10.1 MSU: The Concept of a Mobile Stroke Unit (Fig. 10.1)

10.1.1 MSU: A Mobile Stroke Unit Facilitates Stroke Treatment

The concept of a mobile CT scanner was first introduced by Klaus Fassbender, currently at Saarland University, Germany, and described in “Stroke” in 2003 (Fassbender et al. 2003, Fig. 10.2).

The following pages will explain this novel concept of a “Mobile Stroke Unit” (MSU), a “stroke-ambulance” for pre-hospital stroke treatment that provides all diagnostic tools needed for therapeutic decision taking and treatment directly at the site of the emergency.
10.1.2 Rationale

Recanalization of occluded arteries by systemic thrombolysis with recombinant tissue plasminogen activator (rtPA) within 3 hours after onset of ischemic stroke significantly reduces disability and death (The National Institute of Neurological Disorders and Stroke rtPA Stroke Study Group 1995; Adams et al. 2007; European Stroke Organization (ESO) Executive Committee 2008).

Although the time window for i.v. rtPA has now been extended up to 4.5 hours, based on the results of the ECASS III study (Hacke et al. 2008), there is still much that can be done and should be done to salvage the ischemic penumbra and improve the clinical outcome. Despite the potential for thrombolytic therapy to improve the outcomes of patients after ischemic stroke, only 15–40% arrive at the hospital early enough to be eligible for treatment (Katzan et al. 2004; Lichtman et al. 2009; Sandercock et al.)