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Toxic damage of oral cavity tissues after Metronidazol – case report

Toksyczne uszkodzenie tkanek jamy ustnej po zastosowaniu Metronidazolu – opis przypadku

Symptoms of adversary drug action in the area of the oral cavity can appear both after drugs administered generally and the ones administered locally. The whole picture of allergic reactions is constituted by several clinical symptoms, some of which are difficult to distinguish from the symptoms of toxic reactions. Reactions of hypersensitivity type I are most often observed after application of polymers in the oral cavity, which are present in pit and fissure sealants, orthodontic bonds, and they occur as Quincke's oedema or generalized urticaria. Acute drug-induced syndrome includes erythema exudativum multiforme. Reactions of hypersensitivity type IV can appear after application of various stomatologic preparations, e.g. materials for carious defects filling (amalgam, gold, composite materials) and drugs applied locally in the oral cavity. Such reactions manifest themselves as chronic scattered papular eruption of lichen planus character or in the form of single erythematous, vesical, vesicular eruptions, aphthae, erosions and ulcerations of different sizes, without/or with general symptoms [1].

Metronidazole is a derivative of 5-nitroimidazol, and it acts effectively on Gram-negative anaerobic bacteria, Gram-positive cocci and protozoans. Due to its spectrum of action, it is commonly used in stomatological practice to treat local inflammatory conditions of the oral cavity, in the form of a 10% ointment and a 0.5% solution. Metronidazole ointment is applied into periodontal pockets in cases of advanced forms of parodontitis resistant to routine therapies and in ulcerative gingivitis. When applied locally, Metronidazole is usually well tolerated. Until now the literature has not reported any hypersensitivity reactions to Metronidazole applied locally for stomatological reasons. We describe the case of a sudden, local allergic reaction after the application of Metronidazole 10% ointment into a periodontal pocket.

CASE REPORT

A female patient aged 43, a pharmacist, was sent to the emergency service in the Outpatients' Department of Dental Surgery Clinic of Medical University in Lublin with extensive ulceration in the oral cavity. During history taking she said that two days before she presented at a dentist's surgery with a pain in the area of tooth 15. During clinical examination the dentist diagnosed an inflammatory condition of the periodontal pocket in the area of tooth 15. He treated the patient with local therapy of mechanical removal of dental calculus and introduced anti-inflammatory stomatologic ointment, 10% Metronidazole, into the pocket. After the drug application there occurred a sudden pain and a

burning sensation in the area of the palate. The dentist immediately started to irrigate the ointment out of the pouch. The next day the patient presented at the surgery again because of enduring, severe pain in the areas of the palate and maxillary alveolar process on the dexter side, and buccal oedema. The dentist decided to extract tooth 15; however, the pain did not disappear. On the day when the patient presented at the emergency service, the extraoral examination of the patient revealed oedema of the buccal soft tissues and lower eyelid on the dexter side. Intraoral examination showed extensive ulceration on the palatal mucosa and maxillary alveolar process in the area of premolar and molar teeth on the dexter side. On the surface of the damaged mucosa there were visible dark purple blood extravasations and yellow-grey areas of necrotic tissue (Fig. 1). The patient reported that she had never been treated with Metronidazole preparations before, and the drugs she had received for various reasons never caused hypersensitivity symptoms. In the general therapy, Calcium preparation, Rutinoscorbin were administered orally, and in view of deep ulceration, amoxycylin was used as an antibiotic cover. A soft diet was also advised as well as rinsing of the oral cavity with weak infusion of camomile capitulum and flax-seed.



Fig. 1. Ulceration of palate and alveolar process three days after application of 10% Metronidazole ointment



Fig. 2. Local state after three weeks' treatment

After the first 24 hours of the therapy the patient reported decrease in pain intensity, better general feeling and the first night she had slept peacefully since the application of Metronidazole ointment during the first visit at the dentist's surgery. After 48 hours of the therapy a marked local improvement was observed, the ulceration was reduced, oedema of the cheek and lower eyelid on the dexter side regressed completely. Within the next days there took place a slow but continuous

improvement, and 18 days after Metronidazole ointment had been applied the palate was covered with young epithelium with blue colour of deeper layers of mucosa and dental alveolus still not healed after the extraction of tooth 15 (Fig. 2). The patient underwent epidermal patch test using 10% stomatologic ointment Metronidazole and 0.5% Metronidazole solution for intravenous injections. Within three days' time no positive skin reaction was observed.

DISCUSSION

Epidermal patch tests, which consist in placing a series of dentistry materials and/or drugs in non-toxic concentration on the skin, are helpful in identifying hypersensitivity. However, the value of those tests can be questioned, especially in the case of individual allergic reactions on the oral mucosa. After topical application of Metronidazole there have been described contact dermatitis [3], immediate allergic reactions and urticaria [2], fixed drug eruptions [4] and acute generalized exanthematous pustulosis [5].

Damage of the oral cavity caused by drugs used in general therapy occurs as a result of toxic drug action or congenital hypersensitivity, or acquired allergy. Most frequently it coexists with similar lesions on the skin. More occasionally, it occurs as a separate reaction. Among local damage in the oral cavity caused by preparations used in stomatological practice there happens to take place damage inflicted by caustic action of chemical substances, and tissue damage which is the result of congenital hypersensitivity (idiosyncrasy) or acquired allergy. The degree of the local damage also depends on the anatomic structure of tissues. Oral mucosa, as being richer in water, is more sensitive to damage than skin. In serious cases the clinical picture can resemble erythema exudativum multiforme. The presented case shows the possibility of occurrence of a violent local allergic reaction to Metronidazole ointment, which is relatively frequently used in stomatological therapy. Unexpected by the dentist, a violent reaction of hypersensitivity to the preparation which occurred in the patient, led to making the wrong decision about the necessity of tooth extraction.

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SUMMARY

Symptoms of adversary drug action in the area of the oral cavity can appear both after drugs administered generally and the ones administered locally. The whole picture of allergic reactions is constituted by several clinical symptoms, some of which are difficult to distinguish from the symptoms of toxic reactions. Among local damage in the oral cavity caused by preparations used

in stomatologic practice there happens to take place damage inflicted by caustic action of chemical substances, and tissue damage which is the result of congenital hypersensitivity (idiosyncrasy) or acquired allergy. The presented case shows the possibility of occurrence of a violent local allergic reaction to Metronidazole ointment.

STRESZCZENIE

Objawy niepożądanych działań leków w obrębie jamy ustnej mogą ujawnić się zarówno po lekach podanych ogólnie, jak i stosowanych miejscowo. Na obraz reakcji alergicznych błony śluzowej jamy ustnej składa się szereg objawów klinicznych, niektóre z nich są trudne do odróżnienia od objawów reakcji toksycznych. Wśród uszkodzeń miejscowych w jamie ustnej, spowodowanych preparatami wykorzystywanymi w praktyce stomatologicznej, zdarzają się uszkodzenia wywołane żrącym działaniem środków chemicznych oraz uszkodzenia tkanek będące skutkiem nadwrażliwości wrodzonej (idiosynkrazja) lub uczulenia nabytego. Przedstawiony przypadek ukazuje możliwość wystąpienia gwałtownej miejscowej reakcji alergicznej na maść Metronidazol.