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Letters

Meningeal Fibrosis Appearing Shortly After Ventricular Shunting

Destian et al. [1] recently reported the CT and MR findings of meningeal fibrosis as a distinct sequela of chronic ventricular shunting. They stated that they were unable to determine when the fibrosis developed or over what period of time because their patients did not have interval CT or MR studies. We recently encountered a case in which the changes occurred over a span of 6 weeks.

An 11-year-old boy was admitted with signs and symptoms of acute hydrocephalus. MR images were obtained at 0.35 T with T1-weighted (SE 700/30/2), intermediate (SE 2000/30/1), and T2-weighted (SE 2000/75/1) sequences (Fig. 1A). That day, the patient had placement of an intraventricular shunt. Six weeks later, a follow-up study was performed in which IV gadolinium-enhanced T1-weighted images were obtained in addition to the previous sequences (Figs. 1B–1E).

Although we do not have surgical proof, our images fulfill the criteria described by Destian et al. and suggest that meningeal fibrosis may occur as early as 6 weeks after placement of a shunt.

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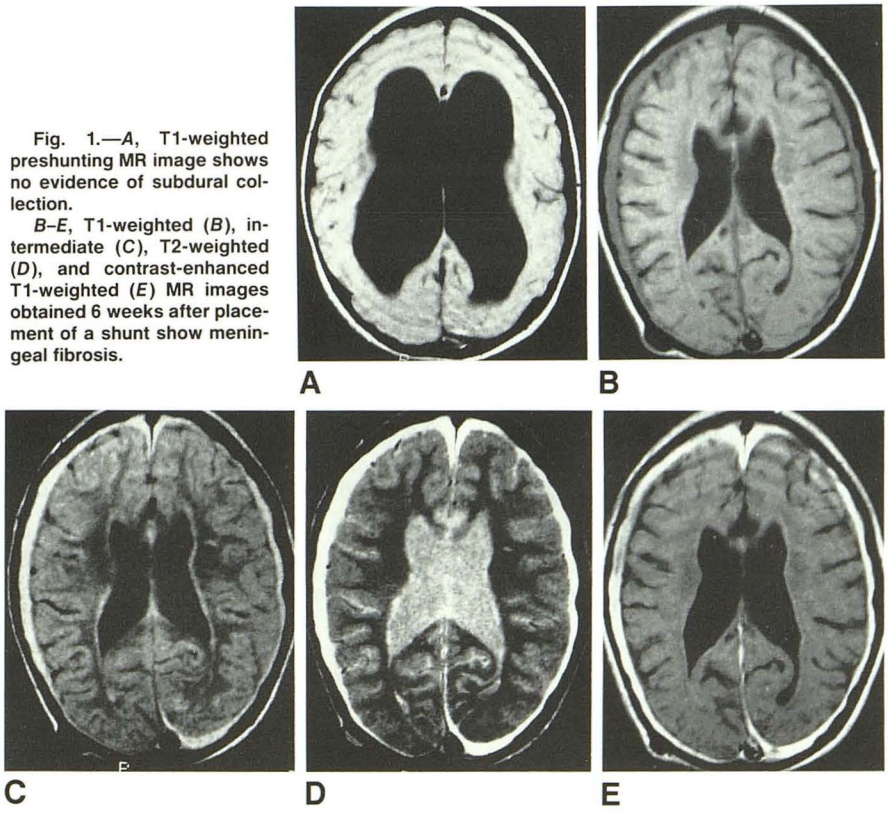

Fig. 1.—*A*, T1-weighted preshunting MR image shows no evidence of subdural collection.

***B–E*, T1-weighted (*B*), intermediate (*C*), T2-weighted (*D*), and contrast-enhanced T1-weighted (*E*) MR images obtained 6 weeks after placement of a shunt show meningeal fibrosis.**

Reply

In reply to the letter from Drs. Martin, Awwad, and Pittman, we can only agree with their conclusion that meningeal fibrosis may occur as early as 6 weeks after a shunt. Alternatively, this subdural enhancement may be due to the neovascularity found in the formation of a membrane that occurs in a subdural hematoma before the permanent meningeal fibrosis develops. Since our initial observations, we have seen subdural enhancement develop 5 days after shunting, and biopsy of the membrane on day 6 showed "organizing hemorrhage with abundant granulation tissue" [1]. Although we do not yet have long-term follow-up on this particular case, we have seen other cases of postshunt subdural enhancement that have resolved. Presumably, evolution of subdural hematoma is a spectrum of changes, with enhancement initially being reversible and representative of granulation tissue. A follow-up examination in the case of Martin et al. would be interesting to see if the subdural enhancement has resolved consistent with granulation tissue, or if permanent meningeal fibrosis has developed.

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