

# Pseudocirrhosis in Metastatic Breast Cancer

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An 82 year old woman with hepatic metastases from breast cancer was referred to the liver clinic at our hospital by her oncologist pursuant to findings at a follow-up imaging that were suggestive of liver cirrhosis. In November 2009 the patient had undergone a partial mastectomy. She received hormonal therapy with exemestane, an aromatase inhibitor, to treat her breast cancer. In September 2014, widespread liver and bone metastases were diagnosed using computed tomography (CT). The initial CT scan showed multiple metastatic nodules scattered throughout the liver [Figure 1A]. A follow-up CT scan performed 3 months later [Figure 1B] showed that the metastatic nodule had coalesced and become less conspicuous. Liver size and surface contour were normal. Eight months later (11 months after the initial scan) a subsequent CT scan [Figure 1C] showed overall liver volume loss, caudate lobe hypertrophy, irregular and lobulated liver contour and capsule

retraction, all compatible with liver cirrhosis. Nine months later (20 months after the initial scan), at the last follow-up, a magnetic resonance imaging (MRI) scan [Figure 1D] showed more prominent liver contraction accompanied by perihepatic ascites. Laboratory tests ruled out autoimmune hepatitis as well as viral hepatitis B and C.

Pseudocirrhosis refers to morphological changes in the liver following chemotherapy and hormonal therapy for hepatic metastatic disease that mimic macronodular cirrhosis radiologically. This known condition was described more than 20 years ago [1]. The most frequently reported cause of pseudocirrhosis is chemotherapeutically treated hepatic metastases from breast cancer [1]; however, such changes have also been reported in cases of treated hepatic metastases from a variety of cancers, including pancreatic, thyroid and gastrointestinal [1,2]. The mechanism of chemotherapy-associated pseudocirrhosis has not yet been elucidated. It could be due to tumor shrinkage with subsequent severe desmoplastic fibrosis around the liver metastases, resembling macronodular cirrhosis. Alternatively, nodular regenerative hyperplasia in response to chemotherapy-induced hepatic injury

has been proposed as the mechanism of pseudocirrhosis [1,2]. Liver biopsy was not performed due to the general poor health condition of the patient.

Patients with pseudocirrhosis can develop features of portal hypertension such as ascites, hepatic encephalopathy and variceal bleeding, which can lead to a life threatening condition; thus, these patients should be monitored carefully for progression of hepatic failure. Radiologists and clinicians should be aware of this situation because in these patients anti-cancer therapy should be modified and sometimes interrupted.

## Correspondence

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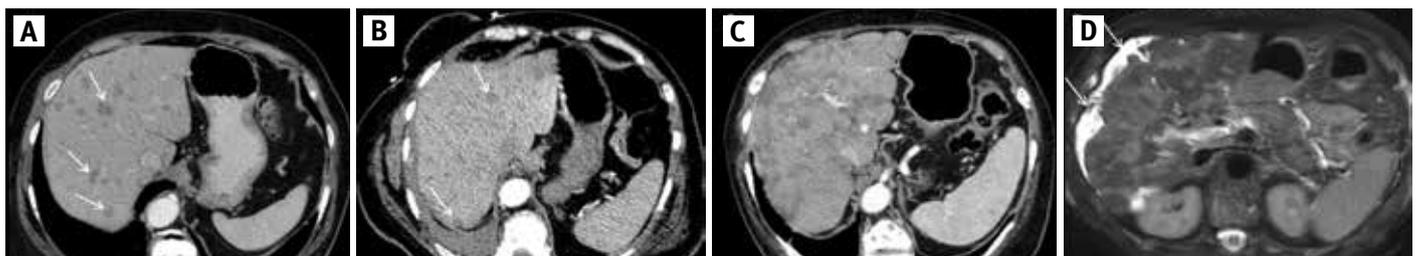
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**Figure 1.** [A] An initial CT scan shows multiple metastatic nodules (arrows) scattered throughout the liver. [B] Three months later, a follow-up CT scan shows that metastatic nodules are coalesced and less conspicuous (arrows). Liver size and surface contour are normal. [C] Eight months later, a subsequent CT scan shows overall liver volume loss, caudate lobe hypertrophy (asterisk), irregular and lobulated liver contour and capsule retraction, all compatible with liver cirrhosis. [D] Nine months later, a follow-up MRI scan shows more prominent liver contraction accompanied by perihepatic ascites (arrows)



CT = computed tomography, MRI = magnetic resonance imaging