

CLINICAL CASES

Anaphylactic reactions after therapeutic injection of mistletoe (*Viscum album L.*)

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SUMMARY

Mistletoe (*Viscum album*) is a plant that is semi-parasitic of several trees: apple, oak, pine trees, etc. Because of the probable cytolytic action of one of the leaf's most abundant composites, in some countries mistletoe is used as a complementary medicine. Although only a few adverse reactions have been noted (cephalea, fever), cases of anaphylactic shock have been described. We present three cases of severe reaction after injection of mistletoe extract. Two of the patients had cancer. The third, whose brother had cancer, used the plant for preventive purposes. We discuss the danger of possible severe reactions due to the use of products employed in so-called alternative therapies.

Key words: *Viscum album*. Mistletoe. Cancer. Alternative therapies. Anaphylaxis.

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INTRODUCTION

Mistletoe (*Viscum album L.*) is a semi-parasitic plant belonging to the viscaceae family, which has been used in phytotherapy since antiquity. Since the study of Rudolf Steiner in 1920, it has been recommended in the treatment of malignant tumors. Reports of possible side effects of viscum therapy are scarce. Here we report 3 cases of anaphylactic reactions to *Viscum album L.* (Laboratories Weleda, Huningue, France) in which clinical evaluation and skin prick test (SPT) suggest an IgE mediated hypersensitivity reaction.

Case 1

A non-atopic 44-year-old man, whose brother had cancer, underwent *Viscum* therapy because of his fear of developing cancer in himself. Following initial injections, he developed a local erythematous reaction, which gradually became locoregional with subsequent injections. After 3 injections of 1 mg of *Viscum album quercus*, a dose of 10 mg was administered. Within 5 minutes, the patient developed a severe systemic reaction in the form of hypotension (systolic blood pressure 60), urticaria and loss of consciousness. He was admitted to the intensive care unit and treated by intravenous fluids and corticosteroids.

No diagnostic skin tests were performed.

Case 2

A 70-year-old non-atopic woman underwent hysterectomy in 1991 for an adenocarcinoma of the uterus. The surgery was followed by a course of *Viscum* therapy without any side effect.

In 1997, a loco-regional relapse of her cancer was treated first surgically and then by chemotherapy and viscumtherapy. Injection of *Viscum album* was immediately followed by an inflammatory reaction, which lasted three days.

After a break of one week following the first three weeks of treatment, the 25th dose (1 ml at 0.1 mg/ml dilution) was injected. Within 5 minutes she developed generalized urticaria, hypotension (60/40 mmHg) and brief loss of consciousness. She was treated with intramuscular corticosteroids (betamethasone 8 mg) and intravenous epinephrine (0.3 mg). She recovered promptly and was observed in the intensive

care unit for the next 24 hours. No further therapy was administered. Allergy work-up was performed one month later. Skin prick tests (SPT) to common aeroallergens, latex and *Viscum album* at 1/10th dilution and pure, were negative. Intradermal test (ID) to 1/10th dilution *Viscum album* was strongly positive with a mean wheal diameter of 13 mm and was followed within 5 minutes by generalized pruritus, pharyngeal edema, and malaise without hypotension.

Case 3

A 42-year non-atopic man was treated by *Viscum album quercus* for multiple sclerosis. Immediately after injection of a maintenance dose of 10 mg, he developed generalized pruritus, facial edema, asthma and moderate hypotension. Skin prick-tests at the offending concentrations were positive, while they were negative in healthy volunteers.

BOTANICAL DATA

Mistletoe (*Viscum album L.*) is a common semi-parasitic plant, which grows on several varieties of trees: apple, pine, oak, etc., all over the world. It forms a tuft, which may reach one meter in diameter. Fruits are white berries; the non-deciduous leaves are used in the preparation of therapeutic extracts.

VISCUM ALBUM IN THERAPY

Mistletoe has been used in the treatment of several diseases since antiquity: Plinius mentioned its use in mental affections, to promote pregnancy and to cure every illness as an *omnia sanans* (1). Later Hippocrates and Arabian physicians applied mistletoe in the cases of epilepsy, edema, and splenic disease (2). In 1920, Rudolf Steiner, the father of anthroposophical medicine, first proposed the use of mistletoe extract in cancer therapy (3). Since then it has been widely used in the treatment of malignant diseases, especially in Germany and Switzerland. It was believed that the cytotoxic effect of mistletoe was due to a non-specific cell necrosis. Mistletoe extract is now known to contain several lectins, which have a cytotoxic, and an immunostimulating action (4).

One ml *Viscum album* extract mixed with metallic adjuvant is injected daily subcutaneously in the vicinity of the tumor in gradually increasing concentrations during a week. This sequence is repeated for the next two to three weeks. After a gap of one

week the cycle may be repeated and administration of further cycles is at the physician's discretion.

VISCUM THERAPY-SIDE EFFECTS

Viscumtherapy is usually considered as a relatively safe treatment and reports of adverse reactions are scarce. However, the drug commission of the German Medical Profession cites 79 cases of adverse reactions following mistletoe injections between 1976 and 1990 they ranged from moderate one such as headache or fever, to severe allergic reactions including anaphylactic shock (5).

The mechanism of serious adverse systemic reaction after mistletoe extract injections remains unknown. Our 3 cases with immediate anaphylactic type reactions with positive skin tests in 2 of them suggest an allergic mechanism. In the literature we have been able to find only two documented observations of systemic reactions:

- One case of generalized urticaria and angioedema in which intradermal test was positive (6).
- One case of urticaria and collapse in which intradermal skin test was negative but lymphoblastic transformation test was positive (7).

CONCLUSION

Though severe anaphylactic following *Viscum album* injections are rare, one should be aware of them. It should be kept in mind that viscumtherapy as well as other alternative therapies are not always free from adverse reactions, although they are frequently promoted in that way.

RESUMEN

El Mistletoe (*Viscum album*) (muérdago o visco blanco) es una planta semiparásita de algunos árboles: manzano, roble, pino, etc., que por la probable acción citotóxica de algún compuesto más abundante en las hojas, se emplea en algunos países en el tratamiento del cáncer como medicación complementaria. Aunque se han observado pocas reacciones adversas (cefalea, fiebre) se han descrito casos de choque anafiláctico. En este trabajo se presentan tres casos de reacción grave, tras la inyección de un extracto de la planta. Dos pacientes padecían cáncer y otro empleó el producto por prevención por el

hecho de que un hermano padecía cáncer. Se advierte de las posibles reacciones graves por el uso de productos utilizados en las llamadas terapias alternativas.

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