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Images in Dermatology: Chronic Groundwater Arsenic Poisoning: Clin- ical Insights from a Patient from Murshidabad District

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CASE 1

A 50-year-old farmer from Murshidabad, presented with numerous hyperpigmented and hypopigmented areas particularly affecting the trunk, neck, and limbs. Thickened skin lesions, including papules and plaques were seen on palm and soles. Systemic examination showed mild hepatomegaly confirmed on ultrasonography. Laboratory investigation revealed mild anemia and a normal differential count. Liver Function Tests were slightly deranged. Since Murshidabad is one of the districts affected by arsenic contamination of groundwater, a differential diagnosis of chronic arsenicosis was made based on the clinical presentations. A skin biopsy revealed hyperkeratosis, parakeratosis, dyskeratosis, basal cell degeneration, and melanin incontinence and dense lymphocytic infiltrate in dermoepidermal junction, suggestive of arsenical keratosis.

In addition, analysis of drinking water from the tube well used by the patient and family members revealed arsenic concentration of 0.08 mg/L in drinking water (WHO permissible limit = 0.01 mg/L). Arsenic levels in patients' hair and nails were 0.9 µg/gm (permissible limit = 0.8 µg/gm) and 1.4 µg/gm (permissible limit=1.3 µg/gm) respectively.

Therefore, a final diagnosis of chronic arsenic poisoning (arsenicosis) was confirmed, based on clinical signs, biopsy findings, history of groundwater consumption, and findings of high arsenic levels in the water supply.

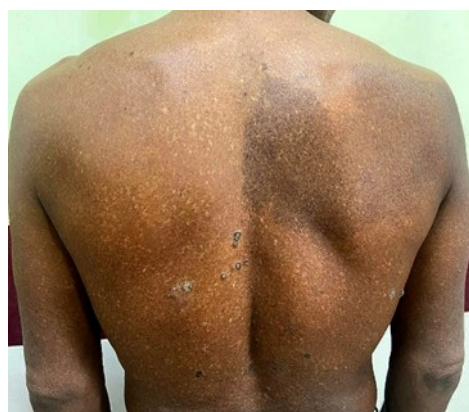


Figure 1: Raindrop pigmentation over back



Figure 2: Palmar hyperkeratosis



Figure 3: Raindrop pigmentation and arsenical keratosis over chest

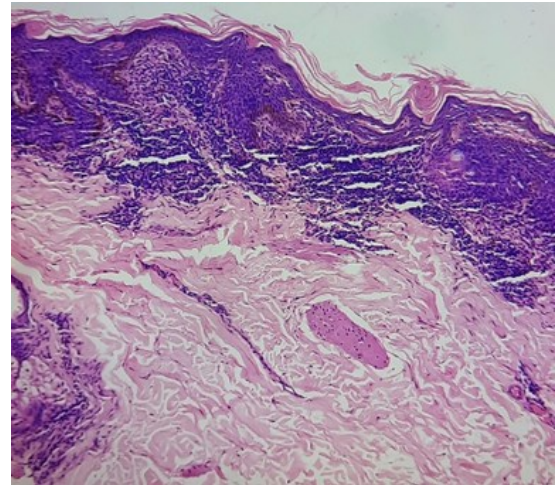


Figure 4: Histopathological image shows arsenical keratosis

Declaration of patient consent:

Appropriate patient consent was obtained by the authors for taking and sharing pictures.