***Management of Metastatic Colorectal Cancer: A Case Series of 20 Patients***

**Abstract**

Metastatic colorectal cancer (mCRC) represents a major public health challenge, characterized by high morbidity and mortality. This retrospective study, conducted at Ibn Rochd University Hospital in Casablanca from 2019 to 2023, analyzes the epidemiological, clinical, and therapeutic characteristics of 20 patients diagnosed with mCRC. The mean age was 56 years, with a male predominance. The liver was the most common metastatic site. Management relied on a multidisciplinary approach combining surgery, chemotherapy, and, in selected cases, radiotherapy. The FOLFOX regimen was the most frequently administered. The resectability rate of liver metastases was 40%. Median overall survival was 12.6 months. Recent advances, such as personalized medicine and liver transplantation, offer new opportunities for improving survival and quality of life in these patients..

Keywords : Metastatic colorectal cancer, therapeutic advancements, Colorectal Cancer, metastases

**Introduction**

Colorectal cancer ranks as the third most common cancer worldwide and the second leading cause of cancer-related mortality (1). In Morocco, it accounts for 8.7% of all cancer cases (2). Between 40% and 60% of patients develop metastases, primarily in the liver (3), which heavily impacts prognosis. Despite therapeutic advancements (4,5), mCRC remains associated with a poor prognosis, especially in low-resource settings. This study aims to share the experience of a Moroccan referral center in managing mCRC and to compare it with international recommendations (6).

**Materials and Methods**

This retrospective descriptive study was conducted from January 2019 to December 2023 at the Digestive Oncology and Liver Transplantation Surgery Department of Ibn Rochd University Hospital, Casablanca. Twenty patients with histologically confirmed mCRC—either colon or rectal cancers with synchronous or metachronous metastases—were included. Data collected included demographics, clinical and paraclinical findings, histology, treatment modalities (surgery, chemotherapy, radiotherapy), and outcomes (morbidity, mortality, survival). Continuous variables were expressed as means, categorical ones as percentages.

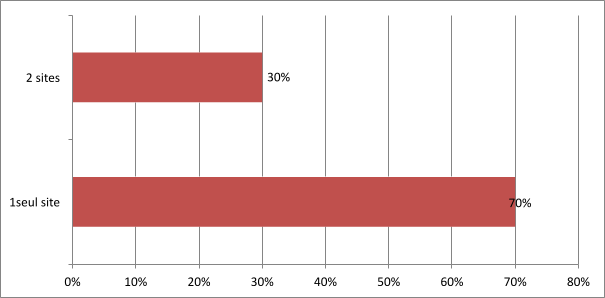
Results

The mean age of the cohort was 56 years, with a male predominance (male-to-female ratio of 1.85). The majority of patients (85%) originated from urban settings. The average time from symptom onset to first medical consultation was 9 months, with 85% of patients consulting after more than 6 months of symptoms, indicating a significant diagnostic delay.

Clinically, the most reported initial symptoms were abdominal pain, rectal bleeding, changes in bowel habits, and deterioration of general health. In some cases, patients also presented with hepatomegaly or symptoms related to liver failure.

Regarding metastatic spread, the liver was the most frequently involved organ, with 100% of patients showing liver metastases. Fourteen patients (70%) had isolated liver metastases, while 30% presented with additional metastatic sites: lungs (15%), peritoneum (10%), and lymph nodes (5%). Synchronous metastases were found in 85% of cases, while 15% had metachronous metastases diagnosed after primary tumor management.

Figure 1. Distribution of patients according to the number of metastatic sites



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| **Metastatic site** | **Number of cases** | **Percentage (%)** |
| **Liver** | 20 | 100 |
| **Isolated involvement** | 14 | 70 |
| **Associated involvement:** | 6 | 30 |
| Liver + lung | 3 | 15 |
| Liver + peritoneum | 2 | 10 |
| Liver + lymph nodes | 1 | 5 |

Table 1. Distribution by metastatic sites (n = 20)

Endoscopic confirmation of the primary tumor was achieved in all patients, and histology predominantly revealed moderately differentiated adenocarcinoma. Tumor markers, including carcinoembryonic antigen (CEA) and carbohydrate antigen 19-9 (CA 19-9), were elevated in 60% and 45% of cases, respectively.

Therapeutically, 95% of patients underwent resection of the primary tumor, with liver metastasectomy possible in 8 cases (40%). Chemotherapy was administered to all patients: FOLFOX4 was the regimen of choice, followed by XELOX, FOLFIRINOX, XELIRI, and FOLFIRI. Panitumumab was added in patients with favorable RAS profiles. Radiotherapy was used in 5 patients with rectal primaries.

Postoperative mortality was 10%, with causes including sepsis and liver failure. Morbidity, also at 10%, included wound infections and hepatic decompensation. Median overall survival was 12.6 months (range 2–36 months). At the last follow-up, 13 patients (65%) had died, 4 were receiving chemotherapy (20%), and 3 had progressive disease (15%)..

**Discussion**

This study confirms that mCRC is frequently diagnosed at an advanced stage in Morocco, echoing trends seen in other low- and middle-income countries. The long diagnostic delay observed in our cohort is a critical challenge and reflects the absence of national screening programs and limited public awareness. Early diagnosis remains pivotal in improving resectability and survival.

Our population presented characteristics consistent with global literature: male predominance and average age in the mid-50s. Liver metastases, due to portal venous drainage of the colon and rectum, were universal in our series (7). The predominance of synchronous metastases in 85% of patients is consistent with aggressive tumor biology and delayed presentation.

Histopathology revealed a predominance of moderately differentiated adenocarcinoma, which aligns with international trends. Tumor marker evaluation (CEA and CA 19-9) was useful for diagnosis and monitoring but remains insufficient alone for prognostic evaluation. Molecular profiling, though limited in our setting, is essential for therapeutic stratification. Access to RAS, BRAF, and MSI status testing should be expanded to guide use of anti-EGFR therapies and immunotherapy.

Surgical resection of the primary tumor, even in the metastatic setting, remains indicated for symptom control or when metastasectomy is feasible. Our 40% resection rate for liver metastases reflects both the feasibility in our institution and patient selection criteria. Advanced liver-directed therapies such as radiofrequency ablation or portal vein embolization, although beneficial, were not available.

Chemotherapy remains the backbone of treatment. FOLFOX-based regimens were favored due to efficacy and tolerability. The inclusion of panitumumab in select patients underscores the potential of personalized medicine even in resource-constrained contexts.

Immunotherapy, particularly for MSI-high tumors, has demonstrated remarkable responses in mCRC. The KEYNOTE-177 trial showed improved progression-free survival with pembrolizumab in first-line settings (8). Unfortunately, high costs and limited molecular diagnostics constrain its use locally.

Liver transplantation has emerged as a radical yet promising approach for patients with unresectable liver-only metastases. Dueland et al. and subsequent studies report 5-year survival rates surpassing 70% in selected patients (6,9). Ethical concerns and organ scarcity remain limiting factors.

In our cohort, the median survival of 12.6 months reflects the reality in low-resource settings. Major negative prognostic factors included multiple metastatic sites, poor ECOG performance status, lack of molecular-guided therapy, and limited access to innovative treatments. Strengthening early detection, investing in molecular pathology infrastructure, and adopting multidisciplinary models are urgent priorities (10).

**Conclusion**

Metastatic colorectal cancer continues to have a poor prognosis, particularly in low-resource environments. Improved survival depends on early detection, multidisciplinary care, access to molecular testing, and innovative strategies such as liver transplantation for unresectable cases. These developments warrant continuous updates to management guidelines to ensure optimal patient care.

Ethical Approval:

This study has been approved by the Research Ethics Committee of the Department of General Surgery at IBN ROCHD University Hospital, Casablanca, Morocco. The principles of the Helsinki Declaration were followed.

Disclaimer (Artificial Intelligence):

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

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