Case report: Nickel dental alloys and laryngeal edema

Introduction

Unexpected allergic reactions during sedation may be rare but they remain a serious potential problem for the sedation practitioner especially when procedures are done outside the traditional operating theater. It is therefore crucial that sedation practitioners be trained to manage any emergency during sedation. Practitioners must also see that they update their knowledge and skills as stipulated in all international guidelines on sedation. The following article is important for sedation practitioners to take note of as it is not often that we see this type of adverse event.

I also want to advise readers to look at the references. More information on specific conditions related to the topic can be found there.

Abstract


This article presents a case report of a 31-year old female nurse who attended the outpatient clinic complaining of frequent attacks of hoarseness, shortness of breath, and difficulty in swallowing over a 4-month period. She also complained of urticarial lesions in the 2-month period before the symptoms of hoarseness and shortness of breath. She needed adrenaline and cortisone injections for treatment. She has no history of any other allergic reactions.

The patient was hospitalized and a diagnosis of laryngeal edema was made. She was treated with an antihistamine and cortisone. All tests for allergies were normal. While in hospital she was also treated with adrenaline because of the severity of the symptoms.

A more detailed medical history questionnaire revealed that a dental bridge had been placed in her mouth a short time before her symptoms began. The
dental bridge was then removed. The symptoms stopped at the end of the week and the patient was discharged.

She was symptom-free except for a moderate attack of laryngeal edema after eating a chocolate. A week later she again returned to the clinic with laryngeal edema after eating grape marmalade.

Discussion

The authors of this very interesting article claim that this is the first case report on dental alloys that can cause edema of the larynx in nickel-sensitive patients. They mention that the lack of such reports is probably due to the fact that dentists avoid the use of nickel in dental materials in recent years. Articles are still available that mention systemic reactions against nickel dental cast alloys \(^2,3\).

The authors suspected the possibility of a nickel hypersensitivity as the cause and advised her against taking foods that may contain nickel. She was advised not to take cocoa and chocolate, soya beans, oatmeal, nuts and almonds, fresh and dried legumes, which are routinely high in nickel content \(^4\).

The question arises how does one diagnose a nickel hypersensitivity. The authors describe the use of a 5% nickel sulphate skin patch to help with diagnosis as the basophil activation test with nickel was negative.

After applying the skin patch on the patient she started to complain of hoarseness and difficulty in swallowing. On removal of the patch the symptoms disappeared.

The authors believe that systemic allergic reactions to nickel may be due to a type 1 hypersensitivity, but the mechanism behind this all is not fully understood.

Conclusion
While writing this interesting case report I was wondering what could we as sedation practitioners learn from this.

- The authors make a valid recommendation in their summary: “if a patient has recurrent symptoms of recurrent laryngeal edema and we cannot find the reason for this, just take into consideration an allergic reaction because of nickel, especially in dental patients”.

- The value of a thorough medical history questionnaire. Maybe we must place more emphasis on the possibility of allergic reactions, and a history of that. They can be treated but we may land in serious trouble if we do not diagnose them correctly.

- The value of seeing that all emergency drugs that may be needed during sedation must be available in the sedation room.

- The issue of laryngospasm. Laryngospasm during sedation is rare but a potentially serious complication. Many potentially causative and risk factors are discussed in literature.

References


