**Patient:** Samuel Wilson (DOB 1963-03-03)  
**Medical Record Number:** 583617  
**Date of Admission:** 2025-03-18  
**Date of Discharge:** 2025-03-25  
**Admitting Physician:** Dr. K. Murray (Medical Oncology)  
**Consulting Physicians:** Dr. P. Gupta (Infectious Disease), Dr. V. Rodriguez (Gastroenterology)

**Discharge Diagnosis: Neutropenic Fever with Gram-Negative Bacteremia in a Patient with Metastatic Colorectal Adenocarcinoma**

**1. Detailed Oncological Diagnosis:**

Primary Diagnosis: Adenocarcinoma of the Sigmoid Colon with Liver and Peritoneal Metastases  
Date of Initial Diagnosis: October 2024

Histology:

* Colonoscopy biopsy (October 2024): Moderately differentiated adenocarcinoma of the sigmoid colon
* Liver biopsy (November 2024): Metastatic adenocarcinoma consistent with colorectal primary

Molecular/Genetic Profile:

* RAS status: KRAS mutation in codon 12 (G12D)
* BRAF status: Wild-type
* Microsatellite status: Microsatellite stable (MSS)
* HER2 status: Negative
* NGS panel: KRAS G12D, TP53 R175H, PIK3CA E545K mutations

Staging at Diagnosis:

* TNM (AJCC 8th): cT4aN2aM1c (Stage IVC)
* Primary tumor: 5.2 cm sigmoid mass with serosal involvement
* Regional lymph nodes: 4/15 positive lymph nodes
* Metastatic sites: Multiple bilobar liver metastases (largest 4.3 cm) and peritoneal implants

Imaging at Diagnosis:

* CT Chest/Abdomen/Pelvis (October 2024): Primary sigmoid mass with pericolic fat stranding, multiple bilobar liver metastases, peritoneal nodularity, no lung metastases
* MRI Liver (November 2024): Multiple liver metastases in segments II, IV, VI, VII, and VIII, largest measuring 4.3 cm
* PET/CT (November 2024): FDG-avid primary tumor (SUV 15.2), liver metastases (SUV 10.5-13.8), and peritoneal implants (SUV 6.8-9.2)

**2. Current Treatment:**

* Broad-spectrum antibiotics: Initially piperacillin-tazobactam, escalated to meropenem + azithromycin + vancomycin
* Filgrastim 5 mcg/kg SC daily for neutropenia
* Blood cultures and infectious workup
* Supportive care (IV fluids, antipyretics)

**3. History of Oncological Treatment:**

Surgical Management:

* No primary tumor resection (deemed unresectable due to extensive metastatic disease)
* Diverting loop colostomy (December 2024) for partial bowel obstruction

Previous Systemic Therapy:

* 5 cycles FOLFIRI + bevacizumab initiated December 2024
* Prior cycles (1-4) with following complications:
  + Cycle 3: Grade 2 diarrhea requiring irinotecan dose reduction (180 mg/m² to 150 mg/m²)
  + Cycle 4: Completed with reduced irinotecan dose, well-tolerated

Treatment Response:

* After 4 cycles (February 2025 assessment):
  + CT scan: Partial response with approximately 30% reduction in liver metastases and stable peritoneal disease
  + CEA decreased from 245 ng/mL to 86 ng/mL

**4. Comorbidities:**

* Type 2 Diabetes Mellitus (diagnosed 2015, HbA1c 7.4% prior to admission)
* Hypertension (diagnosed 2013, well-controlled on medication)
* Hyperlipidemia
* Gout (last flare 2023)
* Former smoker (30 pack-years, quit 2020)
* Colostomy (since December 2024)

**5. Physical Exam at Admission:**

General: 62-year-old male appearing fatigued and ill.

Vitals: BP 92/58 mmHg, HR 118 bpm, RR 22/min, Temp 39.2°C, SpO2 95% on room air.

HEENT: Dry mucous membranes. Mild oral mucositis (Grade 1).

Cardiovascular: Tachycardic with regular rhythm. No murmurs, rubs, or gallops.

Respiratory: Clear to auscultation bilaterally. No wheezes, rales, or rhonchi.

Abdomen: Soft, mildly distended. Diffuse tenderness, most prominent in RUQ and RLQ. Functioning colostomy in left lower quadrant with healthy-appearing stoma. Ostomy output liquid, moderate amount, no blood.

Hepatomegaly: Liver edge palpable 4 cm below costal margin, mildly tender.

Extremities: No edema. Reduced sensation to light touch in fingers and toes bilaterally (chronic neuropathy).

Skin: No rashes. Port-a-cath site on right chest wall without erythema or tenderness.

Neurological: Alert and oriented x3. No focal deficits.

ECOG Performance Status: 2 (Ambulatory >50% of waking hours, capable of self-care but unable to work).

**6. Hospital Course:**

Mr. Wilson presented on day 10 of cycle 5 of FOLFIRI+bevacizumab with fever (39.2°C), hypotension (92/58 mmHg), tachycardia, and fatigue of 24-hour duration. Laboratory evaluation revealed severe neutropenia (ANC 0.08 x 10^9/L), thrombocytopenia (platelets 58 x 10^9/L), and elevated inflammatory markers (CRP 198 mg/L). He was admitted with the diagnosis of febrile neutropenia and initiated on empiric broad-spectrum antibiotics (piperacillin-tazobactam) after two sets of blood cultures were obtained (one peripheral, one from port).

Initial fluid resuscitation (2L normal saline) was administered with improvement in blood pressure. Chest X-ray showed no infiltrates. CT abdomen/pelvis revealed stable metastatic disease without evidence of abscess or bowel perforation. However, moderate colitis was noted in the descending and sigmoid colon.

On hospital day 2, blood cultures from admission grew gram-negative rods, later identified as Escherichia coli (piperacillin-tazobactam and ciprofloxacin sensitive) from both peripheral and port cultures. Infectious Disease was consulted and recommended continuing piperacillin-tazobactam and a total antibiotic course of 14 days. The port-a-cath was evaluated and deemed safe to maintain given the same organism from peripheral blood and improving clinical status with appropriate antibiotics.

The patient remained febrile for 48 hours despite antibiotics, prompting a repeat CT chest to evaluate for pulmonary source. This revealed an atypical right lower lobe infiltrate, and antibiotic coverage was escalated to meropenem, azithromycin and vancomycin. Filgrastim (G-CSF) 5 mcg/kg SC daily was initiated on admission and continued throughout hospitalization.

The patient's neutrophil count began to recover on day 4 (ANC 0.54 x 10^9/L), with further improvement to 1.8 x 10^9/L by discharge. He became afebrile on hospital day 4 and remained afebrile for 48 hours prior to discharge. Repeat blood cultures on hospital day 3 and day 5 showed no growth.

Gastroenterology was consulted to evaluate for C. difficile infection given history of chemotherapy and antibiotics, but testing was negative. The colitis seen on imaging was attributed to a combination of chemotherapy effect and infection.

After multidisciplinary discussion, the decision was made to continue chemotherapy with a further 20% dose reduction of irinotecan and 5-FU and add prophylactic pegfilgrastim for future cycles. The final diagnosis was neutropenic fever with E. coli bacteremia, likely originating from bacterial translocation secondary to chemotherapy-induced colitis.

**7. Medication at Discharge:**

Antimicrobials:

* Ciprofloxacin 500 mg PO BID for 7 days (to complete 14-day total antibiotic course)

Chronic Medications:

* Metformin 500 mg PO BID
* Lisinopril 10 mg PO daily
* Atorvastatin 20 mg PO daily
* Allopurinol 100 mg PO daily

Supportive Medications:

* Loperamide 2 mg PO PRN after loose stool (maximum 8 tablets/day)
* Ondansetron 8 mg PO Q8H PRN nausea
* Acetaminophen 650 mg PO Q6H PRN pain/fever

**8. Follow-up Plan:**

Oncology Follow-up:

* Appointment with Dr. K. Murray in 1 week (April 1, 2025) for clinical assessment
* CBC with differential and comprehensive metabolic panel in 3 days
* Continue with FOLFIRI+bevacizumab (further 20% dose reduction) scheduled for April 8, 2025
* Pegfilgrastim to be administered 24h after completion of cytotoxic chemotherapy in all future cycles
* Consider reassessment of response after 8 cycles

Infectious Disease:

* Follow-up with Dr. P. Gupta in 2 weeks for monitoring of resolved infection
* Complete 14-day antibiotic course

Patient education

* Continue routine colostomy care. Monitor for changes in output
* Monitor signs/symptoms of recurrent infection (fever, chills, worsening abdominal pain, changes in ostomy output) and seek immediate medical attention
* Monitor side effects of Ciprofloxacin (e.g., tendonitis, C. diff risk, QTc prolongation potential though less likely monotherapy).
* Monitor the port site for subtle signs of infection (erythema, tenderness, warmth, discharge)
* Monitor for signs of bleeding (dizziness, blood in urine/stool etc.)

**9. Lab Values:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Parameter** | **Admission (3/18/2025)** | **Nadir/Peak** | **Discharge (3/25/2025)** | **Units** | **Reference Range** |
| WBC | 0.6 | 0.5 (3/19) | 3.2 | x10^9/L | 4.0-11.0 |
| ANC | 0.08 | 0.05 (3/19) | 1.8 | x10^9/L | 1.8-7.5 |
| Hemoglobin | 9.8 | 8.5 (3/20) | 9.2 | g/dL | 13.5-17.5 (M) |
| Platelets | 58 | 42 (3/20) | 86 | x10^9/L | 150-400 |
| Creatinine | 1.3 | 1.4 (3/19) | 1.0 | mg/dL | 0.7-1.3 |
| BUN | 28 | 32 (3/19) | 18 | mg/dL | 7-20 |
| AST | 48 | - | 42 | U/L | 10-40 |
| ALT | 52 | - | 45 | U/L | 7-56 |
| Total Bilirubin | 1.1 | - | 0.9 | mg/dL | 0.1-1.2 |
| Alkaline Phosphatase | 218 | - | 205 | U/L | 40-129 |
| Albumin | 3.0 | 2.8 (3/20) | 3.1 | g/dL | 3.5-5.0 |
| CRP | 198 | 245 (3/19) | 42 | mg/L | <10 |
| Procalcitonin | 3.8 | 4.2 (3/19) | 0.6 | ng/mL | <0.5 |
| Lactate | 2.8 | 3.2 (3/18) | 1.1 | mmol/L | 0.5-2.2 |
| Blood Culture | Positive E. coli | - | No growth | - | No growth |
| CEA | - | - | 82 | ng/mL | <5.0 |
| Glucose | 168 | 192 (3/19) | 145 | mg/dL | 70-99 |

Electronically Signed By:  
Dr. K. Murray, MD  
Medical Oncology  
Date/Time: 2025-03-25 16:45

Dr. P. Gupta, MD  
Infectious Disease  
Date/Time: 2025-03-25 15:30