

Case Study 2: Aarón—84-Year-Old Laborer

Patient History

- Aarón is a Colombian native who has come to the United States seeking treatment at a prestigious cancer center. Unfortunately, Aarón speaks little to no English, and his medical records are in the process of being translated for the medical team. As his previous records are not currently available, the oncologist has no choice but to work backward to try to determine the level of Aarón's colorectal cancer invasion and to suggest progressive treatment.

Previous Patient Treatment

- The only thing Aarón's physician knows is that Aarón's first-line treatment was systemic therapy with FOLFIRI ± cetuximab. A CT scan also showed that Aarón had a transverse colectomy.

Part One Guiding Questions:

- Because Aarón's first-line treatment was systemic therapy with FOLFIRI ± cetuximab, what stage of colorectal cancer did Aarón have at diagnosis?
- What could the TNM staging be based on his first-line treatment?
- Where was the location of Aarón's tumor?
- What is the likelihood of metastasis and what are the most common areas that may be affected?
- What types of initial symptoms would Aarón have experienced based on his tumor location?
- Would testing for *KRAS* or *EGFR* mutations be advantageous at Aarón's stage of the disease? If so, what type of methodology would be used to perform the testing?
- What is Aarón's 5-year survival rate based on his stage at diagnosis?
- What would be a possible treatment choice if Aarón's cancer progressed after initial systemic therapy?

Answers to Guiding Questions

- Staging at diagnosis: Since Aarón's first-line treatment was systemic therapy with FOLFIRI ± cetuximab, it is likely that he was in stage IV when he was diagnosed. Systemic treatment is often the first-line choice for metastatic colorectal cancer.
- Possible TNM staging: Any T, any N, M1
- Tumor location: Aarón's tumor was located in the transverse colon, the top portion of the colon that sags slightly in the middle beneath the stomach
- Metastasis: Aarón's cancer has definitely metastasized because of his stage IV status. Common areas for metastasis include regional lymph nodes, liver, and lungs.
- Symptoms: Based on the location of Aarón's tumor, he may have experienced dull, vague abdominal pains that radiated from the abdomen to the back; dark or mahogany-red blood in his stool; possible anemia; indigestion; and weight loss.
- Mutation testing: Testing for mutations would be very useful at this point because Aarón is already in stage IV of his disease. He should be tested for *KRAS*, *EGFR*, and may be tested for *BRAF*, although information for *BRAF* mutation relevance is still in its infantile stages. However, it is important to note that Aarón must have been *EGFR*- and *KRAS*-negative to be treated with cetuximab as first-line therapy, as those conditions are necessary for treatment with cetuximab. In terms of testing, PCR may be used to detect *KRAS* mutations, and IHC and FISH may be used to detect *EGFR*. DNA sequencing would also detect genetic mutations.
- Survival: Aarón's survival rate would vary depending on the extent of the disease—ie, if the metastasis was regional or distant. If he had regional metastasis, his prognosis would be better at 70%. However, if distant metastasis was present, his 5-year survival rate would decrease sharply to 12.5%.
- Treatment after progression: We know that Aarón was at stage IV when he was diagnosed and that he had to be *EGFR*- and *KRAS*-negative to be treated with cetuximab. If he progressed on therapy, he could be treated with FOLFOX ± bevacizumab or CapeOx ± bevacizumab, or cetuximab or panitumumab + irinotecan