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# Occult Breast Cancer Metastasis Presenting as Acute Liver Failure

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## Abstract

- Isolated liver metastases from breast cancer is rare and only seen in 5-12% of breast cancer patients<sup>1</sup>.
- We report a rare case of metastatic triple-negative invasive ductal carcinoma presenting as isolated post-surgical acute liver failure in a patient previously in remission.
- Prior studies have demonstrated good prognosis in patients with isolated liver involvement if they have had prolonged disease-free interval, hormone positive cancer, and normal liver function<sup>2</sup>.
- Our patient presents a challenging case in which liver function and performance status were poor prior to diagnosis of metastasis. Helical CT also demonstrated a unique presentation of cirrhotic liver with vastly diffuse metastatic lesions, with no circumscribed mass seen.
- The findings of this case emphasize the unique presentations of metastatic breast cancer in patients who are in remission, necessitating a broader differential diagnosis at time of presentation.

## Case Description

- A 45 year-old-female with history of stage IA ER,PR,Her2 negative moderately differentiated ductal carcinoma of the right breast (s/p neoadjuvant chemotherapy, lumpectomy, and adjuvant therapy) presented with abdominal pain, abdominal distension, jaundice, and scleral icterus three weeks after laparoscopic cholecystectomy.
- Intraoperatively**, her liver appeared cirrhotic which prompted an intraoperative biopsy. This demonstrated fragments of benign liver cyst with granulomatous inflammation, attributed to a subcapsular sample.
- During a postoperative office visit**, total bilirubin was elevated (2.6 on admission, 10.6 on discharge).
- On presentation** she showed signs of acute liver failure and coagulopathy with a bilirubin of 11.2, INR 3.45, and AST/ALT 182 and 115 respectively. Clinically she continued to have increased abdominal pain and distension, jaundice, and scleral icterus.
- Causes of acute liver failure including post-surgical complications, viral, autoimmune, and granulomatous disease were excluded.
- During her hospital course** she continued to display worsening liver function with elevated AST/ALT, total bilirubin, alkaline phosphatase, and INR. Further evaluation with transjugular hepatic biopsy was done due to limited diagnostic value of biopsy from outside hospital. Immunohistochemical staining was positive for GATA-3 immunostain and CK-7 stain, **revealing adenocarcinoma consistent with primary breast carcinoma.**

## Clinical Images

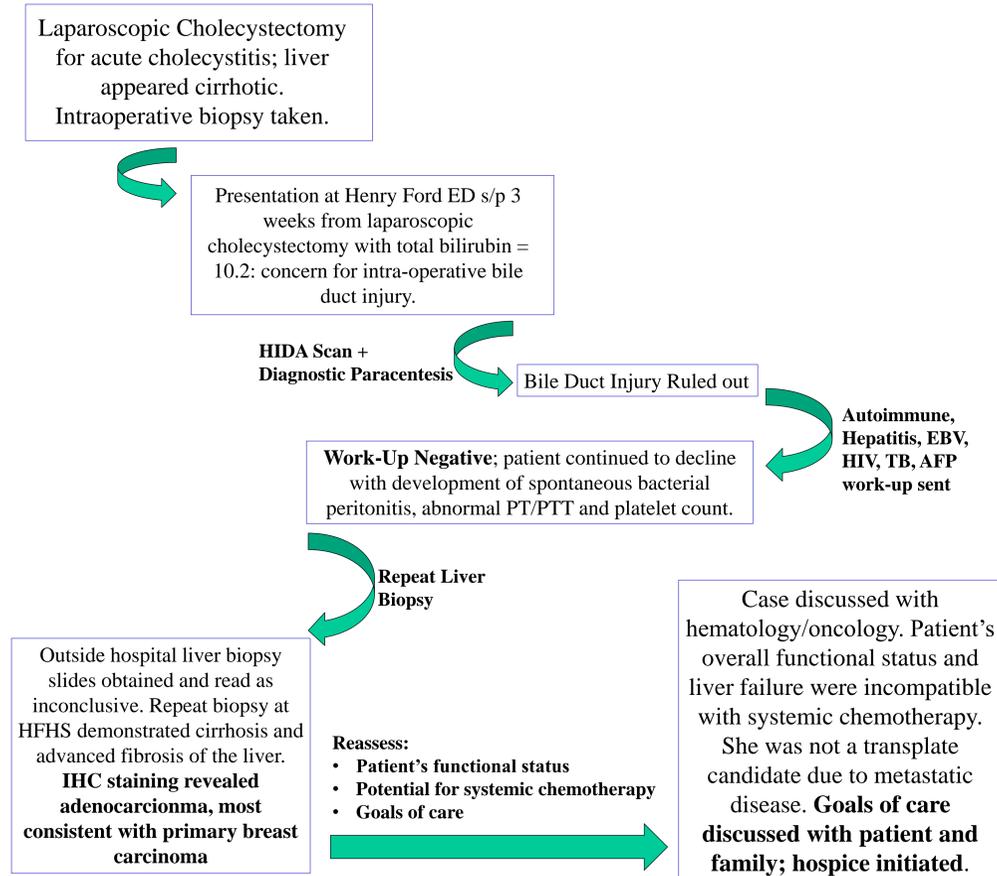


Figure 1. Hospital Course Flow Chart

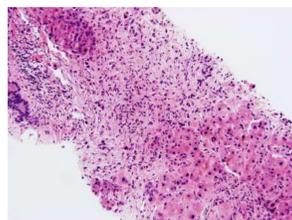


Figure 2. Pathology Slide demonstrating liver parenchyma infiltrated by tumor cells

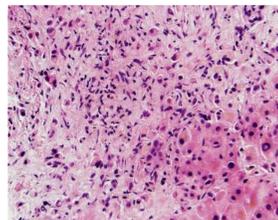


Figure 3. Tumors cells with eosinophilic cytoplasm and eccentrically placed hyperchromatic nuclei

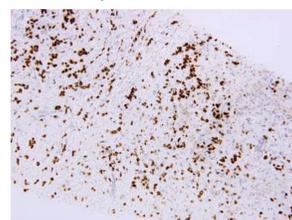


Figure 4. CK7 staining.

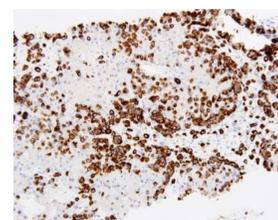


Figure 5. GATA 3 staining



Figure 6. CT Liver demonstrating diffuse changes without evidence of discrete mass

Tumor cells are positive for CK7 and GATA 3 supporting breast primary.

Biopsy Pathology Slide Images courtesy of Beena U Ahsan, MD, Henry Ford Hospital Department of Pathology

## Discussion

- Acute Liver Failure (ALF) is defined as sudden liver dysfunction manifesting as coagulopathy and any degree of encephalopathy in a patient without preexisting cirrhosis with illness lasting less than 26 weeks' duration<sup>1</sup>.
- As much as 20-40% of ALF is due to unclear causes<sup>4</sup>.
- In the case of breast cancer metastases, the liver is considered to among the common sites of metastasis, along with lungs and bone<sup>3</sup>. However, most metastases present in the form of a discrete mass<sup>3</sup>.
- In a large retrospective study, Rowbotham and associates analyzed 4,020 ALF cases over an 18-year period and attributed only 0.44% of these cases to malignant hepatic infiltration<sup>5</sup>.
- Our patient's breast cancer was grade 2 triple negative infiltrating ductal carcinoma, which was adequately treated with neoadjuvant chemotherapy, right partial mastectomy, right axillary sentinel node biopsy, and postoperative adjuvant radiation therapy.
- Diffuse liver metastasis is very rare and difficult to diagnose as they are not identifiable on routine radiographic diagnostic studies<sup>6</sup>. There are multiple case reports of occult metastatic breast cancer in the liver presenting with acute liver failure, in patients with a history of breast cancer<sup>3,4,7,8,9,10</sup>.
- In few reported cases, early diagnosis and treatment resulted in some improvement beyond the 18-24 months expected prognosis in metastatic breast cancer, but most cases were fatal within 2-9 months of diagnosis<sup>11</sup>.

## Conclusions

- Our patient presents a challenging case in which metastatic breast cancer presented with acute liver failure.
- Helical CT demonstrated severe cirrhosis with no distinct lesions concerning for metastasis, which led to a delay in diagnosis.
- Suspicion for malignant causes should remain high even in breast cancer patients who have completed treatment and have negative image-based screening for metastasis.
- The findings of this case support the importance of liver biopsy as a definitive diagnostic tool, as late discovery of metastasis results in a poor prognosis.

## References

- Hoe AL, Royle GT, Taylor I. Breast liver metastases--incidence, diagnosis and outcome. *J R Soc Med* 1991; 84:714
- Pagani O, Senkus E, Wood W, et al. International guidelines for management of metastatic breast cancer: can metastatic breast cancer be cured? *J Natl Cancer Inst* 2010; 102:456.
- Nazario HE1, Lepe R, Trotter JF. Metastatic breast cancer presenting as acute liver failure. *Gastroenterol Hepatol (N Y)*. 2011 Jan;7(1):65-6.
- Rakhtina Goswami, Michael Babich, and Katie F. Farah. Occult Breast Malignancy Masquerading as Acute Hepatic Failure. *Gastroenterol Hepatol (N Y)*. 2011 Jan; 7(1): 62-65.
- Rowbotham D, Wendon J, Williams R. Acute liver failure secondary to hepatic infiltration: a single centre experience of 18 cases. *Gut*. 1998 Apr; 42(4):576-80.
- Diamond JR, Finlayson CA, Borges VF. Hepatic complications of breast cancer. *Lancet Oncol*. 2009 Jun; 10(6):615-21.
- Sass DA, Clark K, Grzybicki D, Rabinovitz M, Shaw-Stiffel TA. Diffuse desmoplastic metastatic breast cancer simulating cirrhosis with severe portal hypertension: a case of "pseudocirrhosis". *Dig Dis Sci*. 2007 Mar; 52(3):749-52.
- Young ST, Paulson EK, Washington K, Gulliver DJ, Vredenburgh JJ, Baker ME (1994) CT of the liver in patients with metastatic breast carcinoma treated by chemotherapy: findings simulating cirrhosis. *AJR* 163:1385-1388
- Nascimento AB, Mitchell DG, Rubin R, Weaver E (2001) Diffuse desmoplastic breast carcinoma metastases to the liver simulating cirrhosis at MR imaging: report of two cases. *Radiology* 221:117-121
- Shirkhoda A, Baird S (1994) Morphologic changes of the liver following chemotherapy for metastatic breast carcinoma: CT findings. *Abdom Imaging* 19:39-42
- Bernardo S1, Carvalhana S2, Antunes T2, Ferreira P2, Cortez-Pinto H2, Velosa J2. A rare cause of acute liver failure- a case report. *BMC Gastroenterol*. 2017 Dec 20;17(1):166.