
Histology and histochemical study of the effect of hypervitaminosis A on the choroid plexus

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Forty adult albino rats were utilized in this study. Some were injected with vitamin A either in a single extremely large dose to study the effect of acute hypervitaminosis A or in multiple large doses for 1, 2 and 3 months to show the effect of chronic hypervitaminosis A. Some of these injected animals were left for a period to study the effect of stoppage of vitamin A injection. Some rats were injected with arachis oil. The rest of animals served as control. The choroid plexuses of all animals were studied histologically with haematoxylin and eosin and histochemically for adenosine triphosphatase and carbonic anhydrase enzymes. In the histologic study, vascular dilatation and engorgement were observed in hypervitaminosis A whether acute or chronic. Adenosine triphosphatase and carbonic anhydrase activity increased after injection of vitamin A. The increased activity of both enzymes denotes increased cellular activity of the epithelial covering of the choroid plexus. Increased cellular activity and vascular dilatation and engorgement suggested increased secretion of cerebrospinal fluid after vitamin A injection.⁴⁴ The return of the choroid plexus to the resting state after discontinuation of vitamin A administration confirms its role in increasing production of C.S.F. and in increasing intracranial pressure. The strong enzyme activity occurring with mild vascular dilatation and engorgement in rats affected by acute hypervitaminosis A suggested that the vascular dilatation is an active hyperaemia which occurs when the tissues become metabolically more active as during exercise.