



Case Report

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## Hoigne's syndrome following the injection of repeating benzathine penicillin G: A case report

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### ABSTRACT

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Hoigne's syndrome is characterized by the development of acute neuropsychiatric symptoms which are mainly panic-like anxiety state and conversive neurosis. We here report a 60-year-old man with Hoigne's syndrome. Emergency physicians should always keep in mind Hoigne's syndrome.

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### 1. Introduction

Hoigné described the first cases of pseudo-anaphylactic reactions induced by intramuscular administration of procaine penicillin G in 1959 (Hoigne and Schoch 1959). Agitation, hallucinations and delirium are stated, to occurred following the administration of intramuscular procaine penicillin. Hoigne's syndrome (HS) have been reported in the literature to our knowledge (Silber and D'Angelo, 1985; Schmied et al., 1990; Schreiber and Krieg, 2001).

Pathogenesis of HS is still unclear (Landais et al., 2014). In literature, it is stated that HS is caused by the administration of many different antibiotics

such as ceftriaxone, cefoxitin, clarithromycin, procaine penicillin, intralesional steroid and lidocaine (Rockney, 1987; Rallis et al., 2009; Baran, 2014; Landais et al., 2014; Thompson and Theobald, 2016). Allergic and non-allergic effects are occurred following injections and infusions. Here we present a case of Hoigné's syndrome which was caused by intramuscular benzathine penicillin administration after obtaining patient consent.

### 2. Case

A 50-year-old man was admitted to the emergency department (ED) in September 2014, complaining

of agitation and fear of death. He had an benzathine penicillin injection for treatment of an streptococcus infection. 2-3 min after injection, symptoms occurred. Patient medical history was unremarkable except for routine monthly intramuscular benzathine penicillin injections. He didn't use any recreational drug, had no history of alcohol abuse. He was a nonsmoker. On admission to our ED, his blood pressure was 160/80 mmHg; his pulse was 90 beats/min; body temperature was 36° C. His general status was moderate, glasgow coma score was 13 (Eye: 4, motor: 5, verbal: 4). He was confused and in a panic-like anxiety state. Other his physical examination was normal and no focal neurological signs. On mental status examination, he was disoriented and uncooperative and conversive neurosis at the time. On cognitive testing he scored 18/30 on a screen of cognitive function (mini mental state examination) Laboratory tests were normal. He was started on intravenous diazepam infusion. After the initial stabilisation of the patient a CT-Scan, a MRI-Diffusion and a Cranial MRI were performed. None showed any abnormal findings. Over the next 1 day, his all symptoms resolved completely.

### 3. Discussion

We report a case afflicted by a reaction known as HS. Although HS is reported in with the use of agents such as ceftriaxone, cefoxitin, clarithromycin, HS usually occurs due to intramuscular procaine penicillin (Rockney, 1987; Landais et al., 2014; Sawa et al., 1977).

The pathophysiological mechanisms of which drugs may induce an acute neuropsychiatric episode, are not exactly known (Landais et al., 2014). However, pathogenesis of HS may be associated with an infectious disease and/or organic brain disease of other origin (Zdziarski, 2001). This case had no signs of infectious

diseases or organic brain disease.

HS is characterized predominantly by different neurotic symptoms including severe psychomotor agitation with confusion, sensations of disintegration, depersonalization, and derealization, perceived changes of body shape, visual and auditory hallucinations, panic-like anxiety including fear of death as well as alterations of consciousness and seizures (Schreiber and Krieg, 2001). Our case had neuropsychiatric symptoms such as panic-like anxiety state and conversive neurosis. Although he had not all symptoms, he was diagnosed HS. Because there was not other diagnosis to explain the patient's condition

It is stated that HS may be manifested by repeating injections of procaine penicillin (Magiera et al., 1985; Araszkievicz and Rybakowski, 1997;). Another clinical study, neuropsychiatric reactions were analysed during penicillin treatment and the most often symptoms were conversive neurosis, and subsequently the hypochondriac syndrome. In same study, HS had occurred after an average of sixth injections (Magiera et al., 1985). In 94% of the patients the neurotic symptoms manifested themselves within minutes after injections. A positive correlation between the age and intensity of the symptoms was found (Magiera et al., 1985). HS following the administration of intramuscular penicillin G procaine have been rare in the pediatric groups (Silber and D'Angelo, 1985). In our study, we report a geriatric patient who had a history of repeated benzathine penicillin injections and had severe neuropsychiatric symptoms.

As a result, emergency physicians should always keep in mind HS in patients with a history of penicillin use to properly manage disease and avoid unnecessary imaging. The dramatic and unexpected manifestation of this condition calls for an immediate diagnosis to decide the appropriate treatment.

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