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Neonatal Giant Hepatic Hemangioma: A Case Report

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Abstract | **Case Report**

nfantile hepatic hemangiomas (IH) represent a rare but important group of benign liver tumors in children. Although often asymptomatic, large or symptomatic hemangiomas can cause severe complications requiring timely therapeutic intervention. Diagnosis relies on advanced imaging modalities such as Doppler ultrasound, CT, and MRI. We report the case of a newborn with a prenatally detected abdominal mass initially suspected to be a cystic lymphangioma. Following treatment with propranolol, a significant reduction in the mass size was observed, leading to the diagnosis of a rapidly involuting congenital hepatic hemangioma (RICH). This case illustrates the efficacy of propranolol in the management of symptomatic hepatic hemangiomas in neonates.

Keywords: Infantile hepatic hemangioma, propranolol, congenital hepatic tumor, neonatal liver mass.

INTRODUCTION

Infantile hepatic hemangiomas (IH) are rare benign vascular tumors that account for approximately 1–5% of pediatric hepatic tumors. These lesions arise from the proliferation of endothelial cells and are frequently asymptomatic. While many IHs undergo spontaneous regression, some—especially large or symptomatic lesions—may lead to life-threatening complications, such as congestive heart failure, hematologic disorders, or hepatic dysfunction. Prompt diagnosis and appropriate management are crucial in such cases.

Diagnosis relies primarily on imaging techniques such as Doppler ultrasound, computed tomography (CT), and magnetic resonance imaging (MRI), which help to assess lesion characteristics and rule out malignancy. Differential diagnosis includes malignant hepatic tumors (e.g., hepatoblastoma), cystic lymphangiomas, and congenital neuroblastomas. Hemangiomas are classified into two main types: infantile hemangiomas (which appear postnatally and involute gradually) and congenital hemangiomas (present at birth), which may be rapidly involuting (RICH) or non-involuting (NICH).

Management strategies vary depending on lesion size, location, and symptomatology. Propranolol has emerged as a first-line treatment, especially for symptomatic or complicated cases.

CASE REPORT

We report the case of a male neonate referred to our institution on day 3 of life for evaluation of an abdominal mass identified on prenatal ultrasound. The mother, a 25-year-old primigravida, delivered via cesarean section due to acute fetal distress. Apgar scores were 4 at 1 minute and 6 at 5 minutes. Initial postnatal adaptation was poor, with transient respiratory distress.

On admission, the neonate was hemodynamically stable. Clinical examination revealed a distended abdomen with hepatomegaly. The liver span measured 13 cm. No skin lesions or lumbar tenderness were noted.

Abdominal ultrasound showed a large retroperitoneal mass located in the midline, measuring 83 × 53 × 99 mm. It had lobulated contours, a heterogeneous echotexture, vascular lakes, and necrotic areas. The mass compressed liver segments I, III, IV, V, VI, VII, and VIII, displacing the right kidney and enveloping the major hepatic vessels, which remained patent.

Laboratory findings included:

- AFP: 4000 ng/ml (elevated but consistent with IH)
- Normal beta-HCG and urinary catecholamines

- Hemoglobin: 13.8 g/dL
- Thrombocytopenia: 37,000/mL (improved spontaneously)
- Normal liver enzymes and renal function

A thoraco-abdominopelvic CT scan confirmed a hepatic mass arising from segments IV–VIII, measuring 80 × 61 × 100 mm, with heterogeneous contrast enhancement, a necrotic core, and peripheral serpiginous vessels.

Differential diagnoses included hepatoblastoma, congenital neuroblastoma, and cystic lymphangioma. However, based on imaging findings (vascular lakes, necrosis, and enhancement patterns), a congenital hepatic hemangioma, likely a RICH, was favored.

Propranolol was initiated at 2 mg/kg/day following a normal pre-treatment cardiac evaluation. No adverse effects were observed. After 5 weeks of treatment, ultrasound showed a 28% reduction in size (89 × 36 × 45 mm), supporting the diagnosis of RICH.

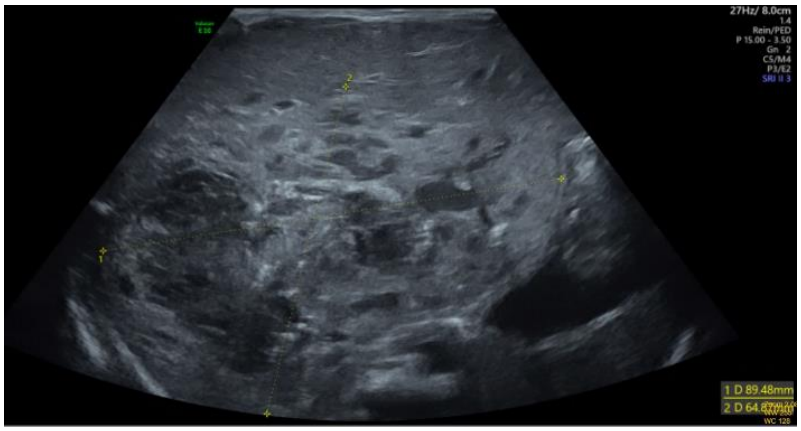

Figure 1: Ultrasound shows a heterogeneous hepatic mass consistent with a neonatal hemangioma in our patient

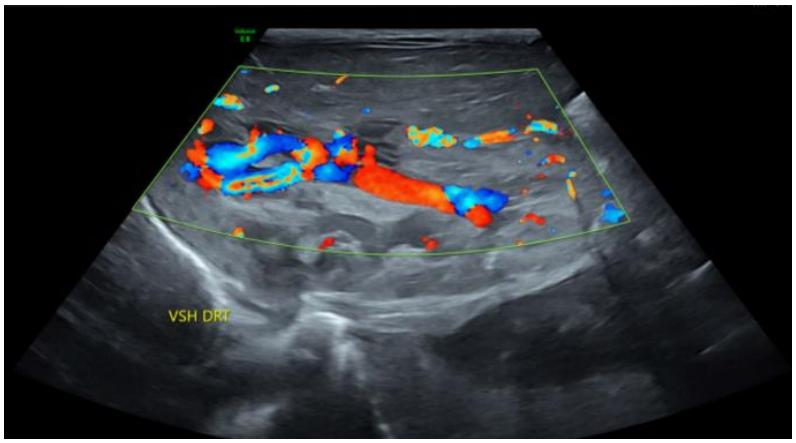

Figure 2: Color Doppler ultrasound demonstrating hypervascularity of the neonatal hepatic hemangioma in our patient

DISCUSSION

Congenital hepatic hemangiomas (CHH) are rare vascular tumors, often asymptomatic but occasionally life-threatening. Complications may include high-output cardiac failure, coagulopathy, and multi-organ dysfunction. In our case, the newborn presented with abdominal distension, hepatomegaly, and transient hematologic anomalies, but without cardiac or respiratory compromise.

Prenatal diagnosis of CHH is uncommon but feasible. In this case, the initial misinterpretation as a cystic lymphangioma underscores the importance of experienced imaging interpretation and comprehensive postnatal evaluation. The retroperitoneal location added diagnostic complexity, as CHH typically arises intrahepatically.

Propranolol has revolutionized IH management since its introduction, demonstrating efficacy through vasoconstriction, inhibition of angiogenesis, and endothelial cell apoptosis. Despite a modest reduction in tumor size (28%), the clinical response in our case was favorable. Factors such as lesion size and possible intralesional arteriovenous shunting may affect treatment response. Larger lesions tend to respond more slowly or incompletely.

Although rare, propranolol can cause hypotension, bradycardia, and hypoglycemia,

necessitating close monitoring. When medical therapy fails or complications occur, surgical excision or embolization may be considered. However, these options are complex and require experienced teams, especially in neonates.

CONCLUSION

Congenital hepatic hemangiomas, especially giant forms, can pose life-threatening risks due to mass effect and associated hematologic complications. Early diagnosis through high-quality imaging and a multidisciplinary approach is essential. Propranolol remains an effective and well-tolerated treatment option for symptomatic lesions. Surgical intervention may be life-saving in selected cases, particularly when medical therapy is insufficient.

Conflicts of Interest: The authors declare no conflicts of interest.

REFERENCES

- Munden A, Butschek R, Tom WL, et al. *Prospective study of infantile haemangiomas: incidence, clinical characteristics and association with placental anomalies*. Br J Dermatol. 2014; 170:907–13.
- Léauté-Labrèze C, Harper JI, Hoeger PH. *Infantile haemangioma*. Lancet. 2017;390:85–94.
- Krol A, MacArthur CJ. *Congenital hemangiomas: rapidly involuting and noninvoluting congenital hemangiomas*. Arch Facial Plast Surg. 2005;7:307–11.
- Roebuck D, Sebire N, Lehmann E, et al. *Rapidly involuting congenital haemangioma (RICH) of the liver*. Pediatr Radiol. 2012;42:308–14.
- Berenguer B, Mulliken JB, Enjolras O, et al. *Rapidly involuting congenital hemangioma: clinical and histopathologic features*. Pediatr Dev Pathol. 2003;6:495–510.
- Nasseri E, et al. *Partially involuting congenital hemangiomas: a report of 8 cases and review of the literature*. J Am Acad Dermatol. 2014;70:75–79.
- El Zein S, et al. *The histopathology of congenital haemangioma and its clinical correlations*. Histopathology. 2020;77:275–283.
- Roebuck D, et al. *RICH of the liver*. Pediatr Radiol. 2012;42:308–14.
- Iacobas I, et al. *Guidance Document for Hepatic Hemangioma (Infantile and Congenital) Evaluation and Monitoring*. J Pediatr. 2018;203:294–300.e2.
- Zhou Q, et al. *Congenital hepatic hemangioma: pulmonary hypertension case report*. BMC Pediatr. 2023;23:284.
- He Y, et al. *Heart failure caused by congenital hepatic hemangioma with arteriovenous fistula in a neonate*. Zhongguo Dang Dai Er Ke Za Zhi. 2023;25(8):884-888.
- Aouni S, et al. *Congenital hepatic haemangioma leading to multiple organ failure in a neonate*. BJR Case Rep. 2016;2:20150399.
- Andrews SW, et al. *Lesions of the liver*. In: Holcomb GW et al. Ashcraft's Pediatric Surgery. 7th ed. Saunders Elsevier; 2020:1030–35.
- Léauté-Labrèze C, et al. *Propranolol for severe hemangiomas of infancy*. N Engl J Med. 2008; 358(24):2649–2651.
- Haute Autorité de Santé. *Avis sur Hemangiol (propranolol)*. 2020.
- Bosemani T, et al. *Multifocal infantile hepatic hemangiomas – Imaging strategy and treatment response*.