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CLINICAL INFORMATION

Spinal injection of local anesthetic during cervical facet joint injection



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KEYWORDS

Injections;
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Pain management

Abstract

Introduction: Facet joint pain is a common source of non-radicular back pain worldwide. Non-surgical interventional modalities remain the mainstay in the treatment of facetogenic back pain and comprise the second most commonly performed interventional pain procedures in the USA.

Case: A 36 year-old man with chronic cervical pain secondary to C6–C7 facet arthrosis radiographically, underwent diagnostic local anesthetic bilateral facet joint injection under fluoroscopic guidance. The left side was injected uneventfully; however, 1–2 min following injection of the right side the patient complained of unwellness and became very anxious. He referred paresthesias of the bilateral upper extremities, chest and upper abdomen. Physical examination showed sensory deficits roughly from C5 to T7 without motor deficits; resuscitation measures were not warranted. The deficits were completely resolved by 35–40 min in the recovery area.

Discussion: Facet joint injections are a common and safe method of treating back pain secondary to facet arthropathy. Despite excellent safety profiles, rare and sometimes, life-threatening complications can occur. Our case hypothesizes intrathecal injection of local anesthetic during facet joint injection. Few reports have described similar situations. We hypothesize a mechanism of entry through the facet joint, given the proximity of the ligamentum flavum, and the intrathecal space to the anterior aspect of the facet joint. This report reinforces the need for resuscitation and airway management equipment to be readily available where interventional procedures are performed, as well as the need for adequate proficiency in airway management and resuscitation techniques in Pain Medicine training.

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PALAVRAS-CHAVE

Injeções;
Intra-articular;
Articulações
zigoapofisárias;
Controle da dor

Injeção espinhal de anestésico local durante injeção em facetas articulares cervicais**Resumo**

Introdução: A dor nas articulações facetárias é uma fonte mundialmente comum de dores nas costas não radiculares. As modalidades de intervenções não cirúrgicas continuam sendo os pilares no tratamento da dorsalgia facetária e ocupam o segundo lugar entre os procedimentos mais comumente feitos nos EUA para o manejo da dor.

Relato de caso: Paciente do sexo masculino, 36 anos, com dor cervical crônica secundária à artrose facetária em C6-C7 (confirmada por radiografia), submetido a exame diagnóstico bilateral das facetas com injeção de anestésico local sob orientação fluoroscópica. O lado esquerdo foi injetado sem intercorrências; porém, um-dois minutos após a injeção do lado direito, o paciente queixou-se de mal-estar e ficou muito ansioso. Mencionou parestesia nos braços, no tórax e no abdome superior. O exame físico revelou déficits sensoriais de, aproximadamente, C5 a T7, sem déficit motor; medidas de reanimação não eram justificáveis. Os déficits foram completamente resolvidos em 35-40 minutos na área de recuperação.

Discussão: A aplicação de injeções nas articulações facetárias é um método comum e seguro de tratar a dor nas costas secundária à artropatia facetária. Apesar dos excelentes perfis de segurança, complicações raras e, às vezes, com risco de morte podem ocorrer. Nosso caso relata a injeção intratecal de anestésico local durante injeção nas facetas articulares. Poucos relatos descreveram situações semelhantes. Levantamos a hipótese de um mecanismo de entrada através da faceta articular, por causa da proximidade do ligamento amarelo e do espaço intratecal com o aspecto anterior da faceta articular. Esse relato reforça a necessidade de reanimação e de equipamentos para o manejo das vias aéreas estarem prontamente disponíveis quando procedimentos intervencionistas são feitos, bem como a necessidade de estabelecer o domínio do conhecimento no manejo das vias aéreas e das técnicas de reanimação e treinamento em medicina da dor.

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Introduction

Chronic back pain is a common and serious problem in the modern world, with up to 84 percent of adults suffering from it at some point in their lives.¹

Facet joint (FJ) pain, pain which arises from arthrosis of the zygapophyseal joints in the spine, is a common source of non-radicular back pain, with an estimated point prevalence as high as 15–40% in the lumbar spine² and 45–55% in the neck.³

Despite controversial evidence supporting its efficacy,⁴ non-surgical interventional modalities to treat these disorders (i.e. FJ injections, Median Brach Blocks (MBB) and Radiofrequency Ablations (RFA) of the MBB) still remain the mainstay in the treatment of facetogenic back pain⁵ and comprise the second most commonly performed interventional pain procedures in USA.⁶ We present an uncommon complication of these common procedures, a case of intrathecal local anesthetic injection during FJ injection.

Case

An otherwise healthy 36-year-old man with a history of chronic cervical back pain of 10 months duration, status post-anterior cervical spinal fusion, with C6–C7 facet

arthrosis radiographically, underwent diagnostic local anesthetic bilateral FJ injection. The patient was positioned prone, and under fluoroscopy the C6–C7 FJ was localized and marked, followed by chlorhexidine sterile field preparation and draping. A 22-gauge spinal needle was inserted percutaneously and directed under fluoroscopy until insertion through the joint capsule was felt as a drop into the joint space. This was confirmed with injection of 0.5 mL of iodine-based contrast media with satisfactory arthrograms (Fig. 1), followed by negative aspiration and subsequent injection of 1 mL of 0.5% Bupivacaine on the left and 0.75 mL on the right as allowed by compliance of the joint space. The left side was injected uneventfully; however, 1–2 min following injection of the right side, the patient complained of unwellness and became very anxious. He was turned supine and was administered oxygen by nasal cannula. Vital signs and oxygen saturation remained unremarkable with the exception of mild tachycardia and tachypnea; basic intubation and resuscitation equipment were made readily available. The patient referred paresthetic sensations (pins and needles) to the bilateral upper extremities, chest and upper abdomen. On physical examination there were sensory deficits to temperature sensation in the areas referred by the patient, roughly from C5 to T7 without motor deficits.

The patient was observed in the interventional suite for 10 min with improvement of the sensory deficits, which were

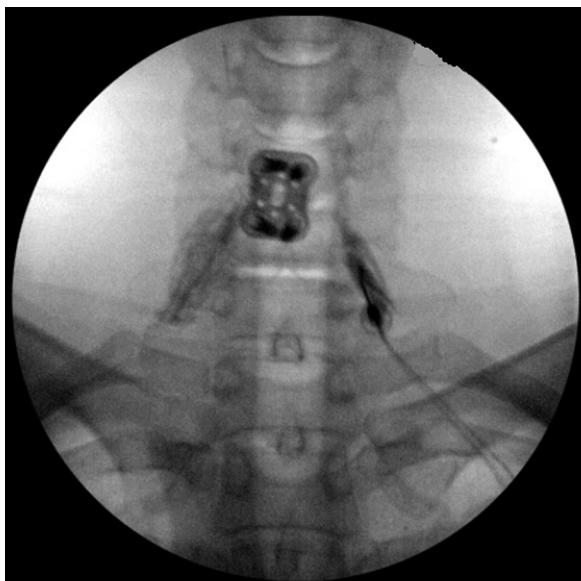


Figure 1 Fluoroscopic arthrogram of bilateral C6–C7 facet joints.

completely resolved by 35–40 min in the recovery area. No residual deficits were noted and the patient was discharged.

Discussion

FJ injections are a common and safe method of treating non-radicular back pain in patients with findings suggesting facet arthropathy.⁵ Despite excellent safety profiles, rare and sometimes, life-threatening complications can occur. Our case describes what we hypothesize to be intrathecal injection of local anesthetic during a FJ injection. Few reports have described similar situations with more pronounced neurologic and hemodynamic effects,^{7,8} concomitantly these occurred after injection of spinal anesthetic (10 mg approximately) doses of Bupivacaine intrathecally. We hypothesize a mechanism of entry through the FJ, given the proximity of the ligamentum flavum, and consequentially, the intrathecal space to the anterior aspect of FJ capsule.⁹ The minuscule dose of Bupivacaine (between 2.5 and 5 mg) injected may account for the lack of sympathectomy and short duration

of the symptoms. Another hypothesis would be subdural, rather than intrathecal spread of the local anesthetic; however, it is felt that the volume injected is insufficient to account for such widespread deficits.

This report reinforces the need for resuscitation equipment, including supplemental oxygen, intravenous accessories, intubation and monitoring equipment, as well as vasoactive medications to be readily available in any facility where interventional procedures are performed, but mostly, it emphasizes the need for adequate proficiency in airway management and resuscitation techniques in Pain Medicine training, especially in physicians without anesthesia background.

Conflicts of interest

The author declares no conflicts of interest.

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