

# Preparatory Arteriography for Isolation of the Hepatic Arterial Bed Prior to Radioembolization Therapy Supported by *syngo* DynaPBV Body

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## Patient history

A 46-year-old male presented with chronic upper abdominal pain and jaundice. Subsequent CT examination revealed a large pancreatic mass with additional lesion (partially necrotic) in the liver showing similar contrast enhancement pattern.

## Diagnosis

Patient was diagnosed with liver metastasis from pancreatic cancer not eligible for surgical resection, and did not respond to chemotherapy. A radioembolization (RE) therapy was planned.

## Treatment

During the preparatory arteriography for RE, C-arm CT images with perfusion study were both obtained before and right after the embolization of the gastroduodenal artery (GDA) (see fig. 1a, b and 2a, b). This study is routinely performed in every patient who is a candidate for RE therapy and aims to prevent non-target Yttrium90 (Y90) embolization in case of reflux during

actual RE session. Potential extrahepatic shunts (to the esophagus, stomach or intestine) from the hepatic arterial bed are to be micro-catheterized and occluded (mostly with microcoils) and pulmonary shunt is to be measured with subsequent infusion of technetium tagged macroalbumin aggregate, which simply mimics the behavior of actual Y90 infusion. In this particular patient, the GDA was embolized with microcoils not because of feeding the liver metastasis but only for preventing reflux during actual Y90 infusion, which successfully took place within ten days after this preparatory session. This type of side branch embolization prior to RE therapy is considered to be mandatory, however, eventually leading to increased tumor perfusion caused by redistribution of the hepatic arterial blood flow/volume. A significant perfusion increase can be appreciated in both color perfusion maps and in qualitative measurements representing real-time documentation of blood flow redistribu-

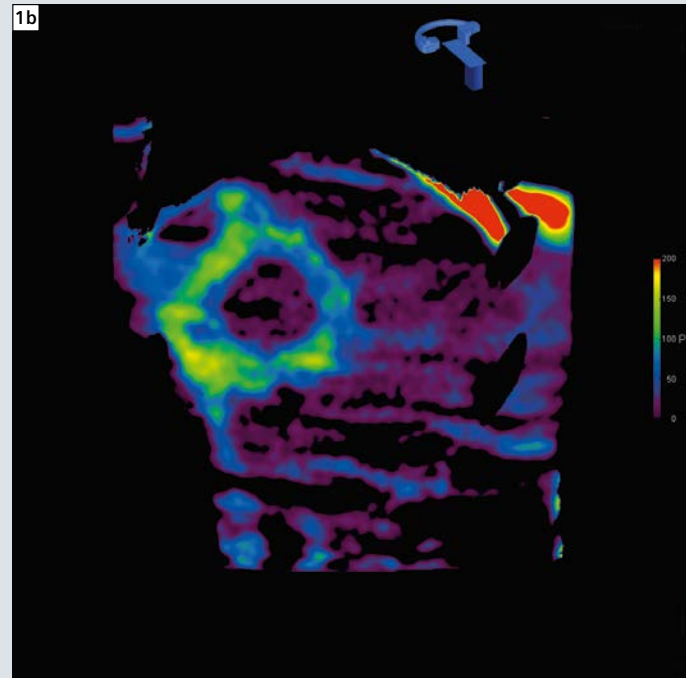
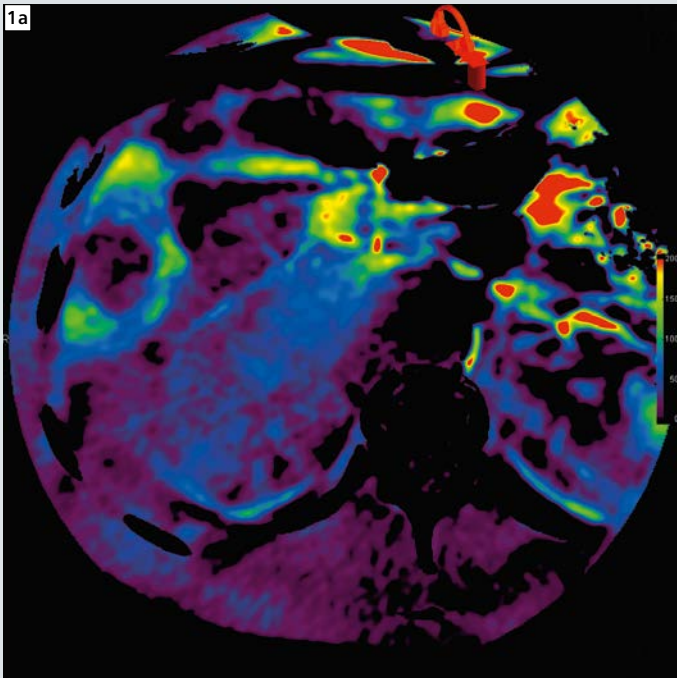
tion. For the first time in the angio lab, this unwanted increase in tumor perfusion due to occlusion of the GDA could be shown through *syngo* DynaPBV Body blood volume maps.

## Comments

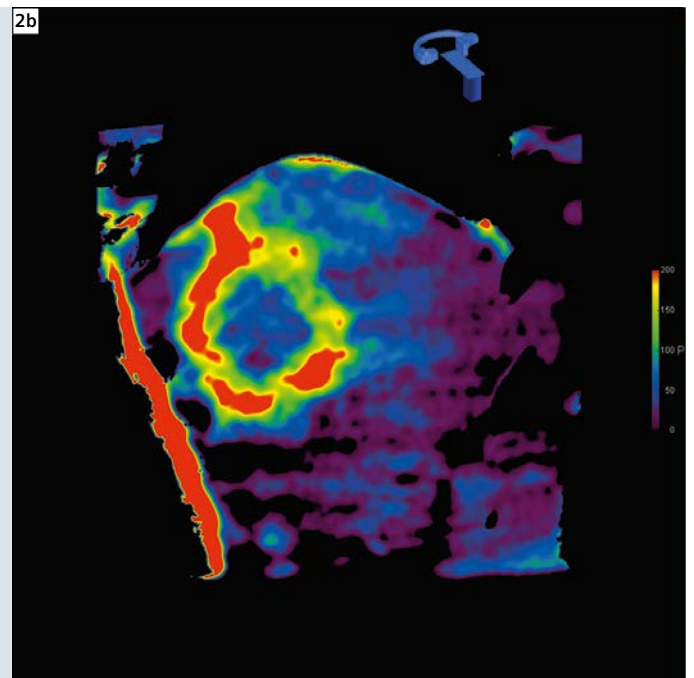
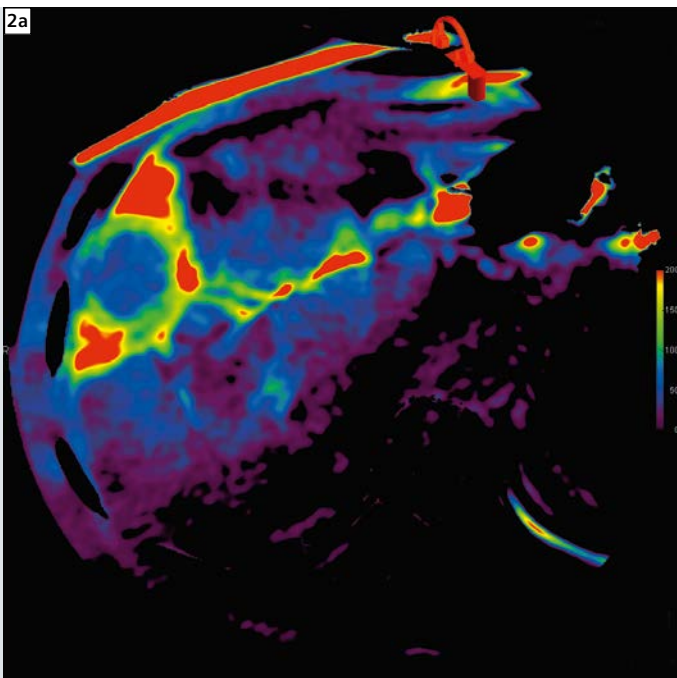
As the *syngo* DynaPBV Body documents the significant real-time increase in the tumor perfusion (see fig. 2a, b), interventionalists, oncologists, and nuclear physicians are well advised to keep the waiting period between the preparatory arteriogram and actual treatment session as short as possible particularly if the GDA is to be embolized. Although further studies with more patients are warranted, any physician aware of this fact would take the appropriate measures immediately.

## Contact

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**1** [a+b] syngo DynaPBV Body images obtained before the embolization of the GDA – [a] axial, [b] sagittal view.



**2** [a+b] syngo DynaPBV Body images obtained right after the embolization of GDA with microcoils show a significant increase in tumor perfusion caused by redistribution of the hepatic arterial blood flow/volume – [a] axial, [b] sagittal view.