“Surgical management of complex multiloculated hydrocephalus in infants and children.” *Child’s Nervous System*, February 2015, volume 31, issue 2, pp. 243–249

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Dear Editor,

We read with great interest the recent article “Surgical management of complex multiloculated hydrocephalus in infants and children” by Akbari et al. [1], concerning the open and endoscopic fenestration of complex cysts in multiloculated hydrocephalus.

The authors conducted a retrospective study by querying their operative database and identifying 25 subjects, 12 of which initially underwent open fenestration and 13 underwent endoscopic fenestration. This retrospective cohort study concluded that endoscopic fenestration may represent the preferred initial treatment for many of these cases, primarily due to lower surgical morbidity, and suggested that open fenestration may be best reserved for more severe cases or those that have failed prior endoscopic surgery [1].

Surgical fenestration of complex cysts and septations in multiloculated hydrocephalus, either by craniotomy or endoscopic means, has been used with the intent to simplify shunt systems and reduce the number of shunt catheters or subsequent repeated procedures such as shunt revisions [2, 3]. Treatment of multiloculated hydrocephalus may prove to be quite challenging. The options described by the authors are the main most useful treatment alternatives, in order to minimize the number of repeat fenestrations and maximize the latency to subsequent shunt revisions.

A useful adjunct to the armamentarium of the neurosurgeon in complex cases is the combination of image guidance,

intraoperative imaging and endoscopy. The rationale is that in cases where multiple fenestrations are required and no anatomical landmarks are visible to navigate clinically, the preoperative dataset accuracy of image guidance drops significantly after the first fenestration, due to brain shift and a change in the intraoperative situs, as CSF fluid dynamics change. The combination of these techniques has been described by several groups with various intraoperative MRI systems [4–6]. Obviously, the equipment can be quite expensive and is not available in every setup. However, it can prove to be a feasible and effective technique, which may complement standard endoscopic fenestrations in complex cases and should therefore be considered.

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