Hypertrophic Obstructive Cardiomyopathy in an Infant with Neuroblastoma

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To the Editor: Hypertension (HTN) is associated with around 10% cases of neuroblastoma (NB). Cardiomyopathy associated with NB is generally dilated cardiomyopathy. Hypertrophic obstructive cardiomyopathy (HOCM) associated with NB is extremely rare and is associated with sudden death [1, 2].

A 5-mo-old male infant, with normal antenatal and perinatal history, presented to a tertiary care hospital with complaints of inconsolable cry and sweating over forehead. He had tachycardia, HTN, grade III ejection systolic murmur, and hepatomegaly. Echocardiography (echo) revealed HOCM, left ventricular outflow tract obstruction (LVOTO) with pressure gradient (PG) - 30/12 mm Hg and dynamic obstruction at right ventricular outflow tract (RVOT) with PG 70 mm Hg. He was started on oral propranolol. At 9 mo of age, in view of HOCM and persistent HTN despite multiple antihypertensive agents, he was referred for opinion of pediatric cardiologist.

At our center, he had paroxysmal HTN, delayed motor milestones, and severe wasting. Chest radiograph showed cardiomegaly. Electrocardiogram revealed left ventricular hypertrophy. Echo was suggestive of nonobstructive hypertrophic cardiomyopathy (HCM) as he was already on therapy with β -blockers. Ultrasonography of the abdomen done in view of persistent HTN showed right suprarenal mass measuring $3.2 \times 4.7 \times 4.2$ cm. Biopsy of the mass revealed undifferentiated neuroblastoma. The tumor did not reveal N-MYC amplification or metastasis. He was started on SIOPEN chemotherapy protocol since surgical excision was not feasible [3]. After the second course of chemotherapy, his HTN settled and more than 90% of tumor was excised. He is on monthly

follow-up with growth and development monitoring, echo and is doing well.

The postulated mechanisms for cardiomyopathy in catecholamine secreting tumors are catecholamine-induced coronary and systemic vasospasm, tachycardia-associated cardiomyopathy, free radical damage, β -adrenergic receptor down-regulation, and damage to sarcolemma due to calcium influx [4]. In the index child, despite a hepatomegaly (which was actually a suprarenal mass) and chronic uncontrolled HTN, USG abdomen was not done at the referring center, leading to delayed diagnosis.

Data Availability On Request.

Declarations

Conflict of Interest None.

Consent for Publication Written informed consent was obtained from the patient's father for publication of clinical details.

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