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Methyl-DOPA causing reversible peripheral facial palsy

Letter to the Editor

Methyl-DOPA is, in addition to beta-blockers, calcium-antagonists, and hydralazine, used as an antihypertensive drug for gestational arterial hypertension [1]. Side effects of methyl-DOPA are numerous but the most frequent according to the leaflet of the manufacturer include hematological, neurological, psychiatric, cardiologic, gastrointestinal, dermal, and muscular abnormalities (Table 1). Though facial palsy has been listed as a side effect of methyl-DOPA in the leaflet of the manufacturer, there is only one report about facial palsy as a side effect of methyl-DOPA in the literature [2]. Here we present a primigravida with gestational hypertension who developed peripheral facial palsy after having received methyl-DOPA prior to onset of the palsy.

The patient is a 31 years old female with an uneventful previous history who developed arterial hypertension in the third trimenon (28th week of gestation) of her first pregnancy. In the 34th week of gestation she received methyl-DOPA (1000 mg/d) and awaked with numbness and weakness of the right face on the third day after starting methyl-DOPA. Since she suspected the drug to have caused the deficit, she discontinued methyl-DOPA by herself on the third day after having taken a total dosage of 2500 mg. She attended the emergency ward and after referral to the neurologist, ophthalmologist, and oto-rhino-laryngologist, she was diagnosed with right-sided peripheral facial palsy and treated with prednisolone initially 100 mg d and lastly 50 mg/d. The previous history was negative for exposition towards a drought, vaccination, infection, malignancy, intoxication, or trauma during the days prior to onset of the deficit. MRI of the brain was normal, search for viral infections, borelliosis, was negative. Nerve conduction studies, 13 days after onset revealed normal latency when recording from the orbicularis oculi muscle but increased latency and reduced amplitude when recording from the right orbicularis oris muscle. A CT scan of the temporal bone was non-informative.

The presented case is interesting for documentation of methyl-DOPA as the most plausible cause of a unilateral peripheral facial palsy after exclusion of various potential causes that could be made responsible for the deficit. Discontinuation of the drug and application of prednisolone during 11 days resulted in almost complete recovery of the lesion 13 days after onset (Fig. 1). Side effects of methyl-DOPA so far reported are manifold and concern various different organs (Table 1). Neurological side effects of methyl-DOPA include exacerbation of Parkinson syndrome [3,4], headache, sedation, dizziness, sleep disturbance, paresthesias, choreoathetosis, attention deficit disorder, reduced reaction time, depression. and stroke (Table 1) [5–7]. Cerebral side effects may occur since studies indicated that methyl-DOPA also penetrates the blood-brain barrier, where it is converted into alpha-methyl-norepinephrine. An explanation why methyl-DOPA caused peripheral facial palsy could be the observation that levodopa/carbidopa, compounds similar to methyl-DOPA, cause peripheral neuropathy in one fifth of the treated Parkinson patients. Causative factors could be vitamin-B deficiency or levodopa related hyperhomocysteinemia. Intra-duodenal levodopa may cause malnutrition and secondarily neuropathy. Other potential causes of a peripheral facial palsy were excluded.

Overall, this case provides novel information about the side-effect spectrum of methyl-DOPA, showing that the compound may cause reversible peripheral facial nerve palsy. Whether nerve palsy occurs only after methyl-DOPA during pregnancy or also without pregnancy, remains speculative.

Table 1
Side effects of alpha-methyl DOPA.

Side effect	Indication	Reference
Brain		
Dissiness, sedation	Hypertension	[Lawson 1978, Carr 1982]
Headache	Hypertension	[Carr 1982]
Sleep disturbance	Hypertension	[Carr 1982]
Extrapyramidal signs	Hypertension	[Lawson 1978]
Depression	Hypertension	[Lawson 1978]
Stroke	Hypertension	[Uetsuka 1984]
Exacerbation of Parkinsonism	Hypertension	[Rosenblum 1980]
Heart		
Asystole after atropine	Gestosis	[Abalos 2018]
Edema	Hypertension	[Carr 1982]
Sinus bradycardia	Hypertension	[Lawson 1978]
Arterial hypotension	Hypertension	[Lawson 1978]
Muscle		
Fatigue, muscle weakness	Hypertension	[Carr 1982]
Muscle cramps, myalgia	Hypertension	[Carr 1982]
Gastrointestinal		
Hepatopathy	Gestosis	[Lawson 1978, Ali 2009]
Liver cirrhosis	Hypertension	[Shashaty 1979]
Gastrointestinal upsets	Hypertension	[Lawson 1978]
Acute toxic hepatitis	Hypertension	[Fernández-Marcote Menor 2005]
Endocrine		
Impotence	Hypertension	[Lawson 1978, Carr 1982]
Weight gain	Hypertension	[Carr 1982]
Galactorrhoea	Hypertension	[Vaidya 1970, Arze 1981]
Amenorrhoea	Hypertension	[Arze 1981]
Hyperprolactinemia	Hypertension	[Arze 1981]
Blood		
Hemolytic anemia	Hypertension	[Lawson 1978]
Skin		
Exanthema	Hypertension	[Bergstrand 1976]
Other		
Fever	Hypertension	[Lawson 1978, Tallgren 1969]
Nasal stuffiness, dry mouth	Hypertension	[Carr 1982]
Pigmentation of cartilage	nm	[Rausing 1984]

Nm: not mentioned.

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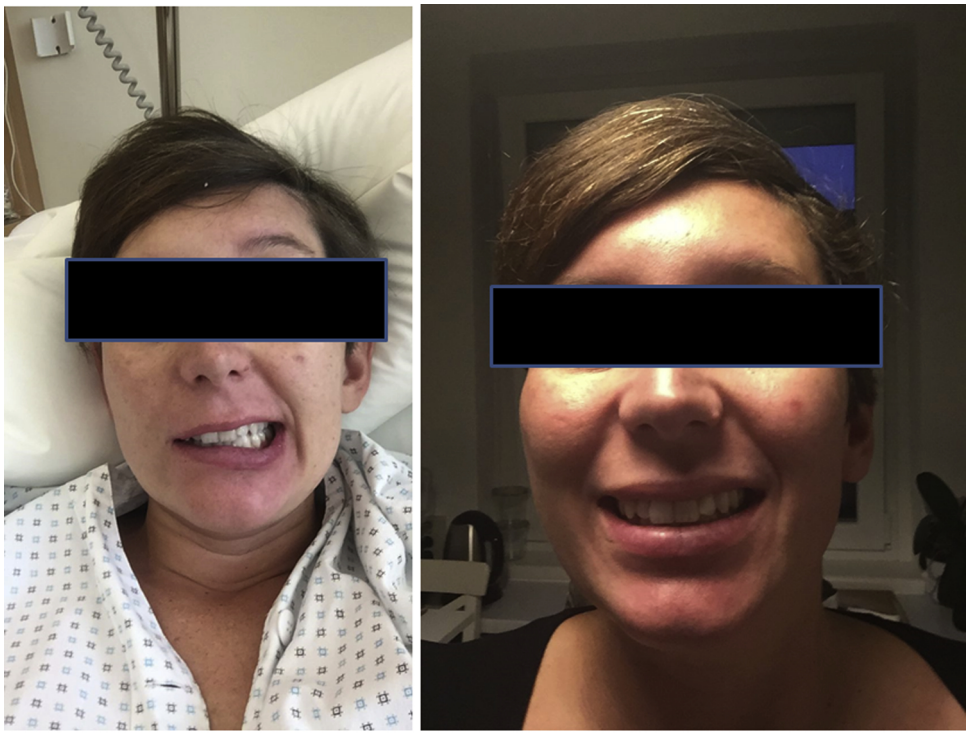

Fig. 1. Index case showing peripheral facial palsy on the right side 1day after onset (left) and almost complete resolution 12d after onset (right). The patient had taken methyl-DOPA (1000 mg/d) during 3d prior to the onset of the palsy.

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Conflict of interest

The author has nothing to declare.

Ethical approval

All procedures performed were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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