



Middle East pain syndrome as a mixture of various chronic diseases

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Implication for health policy/practice/research/medical education

Middle East pain syndrome is a novel disease, which requires more knowledge on its pathogenesis, prevention, and treatment. Possible cadmium contamination should also be considered. Notably, symptoms of this syndrome improved by fibromyalgia therapy consisting of muscle relaxants and vitamin D3 supplementation, and other related drugs. Therefore, we suggest more attention to this syndrome, in patients with various complaints as mentioned above.

Keywords: Middle East pain syndrome, Vitamin D3, Cadmium

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Recently, several cases of bilateral hand and wrist arthritis accompanied by fibromyalgia and low-serum vitamin D3 were described (1). This condition is associated with elevated serum concentrations of parathormone in some cases. Previous authors called this syndrome middle east pain syndrome (MEPS), that previously misdiagnosed as rheumatoid arthritis (RA), either seronegative or seropositive RA which does not respond appropriately to treatments including non-steroidal anti-inflammatory drugs, and disease-modifying anti-rheumatic drugs ensuing to failure to the treatment of long-term pain. The authors who are in charge of this syndrome found the patients did not achieve any criteria for RA diagnosis as well. More detail of this study showed abnormal serum parathormone in 75% of cases, without parathyroid gland morphology, along with sub-chondral and sub-periosteal desorption of mostly thumbs, with sub-chondral osteopenia of sub-chondral area of proximal and middle phalanges (1). Moreover, mild sub-periosteal resorption across the radial part of the middle phalanx is in association with mild tuft erosions. However, the changes in the carpus strongly resemble RA bone changes like radio-carpal and scapho-trapezoid joint arthritis and ulnar styloid resorption. Moreover, the presence of tuft spur-like excrescences was noted too. The etiology of secondary hyperparathyroidism is interpreted as a result of low- serum vitamin D3 concentration, which is not related to kidney disease, or other causing factors. They also regarded that chronic vitamin D3 insufficiency or

deficiency might be due to unhealthy food habits and pollutants, like exposure to various heavy metals like lead or cadmium, which are present in some fizzy waters, mineral waters, fried snacks, or tobacco smoke (1).

In MEPS, secondary hyperparathyroidism is the result of hypo-calcemia or low vitamin D intake or due to renal inability to convert adequate vitamin D2 to vitamin D3 as the active form. Hypo-calcemia also causes parathyroid hormone (PTH) secretion rises to increase plasma calcium levels. Both chronic vitamin D deficiency and increased PTH due to secondary hyperparathyroidism may also have some renal impact. Chronic PTH excess has various hemodynamic effects. A preliminary transient kidney acidosis established on the first day of parathormone infusion, continued by a rapid rise in net acid excretion and plasma HCO₃⁻ to provide mild metabolic alkalosis was showed in a previous study (2). It seems that the alkalosis is at least partly mediated by kidney mechanisms; since the kidney acidosis in clinical circumstances of primary hyperparathyroidism is not contributed to either direct or indirect effects of parathormone excess when existing for a two-week. This is a period, which is appropriate to re-start a new balanced state of the kidney and systemic acid-base equilibrium (2). Previous studies also showed that, chronic continuous PTH infusion leads to high blood pressure in normal individuals (3). The etiology of hypertension in primary hyperparathyroidism comprises raised plasma renin activity, hypercalcemia, and kidney failure due to nephrocalcinosis. Additionally,

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a systemic and renal magnesium alteration throughout chronic continuous parathormone infusion in normal persons was described (4). Several studies revealed that hypermagnesemia which may be detected following primary hyperparathyroidism ensues from both indirect and direct effects of parathormone excess, which may have not specific complications (5). In general, MEPS is a novel disease, which requires more knowledge on its pathogenesis, prevention, and treatment. Possible cadmium contamination should also be considered. Notably, symptoms of this syndrome improved by fibromyalgia therapy consisting of muscle relaxants and vitamin D3 supplementation, and other related drugs (1). Therefore, we suggest more attention to this syndrome, in patients with various complaints as mentioned above.

Authors' contribution

Conceptualization: HN and MR; Methodology: MR and HM; Validation: HN; Formal Analysis: HN and HM; Research: MR and HN; Resources: YR; Data Curation: MR, HN and HM; Writing—Original Draft Preparation: MR and HN; Writing—Reviewing and Editing: HN and YR; Visualization: HN; Supervision: HN; Project Management: HN.

Conflicts of interest

The authors declare no conflict of interest.

Ethical issues

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