Subdural (SDE) and epidural empyema (EDE) are life-threatening intracranial infections. They require immediate diagnosis and treatment. However, in some cases, magnetic resonance imaging (MRI) is not able to contribute to diagnosis; therefore, surgical exploration is indicated. Hollow screws used for decompression of chronic subdural haematoma (cSDH) are valuable tools for minimally invasive biopsy in awake patients when SDE and EDE are suspected. Between 2006 and 2010, eight patients in our department underwent biopsy of a suspected SDE or EDE using hollow screws. In these cases, MRI or computed tomography (CT) were not able to provide sufficient diagnostic security to indicate primary craniotomy. Diagnostic and therapeutic efficacy was evaluated on preoperative and postoperative imaging. The focus was on qualitative parameters, such as contrast enhancement or impaired diffusion on diffusion-weighted images (DWI). The application of the hollow screw under local anaesthesia permitted an exact diagnosis in all cases. In one case, the suspected diagnosis of cSDH could be refuted by diagnostic puncture. In four cases of uncertain diagnosis, the application of the hollow screw revealed a cSDH. Seven of eight patients previously received neurosurgical treatment; three of those cases were SDE or EDE and four were cSDH. Cases of SDE and EDE needed further craniotomy after diagnostic puncture,
whereas patients with cSDH were sufficiently treated by hollow screws. Given their comparably wide diameter, hollow screws allow a sufficient sample size and, therefore, lead to precise diagnosis of SDE and EDE without significant operative risks or strains for the patient.