

Selected Topics: Neurological Emergencies



EPIDURAL STEROID INJECTION COMPLICATED BY INTRATHECAL ENTRY, PNEUMOCEPHALUS, AND CHEMICAL MENINGITIS

Aakash Kaushik Shah, MD, MBA, MSC,* Andrey Bilko, MD,† and James Kimo Takayesu, MD, MS*

*Department of Emergency Medicine, Massachusetts General Hospital and Harvard Medical School, Boston, Massachusetts and

†Department of Anesthesiology, Penn State Milton S. Hershey Medical Center and Penn State College of Medicine, Hershey, Pennsylvania

Reprint Address: Aakash Kaushik Shah, MD, MBA, MSC, Department of Emergency Medicine, Massachusetts General Hospital and Harvard Medical School, 5 Emerson Place, Boston, MA 02114.

Abstract—Background: Epidural steroid injections are frequently used to treat back and extremity pain. The procedure is generally safe, with a low rate of adverse events, including intrathecal entry, pneumocephalus, and chemical meningitis. **Case Report:** We report a case of a 45-year-old woman who presented to the emergency department (ED) with headache, nausea, vomiting, and photophobia after a lumbar epidural steroid injection. She was afebrile and had an elevated white blood cell count. A non-contrast computed tomography scan of the head revealed pneumocephalus within the subarachnoid space and lateral ventricles. The patient was admitted to the ED observation unit for pain control and subsequently developed a marked leukocytosis and worsening meningismus. A lumbar puncture was performed yielding cerebrospinal fluid (CSF) consistent with meningitis (1,000 total nucleated cells, 89% neutrophils, 85 mg/dL total protein, and no red blood cells). Gram stain revealed no bacteria. The patient was admitted on empiric vancomycin and ceftriaxone. Antibiotics were discontinued at 48 h when CSF cultures remained negative and the patient was clinically asymptomatic. **Why Should an Emergency Physician Be Aware of This?:** Emergency physicians should consider intrathecal entry and pneumocephalus in patients who present with a headache after an epidural intervention. The management of pneumocephalus includes supportive therapies, appropriate positioning, and supplemental oxygen. These symptoms can be accompanied by fever, leukocytosis, and markedly inflammatory CSF findings consistent with bacterial or chemical meningitis. Empiric treatment with broad-spectrum antibiotics should be initiated until

CSF culture results are available. © 2016 Elsevier Inc. All rights reserved.

Keywords—intrathecal injection; pneumocephalus; chemical meningitis; epidural steroid injection; epidural intervention; headache

INTRODUCTION

Epidural steroid injections are frequently used to treat back and extremity pain due to herniated disks, foraminal stenosis, and central canal stenosis (1). These injections are generally well tolerated with a low rate of adverse events (2). Minor complications include pain at the injection site, pre-syncope, vasovagal reactions, facial flushing, and postural headache (3). Case reports of major complications, including intrathecal entry, pneumocephalus, subarachnoid hemorrhage, respiratory depression, and cardiopulmonary arrest, are uncommonly reported (4–7). In this article, we report a case of a lumbar epidural steroid injection complicated by intrathecal entry, pneumocephalus, and chemical meningitis.

CASE REPORT

A 45-year-old woman with a history of obesity, cervical radiculopathy, and low back pain presented to the emergency department (ED) with headache, nausea, vomiting,

and photophobia 90 min after receiving a lumbar epidural steroid injection at a local outpatient pain clinic. She had undergone the same procedure 3 months earlier with significant symptomatic relief of her radicular low back pain without complication.

During the procedure, the patient was seated, draped in sterile fashion, and given subcutaneous lidocaine for local anesthesia. The needle was advanced toward the desired interspace, with positioning assessed using tactile feedback and confirmed fluoroscopically. Two milliliters of a 0.5% lidocaine solution containing 80 mg methylprednisolone and 12 mg betamethasone were then injected. Residual medication in the tubing was cleared by saline flush and the needle was withdrawn.

As she was leaving the clinic, the patient reported dizziness and difficulty ambulating. After arriving home approximately 30 min after the procedure, the patient developed a sudden-onset severe headache accompanied by nausea, emesis, and photophobia. The headache was described as global, constant, throbbing, and positional (worse with sitting up and slightly better with lying down). Given the severity of her symptoms, she was brought to ED by ambulance.

On arrival, she was uncomfortable appearing, afebrile, and hemodynamically stable with no focal neurologic deficits on examination. She was given 4 mg intravenous (IV) ondansetron and 10 mg IV metoclopramide, 4 mg IV morphine, and a 1-L bolus of normal saline. Basic laboratory tests were notable for a white count of 12.97 K/uL. Although post-dural puncture headache was the most likely diagnosis, the differential diagnosis included subarachnoid hemorrhage, subdural hematoma, or pneumocephalus. She underwent a STAT non-contrast head CT scan that revealed multiple small foci of air within the subarachnoid space and ventricles with no evidence of herniation or hemorrhage (Figure 1). A diagnosis of pneumocephalus was made and she was transferred to the observation unit for symptomatic treatment and serial neurologic examinations.

The following day, the patient reported mild improvement of her symptoms. She remained afebrile and hemodynamically stable with no change on her physical examination. Her morning laboratory tests, however, were notable for a marked increase in her white count from 12.97 K/uL to 24.90 K/uL. A lumbar puncture was performed, given concern for iatrogenic meningitis

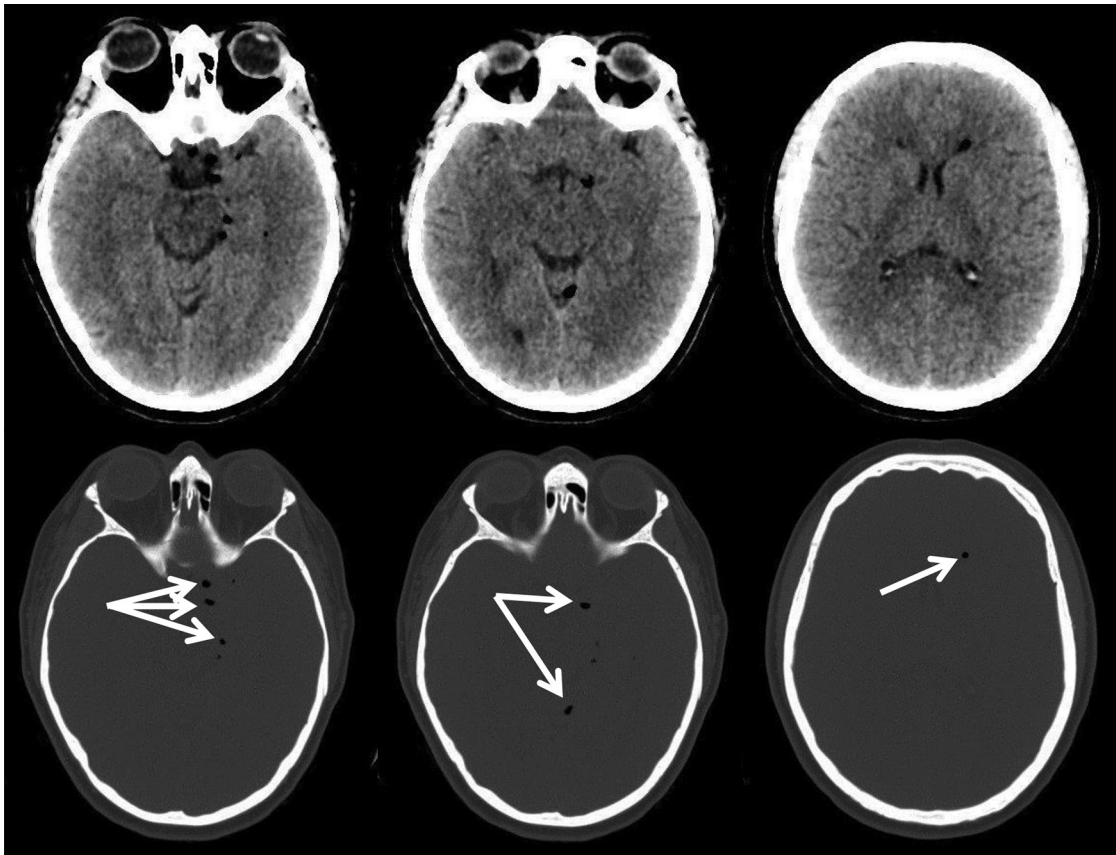


Figure 1. Non-contrast computed tomography scan of the head revealed multiple small pockets of air within the subarachnoid space and lateral ventricles (indicated by arrows on bottom row of images).

Download English Version:

<https://daneshyari.com/en/article/3245603>

Download Persian Version:

<https://daneshyari.com/article/3245603>

[Daneshyari.com](https://daneshyari.com)