

**BACKGROUND**

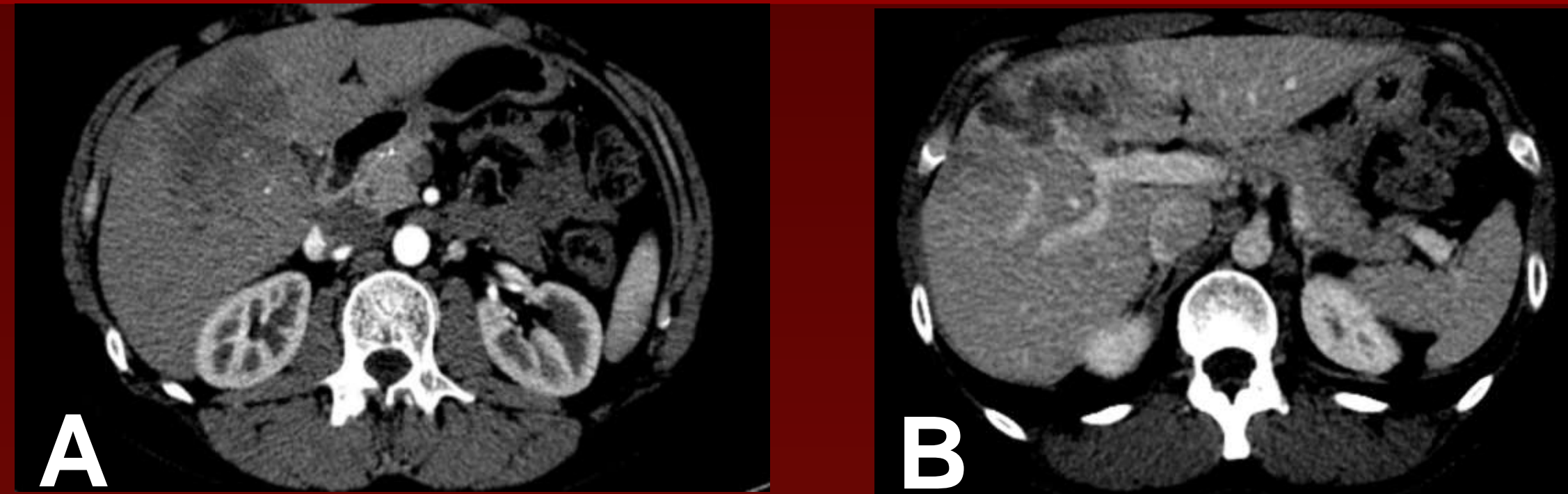
Yttrium-90 (Y-90) radioembolization is widely utilized in hepatocellular carcinoma but remains underutilized for metastatic disease. Retrospective studies have reported favorable toxicity profiles and improved patient outcomes in Y-90 radioembolization compared to chemoradiotherapy [1,2,3]. Here we present our institutional experience of treating patients with breast cancer metastases to the liver with this therapy.

**CASES**

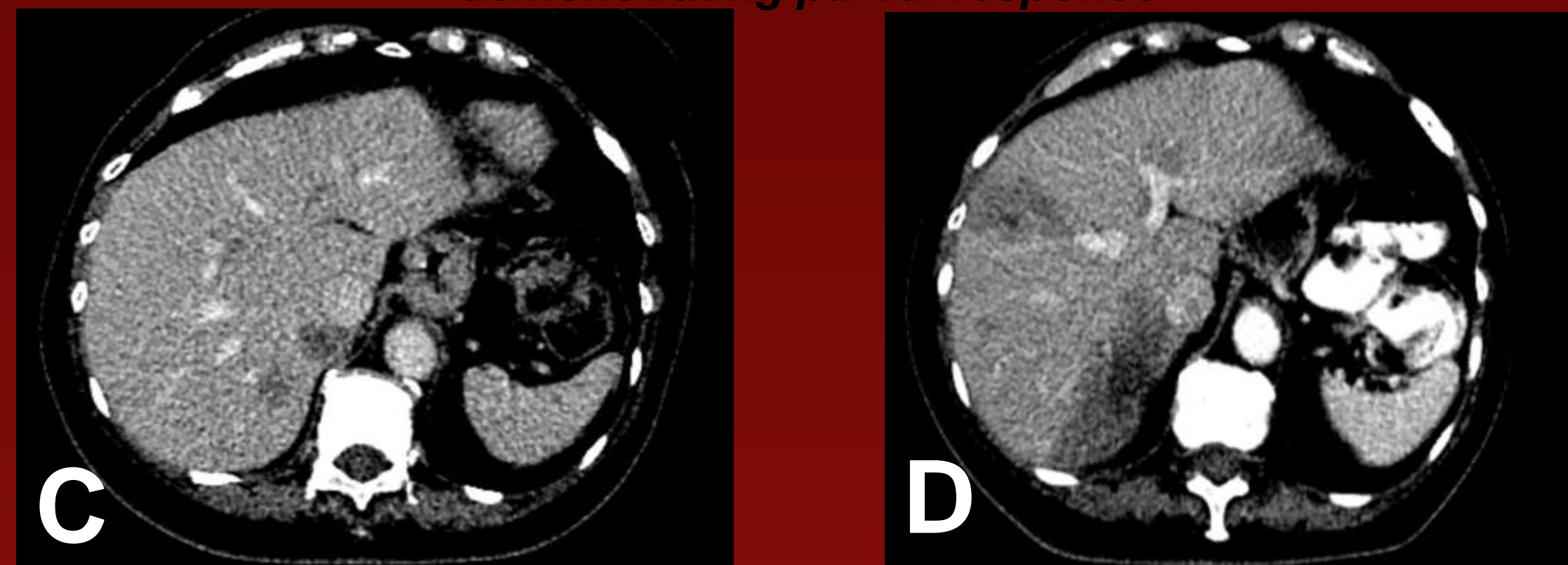
**Patient 1:** A 37-year-old female with ER/PR positive (+) HER2 negative (-) invasive ductal carcinoma (IDC) with metastases to axillary lymph nodes, bones, and liver after 9 prior systemic therapies. She had multiple liver lesions with 17.5% of liver involvement (Figure 1). She underwent 3 separate Y-90 radioembolization procedures of the right hepatic artery, segment IV of the left hepatic artery, and the posterior division of the right hepatic artery. The patient achieved partial response (PR) with no adverse events (AEs).

**Patient 2:** A 72-year-old female with ER+ PR and HER2- IDC with metastases to the axillary lymph nodes, bones, and liver with 10 prior systemic therapies. She had multiple liver lesions with 2.5% of liver involvement (Figure 2). She underwent separate 2 Y-90 radioembolization procedures of the left and right hepatic artery. The patient initially achieved stable disease, but later developed liver function test (LFT) elevation with disease progression.

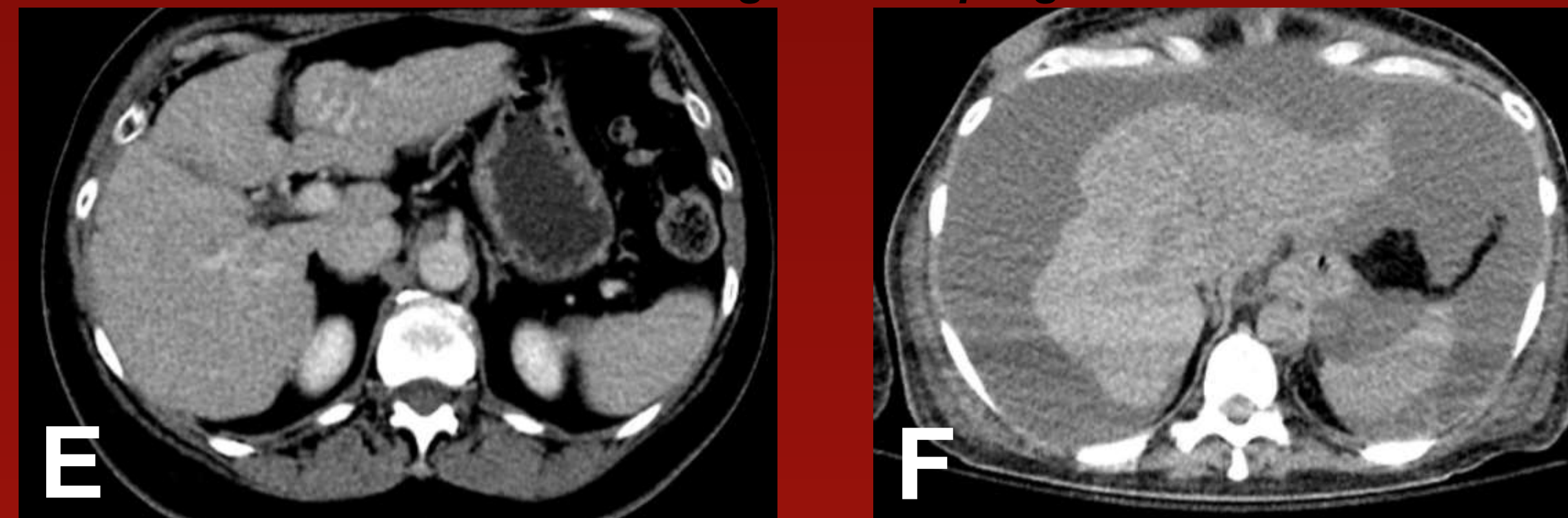
**IMAGING**



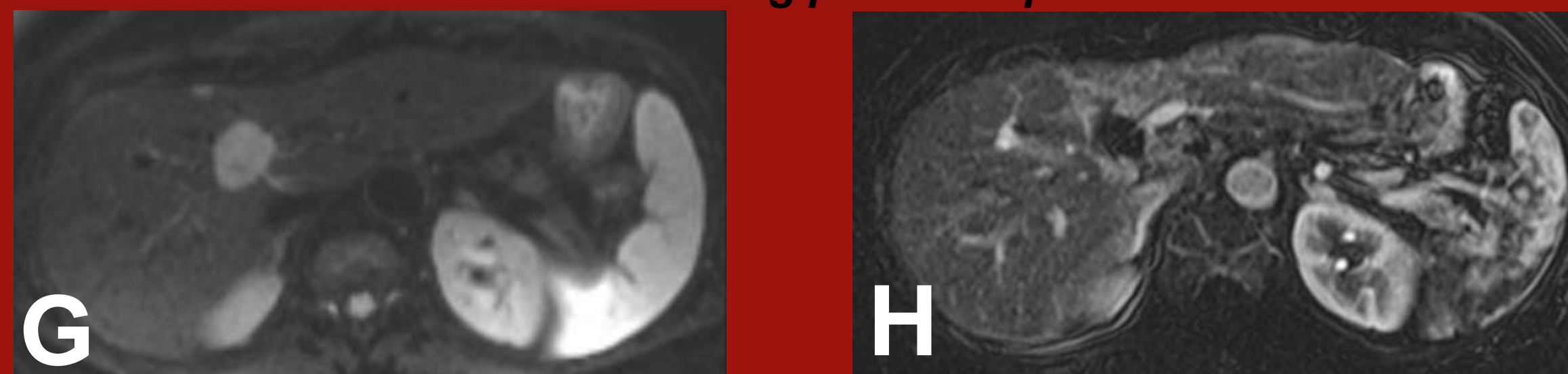
**Figures A & B. Patient 1: pretreatment (A) and posttreatment (B) CT scan, coronal view demonstrating partial response**



**Figures C & D. Patient 2: pretreatment (C) and posttreatment (D) CT scan, coronal view demonstrating disease progression**



**Figures E & F. Patient 3: pretreatment (E) and posttreatment (F) CT scan, coronal view demonstrating partial response**



**Figures E & F. Patient 3: pretreatment (E) and posttreatment (F) CT scan, coronal view demonstrating partial response**

**CASES**

**Patient 3:** A 62-year-old female with ER/PR + HER2 – IDC with metastasis to the axillary lymph nodes, liver, and bones with 9 prior systemic therapies. She underwent one Y-90 radioembolization procedure of the right hepatic artery. The patient achieved PR with no AEs.

**Patient 4:** A 70-year-old female with ER/PR + Her2 – IDC with metastases to the mediastinal lymph nodes, bones, and liver, with 11 prior systemic therapies. She had 3 right periportal liver lesions with 16.3% of liver involvement. She underwent one Y-90 radioembolization procedure of the superior branch of segment IV of the left hepatic artery. Patient achieved PR with no AEs.

**CONCLUSION**

Our institutional experience supports a growing body of literature demonstrating the safety of Y-90 radioembolization for the treatment of metastatic breast cancer to the liver.

**REFERENCES**

1. Pan H-Y, Wu T-Y, Chen H-Y, et al. Intracardiac cement embolism. *Circulation: Cardiovascular Imaging*. Published April 8, 2021.
2. Fadili Hassani S, Cormier E, Shotar E, et al. Intracardiac cement embolism during percutaneous vertebroplasty: incidence, risk factors and clinical management. *Eur Radiol*. 2019;29(2):663-673.
3. Liang TZ, Zhu HP, Gao B, et al. Intracardiac, pulmonary cement embolism in a 67-year-old female after cement-augmented pedicle screw instrumentation: A case report and review of literature. *World J Clin Cases* 2021; 9(13): 3120-3129