

Oncologic experience with hepatic arterial interventions using *syngo* DynaCT

Seeing more, seeing better – AXIOM Artis *dTA* in practice

Courtesy of M. J. Wallace, MD; R. Murthy, MD; P. P. Kamat, MD; S. Gupta, MD; K. Ahrar, MD; M. E. Hicks, MD and others

Within the framework of hepatic artery interventions, Michael Wallace and his colleagues at the M. D. Anderson Cancer Center in Houston, Texas, evaluated the advantages of *syngo* DynaCT with a Siemens AXIOM Artis *dTA*. The following is an abstract of their conclusions. The abstract was presented at RSNA 2006.

Purpose

To evaluate *syngo* DynaCT soft tissue imaging in the angiography suite and to assess the impact on hepatic arterial interventions (HI) in patients with hepatic malignancy.

Method and materials

The medical and imaging records of patients who underwent HI as part of the work-up and treatment of hepatic malignancy from 5/2/05 to 3/23/06 were reviewed. Interventions included infusion (HAI), radioembolization (HARE), embolization (HAE), and chemoembolization (HACE); and *syngo* DynaCT imaging in the angiography suite was obtained [Siemens AXIOM Artis *dTA* with

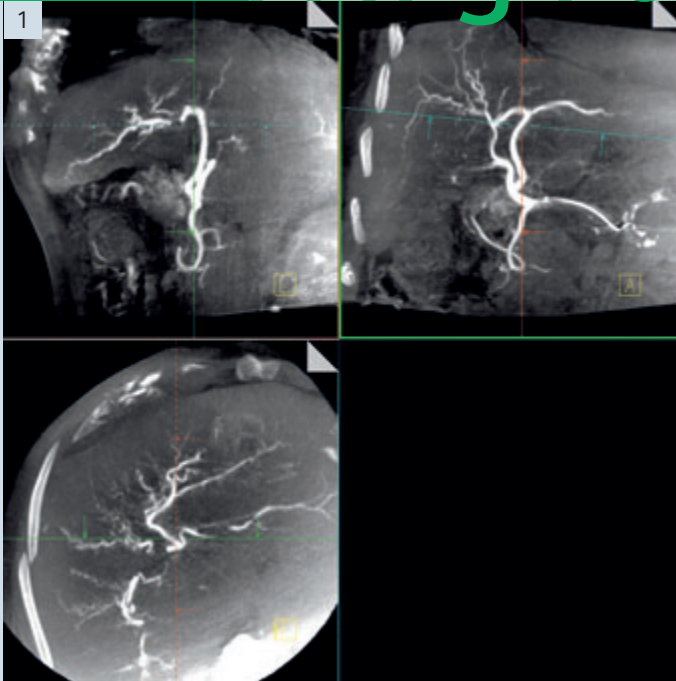
syngo DynaCT software (VB22)] as an adjunct to conventional DSA. The number of *syngo* DynaCT runs per HI was recorded and the assessment of added value was tabulated according to one of the following three criteria:

1. No additional information
2. Information without management impact
3. Information with management impact.

The interval between the initial and the last angiographic run was recorded for all HI and a two-tailed t-test was used to compare HI with and without *syngo* DynaCT.

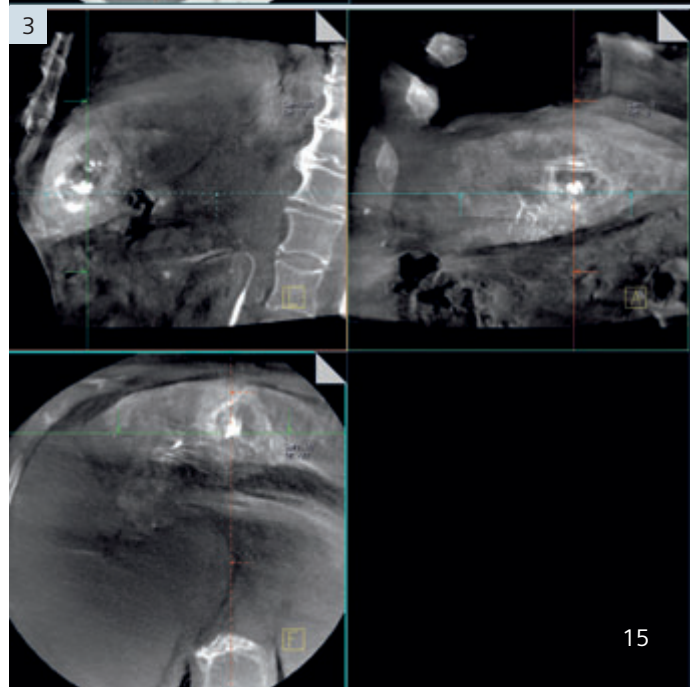
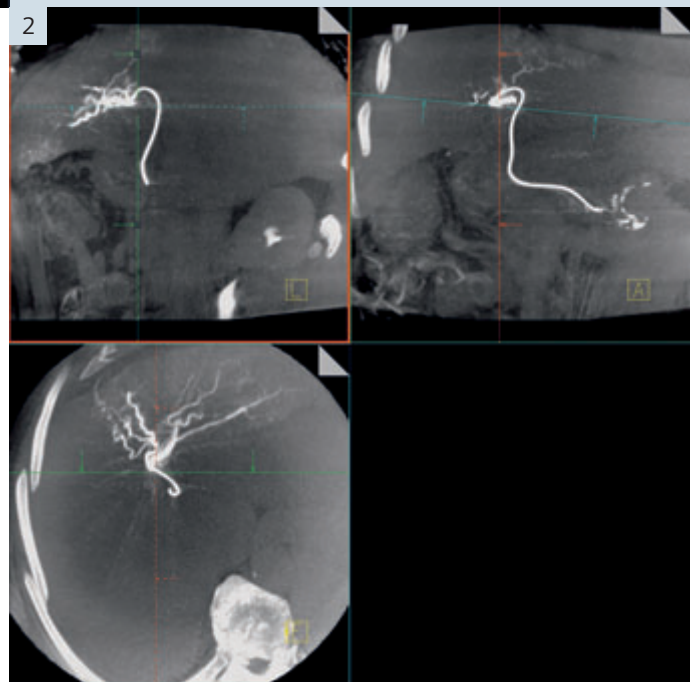
Results

syngo DynaCT was used in 86/240 (36%) of HI on 135 patients, which included 12/72 (16.7%) HAI, 16/38 (42.1%) HARE, 11/36 (30.6%) HAE, and 47/94 (50%) HACE procedures. The mean number of *syngo* DynaCT acquisitions per exam was 1.9 (range 1.1–2.2). Based on criteria 2 and 3, additional information was demonstrated in 51/86 (59.3%) overall and in 5/12 (41.6%) HAI, 5/16 (31.2%) HARE, 6/11 (54.5%) HAE, and



[1] syngo DynaCT provides a detailed hepatic vascular anatomic survey and creates a roadmap to achieve subselective catheterization and chemoembolization. syngo DynaCT can also be used to further characterize indeterminate vessels incompletely visualized on DSA.

[2] Vascular/parenchymal assessment before hepatic artery chemoembolization: syngo DynaCT enables the identification of occult lesions and corresponding arterial supplies, allowing selective catheterization or therapy. Consequently, pre-therapeutic arterial-parenchymal information can be evaluated in correspondence with the planned target volume. Moreover, the subsequent therapy is assessed. (Here: entire lesion fed by anticipated arterial supply).



35/47 (74.5%) HACE interventions. Based on criterion 3 alone, incremental information impacted management in 16/86 (18.6%) overall and in 4/12 (33.3%) HAI, 2/16 (12.5%) HRE, 1/11 (9.0%) HAE, and 9/47 (19.2%) HACE interventions. The mean procedure time with syngo DynaCT was significantly longer for HAE (16 min; $p = .025$) and for HACE (19 min; $p = .003$) but was not significantly different for HAI and HARE.

Conclusion

syngo DynaCT provides added information in more than 50% and impacts management in 19% of HI. With the syngo DynaCT software version used for this study there is a potential for a significant increase in procedure times especially when more than one run per HI is obtained.

Clinical Relevance/Application

syngo DynaCT produces CT-like images during hepatic artery interventions to provide additional imaging information beyond DSA to aid in performing these complex procedures.

Reference:
Wallace MJ, Murthy R, Karnat PP, Gupta S, Ahrar K, Hicks ME, et al. C-arm CT: oncologic experience with hepatic arterial interventions (abstr). In: Radiological Society of North America scientific assembly and annual meeting program. Oak Brook, Ill: Radiological Society of North America, 2006; 249.

[3] Post hepatic artery chemoembolization: syngo DynaCT enables the validation of the ethiodol accumulation throughout the entire target lesion. This way the homogeneity of the uptake can easily be assessed.

For more detailed information,
send your questions to:
esther.rohm@siemens.com