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Dear Editor:

I congratulate Mr. Krupnick and colleagues on their accurate evaluation of the degree of splenic injury by both CT and US in pediatric trauma victims.¹ The message that initial negative ultrasound examination in children with blunt abdominal trauma does not exclude the presence of abdominal organ lesions has to be emphasized. Ultrasound examination is very sensitive in detecting even a small amount of free intraabdominal fluid. Interestingly, not all patients with splenic or hepatic injury have free intraabdominal fluid. Furthermore, ultrasound examination is not able to distinguish clotted blood from splenic parenchyma. Certainly, contrast enhanced CT scan is superior to ultrasound in this issue. In this respect, the results of Krupnick et al. are in accordance with those of others. Up to 29% of abdominal injuries may be missed if blunt trauma victims are evaluated with admission abdominal sonography as the sole diagnostic tool.² But at this time no single test alone, including explorative laparotomy, always identifies abdominal injuries. Therefore, we can not be sure that patients with negative CT scan had no abdominal organ injury. Unfortunately, the authors in their study do not mention the number of children who had to be operated on. It would have been interesting if they compared intraoperative findings with the results of both CT and US. Certainly the majority of injured children underwent laparotomy. Furthermore, it was of interest to know if nonoperative treatment was followed by CT scan or ultrasound examination.

After the enthusiastic experiences of European authors, recently many American surgeons have published encouraging results by using abdominal ultrasonography to assess trauma victims, showing a specificity of more than 90%.^{3,4,5} I am a general surgeon and have performed more than 7,000 ultrasound examinations, including many urgent examinations in adult and pediatric trauma victims. Up to now, I have had no problems with patients who had a negative initial sonography. My problem today is in the follow-up of patients with known splenic injury who are assigned to conservative treatment. In addition to its potential cost-effectiveness, the absence of radiation damage and the easy and rapid execution, which can be repeated at any time and everywhere, ultrasound examination remains the method of first choice for evaluating and following blunt trauma victims, even for children. Therefore, in the conclusion of Krupnick et al., that "US may be of limited use in the initial assessment, management, and follow-up of pediatric splenic trauma" seems to be exaggerated.

References

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Authors' Reply

Clearly, Dr. Thaler has an extensive experience with the use of ultrasonography in the evaluation of a trauma patient. However, critical to the safe and thorough care of pediatric patients with blunt abdominal trauma is the accuracy in determining the extent of injury. Although no test is 100% sensitive, computerized tomography (CT) is currently the most thorough diagnostic test for the evaluation of intraabdominal and retroperitoneal injuries. Certainly an emergency ultrasonographic study (US) can be critical in searching for a source of blood loss in a hemodynamically unstable adult or child. However, this is an uncommon situation. Contrary to his statement, the vast majority of children with blunt abdominal trauma, including patients with severely ruptured spleens, do not undergo laparotomy, but are managed by observation. The inability of ultrasonography to detect one-third to one-half of the splenic injuries in our series, suggests that reliance on this method would be unsafe and underestimate the degree of injury in many children. None of the patients in this series required a laparotomy. Many studies that advocate the use of US as an adequate and sensitive modality have substantial pitfalls in their analysis. A number of studies with negative US examinations lack other diagnostic tests to confirm a lack of significant injury. This allows splenic injuries not diagnosed by the initial US to remain undetected, falsely inflating the sensitivity of ultrasonography and potentially missing an injury that could result in inadequate treatment of the patient. Our study is unique because every US is correlated with a CT scan, which allows us to properly determine the sensitivity of US in these children. We do feel that ultrasonography may have a role in the follow-up of some splenic injuries where the development of a large pseudocyst needs to be excluded. Reliance, however, on this test as a sole indicator of the extent of abdominal injuries in the acute setting is potentially unsafe and is unsupported by our study.

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Dear Editor:

Both of us read with interest the article by Buell et al.¹ These authors have extensive experience in bilateral adrenalectomy for Cushing's syndrome. They compare advantages and drawbacks of open anterior *versus* open posterior synchronous approach of both