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Acute candidiasis of the oro- and hypopharynx as the result of topical intranasal steroids administration*

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SUMMARY

Topical nasal steroids have become increasingly popular for the treatment of allergic and other types of rhinitis. However, undesirable local effects of intranasal steroids, such as nasal irritation and burning, crusting and epistaxis are quite common. Candidiasis of the pharyngeal mucosa is a complication, which has not been described so far after treatment of rhinitis with intranasal topical corticosteroids.

Between March 1997 and September 1998, we managed to treat successfully three patients with acute erythematous candidiasis of the pharynx, which was the result of the use of intranasal topical steroids. Mechanism, clinical features of acute pharyngeal candidiasis, differential diagnosis and treatment are discussed.

Key words: acute pharyngeal candidiasis, complication, intranasal steroids, nasal allergy

INTRODUCTION

Corticosteroids have become increasingly more commonly used in the therapy of various nasal disorders including allergic rhinitis, vasomotor rhinitis, rebound rhinitis and rhinitis during pregnancy (Mabry, 1989). These therapeutic agents can be administered either systemically or intranasally. Systemic administration of corticosteroids is generally oral or intramuscular (as repository preparations). Intranasal treatment may be by intraturbinal or endopolypoid injection of corticosteroids or more commonly, by the application of topical nasal sprays or powders.

The systemic effects and complications of systemically administered corticosteroids are numerous and can often be profound. Due to the potential negative side effects of systemically administered corticosteroids, topical nasal steroids have become increasingly popular for the treatment of the allergic, as well as, of other types of rhinitis (Mabry, 1995). Although systemic side effects can occur after the application of topical intranasal steroids, being absorbed from the nasal mucosa and gastrointestinal tract (after swallowing), this occurs extremely rare with the newer intranasal steroids at normal doses.

More common than the systemic are the local side effects of intranasal steroid application. They include nasal irritation and burning, crusting, epistaxis and in some cases septal perforation (Mabry, 1992). Oropharyngeal candidiasis is mainly associated with the use of several different topical steroids for the treatment of asthma, but not with the use of intranasal corticosteroids. To our knowledge, no case of pharyngeal candidiasis has been reported so far as a result of long-term use of topical intranasal steroids.

CASE REPORTS

CASE (1): A 37-year-old male physician presented in emergency with a persistent throat pain, radiating to the neck and the ears. Four days earlier, he was examined by an internist who diagnosed acute bacterial pharyngitis and prescribed syrup cefadroxil 500 mg bid. Nevertheless, the throat pain increased considerably until the patient was almost unable to swallow solid foods. The patient reported a history of perennial house dust allergic rhinitis, treated with intranasal beclomethasone for seven months. His medical history showed no evidence of diabetes mellitus. He used no other medication.

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The patient was afebrile. Nasal rigid endoscopy revealed slightly edematous middle turbinates bilaterally. The nasopharynx and the oral cavity were normal without evidence of thrush. The oropharyngeal mucosa was intensely red and flat. Indirect laryngoscopy revealed the same red color of the hypopharyngeal mucosa with accumulation of saliva in the pyriform sinuses bilaterally. The larynx was normal. The palpation of the neck did not show lymph node swelling.
After local anesthesia with viscous Xylocaine 2%, a culture was taken from the posterior pharyngeal wall with a sterile cotton swab. With a metal spatula the same region was scraped. The smear material was applied on two slides. The first was spray-fixed, while the other was air-dried. Both were sent to the laboratory for PAS and Gram staining respectively. The PAS stained slide showed a moderate number of fungal hyphae, while the Gram stained slide was inconclusive. Laboratory tests revealed 8000/mm3 WBC with normal differential, normal erythrocyte sedimentation rate (ESR) and no hyperglycemia.
Based on the PAS stained slide, the working diagnosis of candidiasis was established. The patient was started on miconazole oral gel 2.5 ml qid for fifteen days and he was advised to stop taking the nasal spray and antibiotics. The patient had a remarkable improvement of his symptoms within two days. The culture report confirmed the diagnosis of oro-hypopharyngeal candidiasis. Follow-up examination after four weeks was normal. A new culture taken at this time was negative.

CASE (2): A 55-year-old woman presented in emergency with progressively increasing throat pain and difficulty swallowing. Her medical history showed vasomotor rhinitis (eosinophilic intrinsic) treated with nasal spray budesonide during one year. She was not known to have diabetes mellitus or any other systemic disease. Two days earlier she was examined by her general practitioner and the diagnosis of acute bacterial pharyngitis was made. She was prescribed syrup cefaclor 500 mg tid. The examination of the head and neck region was normal, except for an intensely red oro-hypopharyngeal mucosa. Swab for cultures, a smear for direct examination and standard laboratory tests including serum glucose were obtained. The smear was positive for fungal hyphae, while laboratory values were normal. The diagnosis of candidiasis was made and confirmed one week later by the positive results of the culture. Treatment with clotrimazole oral troche 10 mg five times per day was prescribed for two weeks. Antibiotics and intranasal steroid were stopped. After two days the patient mentioned significant clinical improvement. Follow-up examination after four weeks was unremarkable. A new culture taken at this time was negative.

CASE (3): A 30-year-old man presented with a four days history of generalized throat pain. His medical history was remarkable for perennial hyperplastic rhinitis of unknown origin, treated with beclomethasone nasal spray bid for 18 months. The head and neck examination was normal, except a severe redness of the oro-hypopharyngeal mucosa and a slight edema of the uvula and the tonsils. A rapid strept test was negative. A smear for direct examination and standard laboratory tests were obtained. The smear was positive for fungal hyphae. The laboratory values were normal. The patient was started on miconazole oral gel 2.5 ml qid for two weeks, while the nasal spray was discontinued and a better evaluation of his nose disease was recommended. During his follow-up examination 3 weeks later, the patient mentioned rapid improvement of his symptomatology, while the physical examination and the direct examination of the smear were negative.

DISCUSSION

Every steroid available for intranasal topical administration is partially absorbed from the nasal mucosa and from the gastrointestinal tract after swallowing, potentially causing (rarely) systemic side effects, especially if guidelines for administration are exceeded over a prolonged period (Mabry, 1992). Moreover, the local side effects are more common than the systemic (Mabry, 1995). With this case report, we would like to add pharyngeal candidiasis as a result of the use of topical intranasal corticosteroids, as a new entity, to the aforementioned list of side effects. The exact mechanism of action of locally applied corticosteroids is not clearly defined, although it seems that corticosteroids produce anti-inflammatory, immunosuppressive and antimitogenic effects (Kragballe, 1989). Perhaps this immunosuppression may induce a local impairment in the defense mechanisms of the pharyngeal mucosa, making it more vulnerable to candida albicans infections (Milne and Crompton, 1974). Candida albicans is part of the flora of the oral cavity or oropharynx in 30-40% of normal individuals (Cowan and Hibbert, 1997). Pharyngeal candidiasis may be asymptomatic (acute pseudomembranous form) or may give rise to severe pain with dysphagia (acute erythematous form). Clinically, it gives rise to small white patches or to more generalized red lesions and/or slight congestion. Diagnostic confirmation can be obtained by culturing the offending microorganism, preparing a fungal smear or even by incisional biopsy. Pharyngeal candidiasis (erythematous form) must be differentiated from acute viral and bacterial pharyngeal infections, mucous patches of syphilis, gonorrheal pharyngitis, drug reactions and thermal burns. Red lesions caused by erosive lichen planus, discoid lupus erythematosus or mild erythema multiform isolated to the pharyngeal mucosa are extremely rare. Treatment of pharyngeal candidiasis can be local (usually), systemic or in combination. Attention must be paid to the predisposing condition.
So far, no other case of pharyngeal candidiasis has been reported in the English literature after intranasal corticosteroid application. We believe that the diagnosis of candidal pharyngitis was properly established in our three patients by the significant clinical improvement after the administration of the antifungal treatment, by the positive cultures (case 1 and 2) and by the positive findings on PAS smears. The patients had no significant medical history and they all used nasal steroid sprays for a long time. No systemic or other local predisposing factors were found during the investigation. The following mechanism may explain the pharyngeal candidiasis in our patients: a portion of the intranasally administered steroids is transported by the mucociliary beat to the pharynx. After swallowing, candida fun-

gi from the oral cavity come in contact with the pharyngeal mucosa, which has become vulnerable due to local immunosuppression caused by the intranasal steroid. In case the patient is treated with an antibiotic, the aggressiveness of the fungus increases concomitantly with an increased chance of symptomatic infection.

Previous studies in patients using oral aerosol steroid for the treatment of asthma, advocate that vigorous rinsing of the mouth immediately after each steroid treatment can keep the frequency of the candidiasis of the oral and oropharyngeal mucosa very low (Chatterjee, 1977; Klein et al., 1977). Rinsing the mouth and hypopharynx with water could also prevent pharyngeal candidiasis caused by the use of topical nasal steroids. Although the rate of clearance of the nasal mucosa varies in a wide range in normal persons, the saccharin test shows that the transport time (from the head of the inferior turbinate to the oropharynx) is less than thirty minutes in most individuals. Therefore, rinsing the mouth and hypopharynx (by swallowing) with water thirty minutes after each intranasal steroid treatment to clean the fraction of spray that reaches the pharynx might work preventive for pharyngeal candidiases. In case of pharyneal candidiasis, we recommend local treatment with antifungal agents and temporary discontinuation of the intranasal steroids. If persistent or recurrent candidiasis is noted, an extensive work-up for underlying immunodeficiency must be proceeded. In conclusion, we reported the cases of three patients with oro-hypopharyngeal candidiasis as a complication of the extensive use of intranasal topical steroids and point out that the diagnosis of this clinical entity can be overlooked in daily practice.

REFERENCES

1. Chatterjee SS (1977) Experience with the use of a corticosteroid aerosol. Br J Clin Pharmacol 4 (Suppl 3):255S-257S.
2. Cowan DL, Hibbert J (1997) Acute and chronic infection of the pharynx and tonsils. In: Hibbert J (ed.) Scott-Browns Otolaryngology. 6th ed., Butterworth Heineman, London, vol.5, p. 4; 13.
3. Klein R, Waldman D, Kershnar H, Berger W, Coulson A, Katz RM, Rachelefsky GS, Siegel SC (1977) Treatment of chronic childhood asthma with beclomethasone diproprionate aerosol: I. A double-blind crossover trial in nonsteroid-dependent patients. Pediatrics 60:7-13.
4. Kragballe K (1989) Topical corticosteroids: Mechanisms of action. Acta Derm Venereol Suppl (Stockh) 151:7-10.
5. Mabry RL (1989) Corticosteroids in Otolaryngology: Nasal aerosols. Otolaryngol Head Neck Surg 100:636-637.
6. Mabry RL (1992) Corticosteroids in the management of upper respiratory allergy: The emerging role of steroid nasal sprays. Otolaryngol Head Neck Surg 107:855-859.
7. Mabry RL (1995) Pharmacotherapy of allergic rhinitis: Corticosteroids. Otolaryngol Head Neck Surg 113:120-125.
8. Milne LJ, Crompton GK (1974) Beclomethasone dipropionate and oropharyngeal candidiasis. Br Med J 28:797-798.

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