Epidural Abscess following Epidural Catheterization in a Chronic Pain Patient: A Diagnostic Dilemma

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Reviews addressing the epidemiology of epidural abscess conclude that infection of the epidural space is an extremely rare condition accounting for, on average, about 1 in 50,000 hospital admissions.1 Reported cases suggest that most epidural infections result from trauma, surgical procedures, intravenous drug use, or hematogenous spread of infection from elsewhere in the body, rather than as a result of epidural analgesia.2-4

Clinical recognition of either acute or chronic epidural abscess can be extremely difficult. In patients with underlying painful disorders in whom continuous epidural analgesia or anesthesia is used for evaluative or therapeutic purposes, this diagnostic dilemma may be compounded. We report a case of a patient who developed an epidural abscess after continuous epidural catheterization for management of a long-standing thoracic neuralgic pain syndrome.

CASE REPORT

A 35-year-old woman was referred to our Pain Management Center for evaluation and treatment of left-sided parascapular pain of 7 months duration. This pain problem followed an episode of acute bronchitis and had been unresponsive to treatment with non-steroidal anti-inflammatory agents, tricyclic antidepressants, transcutaneous nerve stimulation, massage and ultrasound, and intercostal nerve blocks. The patient was taking up to ten Percocet® tablets a day and was organizing her life around the acquisition of analgesics for pain relief.

Her pain was described as sharp and burning with intermittent stabbing sensations in a circumscribed area from the lateral border of the left scapula to the ipsilateral posterior axillary line. It was described as severe and debilitating, keeping her from enjoying an active life and interfering with her work as a realtor. She consumed alcohol moderately, smoked one to two packs of cigarettes a day, frequently used over-the-counter soporifics in order to fall asleep at night, and consumed approximately 12–14 cups of caffeinated beverages each day.

Physical examination was remarkable for a tearful and agitated affect and an area of reproducible dysesthesia in a wedge-like distribution from the left scapular border to the ipsilateral posterior axillary...
thoracic epidural abscess extending from T5 to T10. Recovery from surgery was relatively uneventful. At 6 months follow-up, the patient complained of parasthesias of variable intensity down the right leg in a stocking distribution, as well as "back spasms." The thoracic neuralgic pain has never recurred.

DISCUSSION

Epidural abscess is an extremely rare condition, and only a few cases have been reported as a result of epidural catheterization. Many of the risk factors associated with early case reports, as reviewed by Bromage, have been eliminated by the use of disposable equipment, adherence to aseptic technique, and single-use preparations of preservative-free injectable drugs. Even with these standards, it appears that there will inevitably be some incidence of infection associated with this invasive procedure. Barreto found a number of catheter tips, as well as the skin surrounding epidural catheter placement sites, to be contaminated with potentially pathogenic organisms, despite a strict aseptic placement technique. Similarly, Hunt et al. found a 22% incidence of contaminated catheter tips in a study of 102 patients who had epidural catheters placed for a variety of indications under rigorously controlled conditions. With these findings, it is indeed remarkable that, of the tens of thousands of epidural catheters placed annually for labor and delivery, surgical procedures, pain control, and diagnostic evaluation, there are so few clinically apparent infections. This is especially surprising in view of the difficulty in maintaining fastidious conditions in the labor bed, and the risk of infection associated with immunocompromised cancer patients in whom epidural analgesia is provided for long-term pain control. Another group that is logically at risk consists of those patients who receive epidural steroids for chronic low back pain. Factoring out cases where obvious contamination occurred and caused infection, the occurrence of epidural abscess appears to be a more unpredictable event than predicated upon these more obvious potential risk factors.

Another variable to be considered is the duration that a percutaneous catheter remains in situ. Certainly, an epidural catheter should only remain in place for specific well-defined indications, but, presently, there is not adequate data to suggest a duration beyond which the risk of infection increases. It has been shown that epidural catheters could remain in place for several days, and even weeks, in a military field hospital to provide analgesia for injuries sustained during the Vietnam war without apparent complications (Petty WC, personal communication).

In patients with an acute or chronic epidural abscess, the diagnosis is often missed initially or may not be made until post-mortem examination. This is due to the
ambiguous nature of symptoms, signs, and specificity of diagnostic tests associated with epidural infections. Pain progressing in a radicular pattern and fever are the most common early findings, and, once neurological loss ensues, the diagnosis becomes more obvious. However, at this later stage, progression to irreversible neurological deficit due to localized spinal cord compression and vascular compromise is rapid.

Early diagnosis requires aggressive diagnostic testing for confirmation by myelography, contrast enhanced computerized tomography, or magnetic resonance imaging. Although early diagnosis is of paramount importance so that definitive surgical therapy can prevent permanent neurologic loss, this can be a conundrum in chronic pain patients, exemplified by the case presented. When pain is the only early presenting complaint and the assessment of the pain complaint is confounded by exaggerated responses, one must depend on reproducible clinical findings and support these with corroborating tests.

One of the tenets of management of most chronic (non-malignancy-related) pain syndromes is non-reinforcement; i.e., limiting operant conditioning factors, such as medical interventions, purely for pain complaints, except on a time-contingent "preventative" basis or when clinical signs dictate otherwise. Patients who express painful sensations in a florid and inconsistent fashion may require invasive nerve-blocking procedures for diagnostic and clarification purposes. However, an additional risk in these patients may be the difficulty in making rapid diagnoses of complications where pain or unusual sensations are premonitory features.

As the practice of chronic pain management grows, these dilemmas are sure to surface with increasing frequency. Those involved in these patients' care must add this unsettling dimension and enhanced risk to an arena already brimming with ambiguity.

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Extrapyramidal Reactions to Low-dose Droperidol

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Nausea and vomiting is the most frequently reported postoperative adverse reaction in ambulatory surgery. Low doses of droperidol are used to prevent postoperative nausea and vomiting. It is effective in children undergoing strabismus surgery, and in adults undergoing gynecologic and orthopedic surgery. In the low doses commonly used (0.6-1.25 mg) in adults, adverse side effects such as extrapyramidal reactions or severe anxiety have not been reported to occur. Phillip states that these side effects are not seen with the above doses. Two cases of severe extrapyramidal reactions, apparently caused by low-dose droperidol, are described, following outpatient anesthesia and surgery.

CASE REPORTS

Case 1. A 24-yr-old, 58-kg woman, ASA classification I, taking no medications, underwent diagnostic laparoscopy and tubal lavage for evaluation of primary infertility. General anesthesia was given with endotracheal intubation. d-tubocurarine, 3 mg, and droperidol, 0.65

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