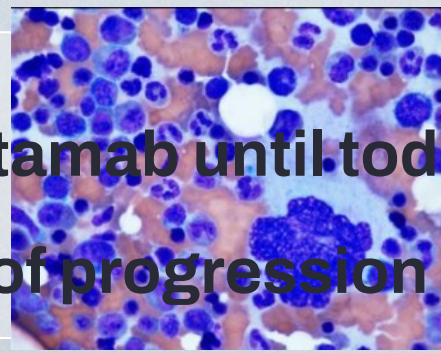




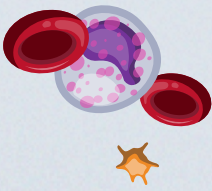


# Post treatment BM Biopsy

She continues treatment with Teclistamab until today  
and remain without clinical signs of progression



**IgG Kappa Myeloma Now in Remission**  
**Negative MRD**



# Take Home Messages

- Despite advances in therapies, treatment of relapsing MM remains a challenge
- Availability and access to new therapies could be a major challenge in many countries
- Novel therapies such as bispecific antibodies must be considered in heavily pretreated relapse or refractory MM

# Thank you!

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