

S58. Mercury Exposure in Dentists: Three case reports

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OBJECTIVE

Inorganic mercury is widely used in amalgams. Thus, dentists are chronically exposed to inorganic mercury. Chronic effects of mercury are mainly on central nervous system. Memory and concentration deficits, sleep and mood disturbances are commonly notified symptoms. We are reporting three dentists presenting with neurological findings of mercury intoxication.

CASE 1

A 42 years-old man has been admitted to occupational health outpatient clinic with motor retardation and mood disturbances. He had been working as a dentist and handling with amalgams for nineteen years. On neurological physical examination intensional tremor was detected. Mercury levels in 24-hour urine testing were 44,2 µg/L (normal values <15 µg/L). Chelation therapy with DMPS was started, thereby declining Mercury to normal values. Neurological symptoms recovered and he was discharged.

CASE 2

A 43 years-old woman has been admitted with memory deficit and leg contractions. She had been working as a dentist for eighteen years and using amalgam alloys for filling. MRI scan of brain revealed atrophic changes and partially empty sella. Spot urine mercury level was 10.2 µg/L (normal value <10 µg/L). Substitution with composite fillings instead of amalgam fillings was recommended.

CASE 3

A 42 years-old woman has been admitted to occupational health outpatient clinic with memory deficit, distractibility, and extremity tremors. She had been handling with amalgam alloys for eighteen years as a dentist. Neurological examination revealed right-sided postural tremor. MRI scan of brain revealed mild atrophic changes. Spot urine mercury level was 8.3 µg/L (normal value <10 µg/L). After challenge test with DMPS, spot urine mercury raised to 15 µg/L. Chelation therapy with DMPS was started. By the end of 6 months, spot urine mercury level declined and neurological findings recovered.

RESULTS

Dentists are exposed to heavy metals through handling orthodontic materials. Dentists referred with neuropsychiatric problems should be evaluated for mercury intoxication and mercury levels should be examined in biological specimens. There is no known safe level and no limit to the effect of the mercury occurrence as understood from this case. Use of materials alternative to amalgam; proper ventilation in workplace; and use of personal protective equipments may mitigate hazardous effects of toxic materials.