

**NSF AND
CONTRAST**

Nephrogenic Systemic Fibrosis After Gadolinium Exposure Linked to Other Underlying Disease

A retrospective study evaluated the records of patients with pathologically proven nephrogenic systemic fibrosis (NSF) and compared them with control subjects to evaluate for risk factors associated with development of NSF. They found that all seven patients who developed NSF had received gadodiamide prior to the onset of symptoms. Although no single risk factor was found in all patients, all of them had coexistent inflammatory disease (positive ANA, recent surgical procedure, or granulomatous disease). All seven patients had renal failure; four of them had chronic renal failure, and all of these four received dialysis prior to developing NSF, suggesting that dialysis does not protect against development of the disease. **Conclusion: Although NSF develops in patients with renal insufficiency, there is also likely a link to underlying inflammatory disease. In addition, dialysis does not protect against the development of NSF.**¹

WHAT IS NSF?

Nephrogenic systemic fibrosis, also known as nephrogenic fibrosing dermopathy, is a rare disease first recognized in 1997 and first characterized in 2000. Until May 2007, only about 215 cases had been reported to the International Center for Nephrogenic Fibrosing Dermopathy Research (ICNFDR) and the FDA.^{2, 3}

• Risk Factors

- To date, NSF has only been reported in patients with renal insufficiency. There is no link between the duration of renal disease and development of NSF.
- A strong link has been found between administration of gadolinium-based contrast and development of NSF. The FDA reported in May 2007 that of the 215 cases of NSF reported to date, detailed histories were reviewed for 75, all of whom received gadolinium prior to development of the disease. The form of gadolinium most often associated with NSF is gadodiamide, although the “FDA believes that there is a potential for NSF/NFD to occur with the use of any of the approved gadolinium-based contrast agents.”²
- NSF often develops in patients who have recently had vascular thrombosis or vascular surgery.
- There may be an association with other inflammatory conditions (see article above).
- Males and females are affected equally; most patients are middle-aged.

• Clinical features⁴

- Symptoms usually develop over days to weeks.
- Symptom onset may be anywhere from two days to 18 months after exposure to gadolinium.
- Skin fibrosis in NSF may mimic scleroderma, with predominant peripheral extremity involvement. It may involve the trunk, but it spares the neck and face and lacks the presence of serologic markers seen in scleroderma. The fibrosis may initially appear as plaques. They often cause skin pain, myalgia, arthralgia, and contractures.
- Approximately 5% of patients have a rapid and fulminant course that may result in death.
- It is now known that fibrosis also affects other organs, such as liver, lungs, muscle, and heart, which may contribute to the increased mortality of patients with NSF.⁵
- Symptoms may improve with improvement of renal function

CT CROHN'S DISEASE

CT Enterography Accurate for Preoperative Evaluation of Crohn's Disease

At the Cleveland Clinic, researchers retrospectively evaluated the records of 36 patients with Crohn's disease who underwent CT enterography (using low-Hounsfield unit barium suspension), then compared the results to those from subsequent surgery. The presence or absence of stricture and abscess was correct on CTE in 100% of cases. The presence or absence of fistula or inflammatory mass was correctly determined in 94% and 97% of the cases, respectively. **Conclusion: Although the accuracy of CTE in determining small-bowel pathology is similar to that of small-bowel follow-through and enteroclysis, CT provided the advantage of detecting abdominopelvic pathology, such as inflammation and abscess.**⁶



CT enterogram shows engorged vasa recta producing the comb sign (arrows), involving two ileal loops with asymmetric enhancement and wall thickening.

MRI PROSTATE

Diffusion-Weighted Imaging Increases Sensitivity for Prostate Cancer

Japanese researchers retrospectively compared the accuracy of T2-weighted MRI alone with that of T2-weighted MRI with apparent diffusion coefficient (ADC) mapping for the evaluation of the prostate. All 37 patients studied had a known diagnosis of prostate cancer and had undergone radical prostatectomy. They found that addition of the ADC map increased the sensitivity of detection from 51% to 71%, but did not significantly change the specificity. Adding the ADC map also increased the accuracy of tumor volume assessment in lesions with higher Gleason score and lesions in the transitional zone. **Conclusion: The addition of diffusion-weighted imaging to MRI evaluation of prostate cancer increases sensitivity.**⁷

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SOURCES

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