

CALLED INTO QUESTION, AN INQUIRY INTO NEPHROGENIC FIBROSING DERMOPATHY (NFD)

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Background: NFD is an acquired skin disorder reported in dialysis patients exposed to gadolinium (Gd) based contrast media used for magnetic resonance imaging (MRI). Limited data exists about its true incidence. Methods: 215 patients were identified upon cross-referencing CPT codes for MRI studies and chronic kidney disease (CKD) between years 2000 and 2006. This group was matched to a random sample of patients undergoing MRI within the same calendar year with normal renal function i.e. without a CPT code for CKD (control). A brief telephone questionnaire inquiring about self-reported skin changes suggestive of NFD was administered. Results: We identified 421 patients completing an MRI within this 6 year time period. We were able to contact 200 patients and 80 completed the questionnaire. 9 patients who reported skin changes prior to their MRI were excluded, reducing the sample size to 71. 32.4% of subjects (23/71) had CKD. Among CKD patients 74% (17/23) reported at least one skin change following the MRI (OR=4, $p=0.011$) compared to 41.7% (20/48) of controls. Of the patients exposed to Gd, 60 % (21/35) reported skin changes compared to 44.4% (16/36) without exposure ($p=0.190$). Stratifying by kidney function, there was no association between contrast exposure and skin changes among controls; however, in CKD patients with contrast exposure (11/12) 91.7% of patients reported skin changes compared to (1/12) 8.3% of patients who did not report skin changes (OR=9.2, $p=0.043$). Discussion: The probability of self-reported skin changes following MRI was 9 times higher in patients with underlying renal dysfunction and Gd exposure. Of the 3 patients at our institution with biopsy-proven NFD, 2 were identified by our patient selection procedure, adding validity to the initial process of selecting potential subjects. Since biopsy conformation is essential, this study will be extended to request patients with self reported skin changes to undergo a skin biopsy. Conclusion: As a result of this pilot historical cohort study, we recommend continued caution with use of Gd in patients with abnormal renal function