ide, and there is one case report of long-term nitric oxide inhalation used as a bridge to transplantation.[5] Considering the published experience and the potential risks and benefits, however, we currently recommend therapy with continuous intravenous epoprostenol for patients with severe primary pulmonary hypertension that is refractory to conventional medical therapy.

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STREPTOCOCCAL SKIN INFECTIONS

To the Editor: In their review article on group A streptococcal infections of skin and soft tissues (Jan. 25 issue),[1] Bisno and Stevens point out that it may be difficult to differentiate necrotizing fasciitis from cellulitis. The distinction is critical, since the former infection requires surgical débridement with antibiotic therapy, whereas the latter usually responds to antibiotics alone. They add that computed tomography (CT) or magnetic resonance imaging (MRI) "is useful in locating the site and depth of infection."

This raises a crucial issue in the management of deep-seated group A streptococcal infection — namely, the time required for diagnosis and the institution of definitive therapy. As Stevens[2] has noted of serious group A streptococcal infections, "The speed with which [group A streptococcus] induces local infection, multiorgan failure, and death cannot be matched by any other infectious organisms." Overreliance on radiographic imaging studies may substantially delay appropriate treatment of necrotizing soft-tissue infections caused by these organisms.

Studies describing features of MRI that may distinguish necrotizing infections from cellulitis have not examined the relation between the time required to perform MRI and the clinical course. In contrast, surgical exploration and frozen-section biopsy have been shown to decrease the time to the diagnosis of necrotizing fasciitis and to improve the outcome.[3] Furthermore, radiographic scanning may yield inaccurate information regarding the extent of muscle involvement.[4] In one child with group A streptococcal necrotizing myositis seen at our institution, MRI showed diffuse T_2-weighted signal abnormalities that corresponded at surgery to necrosis in some regions, but to grossly normal muscle in others. This patient had a cardiopulmonary arrest in the MRI suite.

In known high-risk conditions in children, such as the exanthem of primary varicella, we have attempted to identify the clinical features that can aid in the rapid diagnosis of necrotizing infections caused by group A streptococcus, and in prompt surgical intervention.[5] The most important features were pain out of proportion to other clinical findings, an appearance suggesting toxicity or a lethargic appearance, hypotension or tachycardia, and laboratory studies indicative of toxic shock syndrome (e.g., a marked increase in immature neutrophils and azotemia). The same criteria may be applied to other high-risk situations as outlined by Bisno and Stevens.

Delineation by CT or MRI of a necrotic deep-tissue focus of group A streptococcus infection indicates a disease that, by definition, would have benefited from earlier surgical exploration and débridement. In the context of a high index of clinical suspicion, we believe that occasional surgical explorations for group A streptococcal necrotizing fasciitis with negative results are preferable to the risk of progressive tissue damage or toxic shock syndrome in patients awaiting evaluation in the radiographic imaging suite.

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The authors reply:

To the Editor: We certainly agree with Brogan et al. that time should not be lost in undertaking surgical exploration in patients who are perilously ill with the clinical manifestations they mention, particularly if there is rapid extension of the area of involvement. Nothing in our review should be interpreted as asserting that imaging procedures are a sine qua non for the diagnosis of necrotizing fasciitis. Quite the contrary. We also realize that these techniques are not foolproof in assessing invasive soft-tissue infections.

Each case, however, must be approached individually. As stated in our review, there are instances in which there is legitimate difficulty, particularly early in the evolution of the process, in determining the desirability of surgical intervention. In many centers, studies such as CT and MRI can be completed very expeditiously and may actually facilitate the process of getting the patient to the operating room if they accurately document the level of tissue involvement.[1,2]

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HEPATOCELLULAR CARCINOMA (CASE 2-1996)

To the Editor: The Case Records in the January 18 issue of the *Journal*[1] reflects the difficulties in distinguishing focal nodular hyperplasia from the fibrolamellar variant of hepatocellular carcinoma. Polysomies of chromosome 1, detected by conventional cytogenetic methods, may be characteristic of hepatocellular carcinoma.[2,3] We used fluorescence in situ hy-