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## Allergic contact dermatitis in child with odontoiatric face-mask

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### KEY WORDS

*Nichel sulphate; contact dermatitis; odontoiatric device*

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We report the case of an interesting odontoiatric 12 years old patient with nickel sulphate and fragrance mix allergy.

He presented to our department for erythematous papular itchy lesions, localized in the perioral region, arisen one year after the application of a particular dental appliance: adjustable dynamic protraction facemask-Ormco-Sybron dental specialties (**figure 1A, 1B, 1C**), with progressive worsening of the clinical picture, despite topical application of corticosteroids.

We executed patch test with standard series SIDAPA, official standardized series of haptens approved by the Italian Society of Professional and Environmental Allergic Dermatology (acronym for Società Italiana di Dermatologia Allergologica Professionale e Ambientale) carried out with F.I.R.M.A. support.

We applied on the back of the patient (by a single operator, A. Tammaro) two patches containing the following haptens: Potassium Dichromate; Rosin; Epoxy Resin; Formaldehyde Resin; Euxil 400; Neomycin Sulphate; Fragrance Mix; Nickel Sul-

phate; Mercaptobenzothiazole Paraphenyldiamine; Cobalt Chloride; Balsam of Peru; Thiuram Mix; Benzocaine; Lanolin Alcohols; Parabens; Vaseline; Scattered Yellow; Scattered Blue; Hydroquinone (1).

The patient was asked to do not wash his back and do not take orally corticosteroids and antihistamines.

The patient came back after 48 hours at our clinic: the operator who applied the patches removed them, making the first reading.

The patient returned after 24 hours for the second reading at 72 hours.

The test is positive if the sites of contact with haptens show signs like erythema (+ positive), erythema and vesicles (+ + positive), erythema and vesicles and edema (+ + + positive).

The patch test applied on our patient resulted positive for nickel sulphate (++) and fragrance mix (+). Adjustable dynamic protraction facemask contains nickel sulphate.

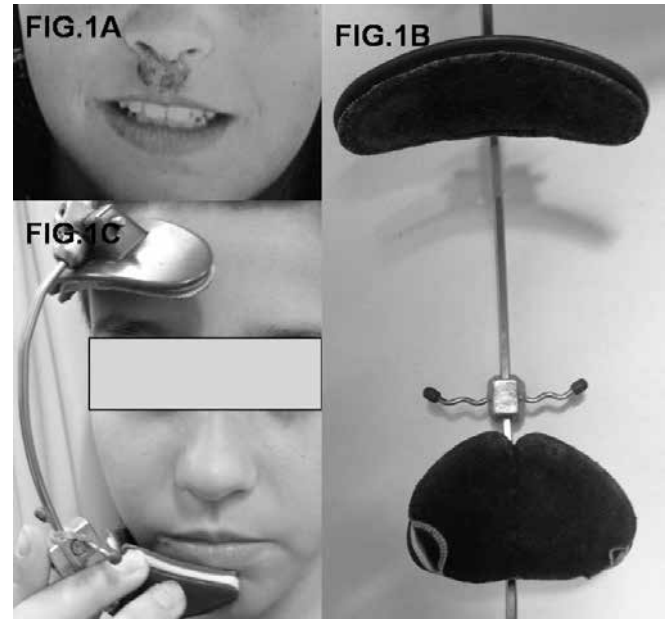
Dental correction by adjustable dynamic protraction facemask occurs by a combination of skeletal and dental changes in both sagittal and vertical dimensions. These changes occur as a result of forward movement of the maxilla, backward and downward rotation of the mandible and proclination of the maxillary incisors. Other odontoiatric-facial changes contributing to class III correction shown to occur with facemask and palatal expansion treatment are downward movement and counter-clockwise rotation of the maxilla, increased convexity in the middle face with forward displacement of orbital and key ridge, increase in maxillary depth and lower facial height, anterior movement of maxillary molars and incisors, decrease in SNB, as well as inferior movement of B-point, pogonion and menton. Soft-tissue changes contributing to increased convexity of the profile are anterior movement of pronasale, subnasale, and labrale superius, as well as inferior movement of the soft-tissue chin. When comparing the contribution of orthopedic and orthodontic effects with facemask and palatal expansion therapy, nearly all investigators attribute the majority of Class III correction to orthopedic movement, with most of the change taking place in the maxilla (2).

The gold standard of treatment consists in wearing the face mask for 18 hours/daily until the age of twelve. Our patient developed skin lesions about 2 years after the application of the device and, after the removal of facial mask, the skin lesions resolved.

Fragrance mix allergy was not related with dental device, in fact the patient showed erythematous papular lesions after the use of products containing fragrance. This data is not relevant to the clinical case reported. It is a clinical accidental data, that we can not actually explain.

We suggest it could be interesting to conduct further studies to investigate the development of allergy to fragrance mix in children, since they are a kind of population usually little exposed to contact with this allergen (3).

**Figure 1A** - Erythematous papular itchy lesions, localized in the perioral region arisen one year after the application of the dental appliance shown in **figure 1B** and **1C**.



## References

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