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Lipoblastoma in Infancy

An eight months old child presented with a painless swelling on the dorsum of the left foot for the last 3 months (*Fig, 1*). It had been gradually increasing in size and rapidly so for the last one month. There was no other similar swelling elsewhere in the body. Regional lymphnodes were not enlarged. Fine needle aspiration cytology was suggestive of lipoma. Plain radiograph of the foot did not reveal any calcification or bony involvement. At surgery, a well circumscribed lipomatous lesion of the foot encasing the tendons was found. Histopathology was suggestive of lipoblastoma.

Lipoblastoma is a relatively rare tumor that occurs in infancy and early childhood and arises from embryonic white fat. The most common symptom is a painless mass with or without increasing size. The trunk, extremities, head and neck, retroperitoneum, inguinal canal, peritoneal cavity, and lung are the common tumor sites. Histopathologic examination shows a cellular neoplasm composed of immature adipocytes with relatively well-defined septa, frequent lipoblasts and a fine vascular network.



Fig. 1. Clinical photograph showing lipoblastoma of the left foot.

Lipoblastomas are circumscribed while lipoblastomatosis is diffuse and infiltrative. It is important to completely excise the tumor to avoid leaving residual tumor and to prevent recurrences which mostly occur within 2 years. Confusion with myxoid liposarcoma, well-differentiated liposarcoma, and typical lipomas may occur.

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Wheat Grass Juice in Thalassemia

The recent communication(1) and the article(2) about beneficial effects of wheat grass juice (WGJ) in thalassemia patients were interesting. The possible explanation for beneficial effect of wheat grass juice (WGJ) in thalassemia could be as follows:

Taking a look at heme synthesis, it takes place partially in mitochondria and partially in cytosol. The 1st step in hemesynthesis—condensation of succinyl CoA and glycine to form Δ aminolevulinic acid—is the rate-limiting step. Hence, synthesis of heme can occur at a limited rate. Iron gets incorporated in protoporphyrin in the final step only(3).

Comparing chemical structure of chlorophyll and heme(4), we find that they have strikingly similar structure each having 4 pyrrole rings, with some differences in side attachments, and at centre, there is iron in heme and magnesium in chlorophyll. Considering kinetics of iron absorption, it is known that heme iron is absorbed much better than any other form(5), and hence perhaps chlorophyll also. Considering all these facts together, it is possible that when we give wheat grass juice to patients of thalassemia.

Chlorophyll (being structurally similar to heme), gets absorbed rapidly and to a large extent. At cellular level (in bone marrow), the cells get almost a “readymade” molecule, which after few changes, can be converted to heme. Thus heme production occurs faster.

Since heme production occurs faster, globin chains combine with it and form less of insoluble inclusion bodies, hence less destruction of RBCs. Thus the RBC life span is prolonged. Perhaps studies with radio-isotope labeled WGJ can help us understand absorption, transport and fate of ingested chlorophyll.

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