MRI screening may help identify spinal infections from contaminated drug injections

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Magnetic resonance imaging (MRI) at the site of injection of a contaminated lot of a steroid drug to treat symptoms such as back pain resulted in earlier identification of patients with probable or confirmed fungal spinal or paraspinal infection, allowing early initiation of medical and surgical treatment, according to a study in the June 19 issue of *JAMA*.

"Fungal contamination of methylprednisolone [a steroid] prepared by a compounding pharmacy resulted in an unprecedented multistate outbreak of meningitis in the fall of 2012," according to background information in the article. "Initially, these injections were complicated by meningitis. Within 6 weeks of the outbreak, meningitis became less frequent and localized spinal and paraspinal infections became the principal manifestations of contaminated steroid injections. In contrast to the relatively brief period in which meningitis cases appeared, a steady stream of spinal and paraspinal infections continue to present long after the injections were administered. Because patients received these injections to treat back pain or neuropathic symptoms, the presentation of a slowly developing spinal or paraspinal infection has been obscured."

Anurag N. Malani, M.D., of St. Joseph Mercy Hospital, Ann Arbor, Mich., and colleagues conducted a study to determine if patients who had not presented for medical care but who had received contaminated methylprednisolone developed spinal or paraspinal infection at the injection site detected using contrast-enhanced MRI screening. There were 172 patients who had received an injection of methylprednisolone

from a highly contaminated lot at a pain facility but had not presented for medical care related to adverse effects after the injection. Screening MRI was performed between November 2012 and April 2013.

Of the 172 patients screened, 36 (21 percent) had an abnormality in their MRI. Thirty-five of the 36 patients with abnormal MRIs met the Centers for Disease Control and Prevention (CDC) case definition for probable (17 patients) or confirmed (18 patients) fungal spinal or paraspinal infection. All 35 patients were treated with antifungal agents; 24 required surgical intervention.

"At the time of surgery, 17 of 24 patients (71 percent), including 5 patients who denied having symptoms, had laboratory evidence of fungal infection," the authors write.

Data were obtained from 115 patients regarding the presence of new or worsening back or neck pain, radiculopathy, or lower-extremity weakness Thirty-five of the 115 patients (30 percent) had at least 1 of these symptoms.

"Our findings support obtaining contrast-enhanced MRI of the injection site in patients with persistent back pain even when their pain disorder has not worsened," the researchers write. "A proactive outreach to patients receiving injections from a highly contaminated lot, especially lot No. 06292012@26, is needed. Magnetic resonance imaging may detect infection earlier in some patients, leading to more efficacious medical and surgical treatment and improved outcomes," the researchers conclude.

"… Malani et al have demonstrated the possibility of largely asymptomatic fungal infection among patients previously exposed to injection with contaminated lots of methylprednisolone," writes George R. Thompson III, M.D., of the University of California, Davis and

colleagues in an accompanying editorial.

"These findings suggest MRI of the injection site may be an effective screening procedure in some patients but should not be widely adopted, particularly for patients who received peripheral joint injections, given the much lower attack rate. For patients who received spinal injections with steroids from an unknown lot number, MRI-based screening may be appropriate. Whether patients with normal initial MRI findings receive reimaging at a later date remains a difficult question in this evolving outbreak."

More information: *JAMA*. 2013;309(23):2465-2472
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