

Epidemic Dropsy in a Single Joint Family in Uttar Pradesh: A Case Report

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Abstract

Dropsy is due to consumption of mustard oil contaminated with argemone oil. It usually occurs in epidemic outbreaks with acute manifestation of bilateral pitting edema, erythema, and local tenderness along with cardiac and respiratory problems in severe cases leading to death. We report an outbreak in a single joint family with major manifestation of bilateral pitting edema, erythema, and local tenderness in seven family members. Reported case was having serious clinical manifestation involving cardiac and respiratory systems. The diagnosis of epidemic dropsy should be strongly suspected if there is repeated clustering of bilateral pedal edema cases within a single family, especially in an area consuming mustard oil.

Keywords: Epidemic dropsy; Argemone oil; Bilateral Pedal Edema; Mustard oil.

Introduction

Epidemic dropsy results from ingestion of edible oil (mustard oil) adulterated with Argemone oil [1]. It is an acute non-infectious disease characterized by pitting edema of the extremities, especially of the lower limbs; cutaneous erythema; local tenderness, vomiting, watery diarrhea, and glaucoma [2,3,4]. Dihydrosanguinarine (87%) & Sanguinarine (5%), are responsible for symptoms, Sanguinarine has been shown to produce widespread capillary dilatation coupled with increased capillary permeability, leading to edema and high cardiac

output failure [1]. Diagnosis must be considered during an outbreak of bilaterally symmetric edema in more than one member of a family or community consuming mustard oil, hypoalbuminemia with normal urinalysis, raised plasma pyruvate levels [1]. Withdrawal of the contaminated cooking oil is the most important initial step in treatment, Bed rest with leg elevation and a protein-rich diet and supplementation of calcium, antioxidants (vitamin C and E) and thiamine and other vitamin B complex are commonly used. We report a sporadic case of dropsy in single Family, presenting with high output cardiac failure.

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Case Report

Eleven (11) years male child presented with swelling of whole body (starting from feet) from last 12 days, cough and fever for last 3 days and breathlessness for one day. On physical examination, child had bounding pulse, tachypnea, tachycardia, severe pallor, sub-conjunctival hemorrhage, bilateral pitting edema, cutaneous telangiectasia with red erythematous macules. Juglar Venous Pressure was raised, with pistol shot sounds over femoral & brachial artery and hepatomegaly (5 cm) and cardiac failure. Child clinical condition was progressively deteriorated and involves multi organ dysfunction syndrome (MODS). Laboratory reports showed pancytopenia, acute kidney injury and metabolic acidosis. Seven members of the family were bilateral pitting swelling over legs. All family members consumed mustard oil from a common source, mustard seeds were brought and grinded outside. We managed the child conservatively with frusomide, multivitamin, antioxidant, mechanical ventilation and vasopressors, but child expired at Day seven of admission. One of the sibling had sub-conjunctival hemorrhage (Fig. 1) and bilateral pitting pedal edema, which gradually resolved on discontinuation of mustard oil consumption. Rest of the involved family members had bilateral pitting pedal edema (Fig. 2) which gradually subsided with time. Nitric acid test was done in mustard oil sample, but it was negative (new sample was used and this test is sensitive to a concentration of $>0.25\%$).



Fig. 1: Cutaneous telangiectasia with red erythematous macules in admitted child.



Fig. 2: Conjunctival hemorrhage in sister

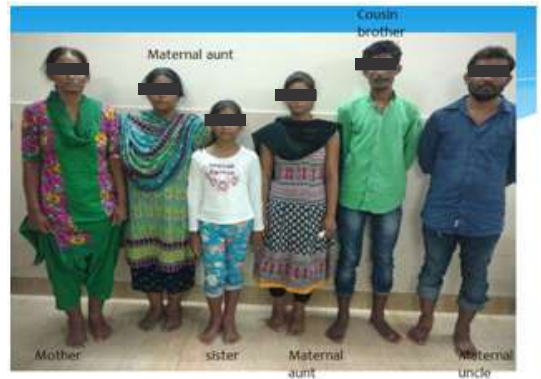


Fig. 3: Family members with pitting pedal edema



Fig. 4: Family members with pitting pedal edema

Discussion

Epidemic dropsy is reported from time to time from states of West Bengal, Bihar, Orissa, Madhya Pradesh, Uttar Pradesh, Gujarat, Maharashtra and Delhi, generally sparing South Indian States where the predominant cooking fat is coconut oil [4,5]. The condition was first reported by Lyon in 1877 from Calcutta [6]. Dropsy is a disease that occurs in epidemics, review of scientific literature could yield only three case studies reporting outbreaks restricted to a single family, although the rest of the outbreaks affected more than one family [7,8]. In this outbreak only clustering of pedal edema was present in all the family members, one child has progressive disease due to multi system involvement and secondary infection, but major problem lies in high output cardiac failure, which was not responded to treatment. The suspicion of

dropsy in index case rests upon identification of clustering of pedal edema within family, which cannot be confirmed by detection of argemone oil in mustard oil used for cooking. Public awareness and education to farmer about argemone maxicana are key intervention to prevent dropy. Hence, the diagnosis of epidemic dropsy should be strongly suspected if there is repeated clustering of bilateral pedal edema cases within a single family, especially in an area consuming mustard oil.

Conclusion

The diagnosis of epidemic dropsy should be strongly suspected if there is repeated clustering of bilateral pedal edema cases within a single family, especially in an area consuming mustard oil. Public awareness about food adulteration act and education to farmer about argemone maxicana are key intervention to prevent dropy.

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