Scientific Research Publishing

Open Journal of Radiology, 2025, 15(3), 117-121
https://www.scirp.org/journal/ojrad
ISSN Online: 2164-3032
ISSN Print: 2164-3024

Hemorrhage of the Adrenal Gland Revealed by Neonatal Jaundice: About a Case

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How to cite this paper: Sanogo, S.C., Yao, B.L., Soro, M., Kouassi, K.P.B., Bravo, T.A.E.B., Tanoh, K.E., Kouadio, A.F., Kouakou, B.D.M. and Konate, I. (2025) Hemorrhage of the Adrenal Gland Revealed by Neonatal Jaundice: About a Case. *Open Journal of Radiology*, **15**, 117-121.
https://doi.org/10.4236/ojrad.2025.153013

Received: June 1, 2025
Accepted: September 20, 2025
Published: September 23, 2025

Abstract

We report a case of unilateral right adrenal haemorrhage revealed by persistent neonatal jaundice. This adrenal haemorrhage occurred following a pregnancy that had progressed normally until premature rupture of the membranes, resulting in perinatal asphyxia. The clinical manifestations of adrenal haemorrhage are related to the extent of the haemorrhage and the extent of damage to the adrenal cortex. This observation highlights the importance of abdominal ultrasound in cases of jaundice during the neonatal period, as it allows an aetiological diagnosis to be made for effective management.

Keywords

Haemorrhage, Adrenal Gland, Newborn, Ultrasound

1. Introduction

Adrenal gland haemorrhage is a rare condition. Its prevalence is 1.7 per 1,000 newborns during the neonatal period, according to autopsy findings [1]. The adrenal gland is vulnerable to significant haemorrhage (adrenal haematoma) during the neonatal period due to its large size, which is 10 to 20 times larger than that of adults [2], and its rich vascularisation [3]. It is frequently associated with obstetric trauma, perinatal asphyxia, intrauterine infection, coagulation abnormalities and thrombocytopenia [2].

The manifestations of this haemorrhage are varied and non-specific. Adrenal

haematoma can manifest as an abdominal mass, prolonged jaundice or anaemia [1] [4]-[6]. Abdominal ultrasound is the examination used to establish the aetiological diagnosis and monitor adrenal haematoma in newborns [5].

We report the case of a newborn with a unilateral adrenal haematoma revealed by prolonged jaundice.

2. Observation

The patient was a male newborn. He was born at 38 weeks and 1 day of amenorrhoea after a pregnancy that proceeded normally until premature rupture of the membranes approximately 24 hours before delivery with meconium-stained amniotic fluid. Delivery was spontaneous, vaginal, eutocian, with a foetal expulsion time of 7 minutes. The Apgar score was 5.6 at 1 minute and 5.6 at 5 minutes. Birth weight was 3000 grams. This newborn had undergone nasopharyngeal clearance and oxygenation. He was then referred to the neonatal unit for perinatal asphyxia, where resuscitation was performed. The initial infectious assessment was unremarkable. He was discharged on the second day (D2) of hospitalisation due to good clinical progress.

On the 21st day of life, the parents consulted the paediatric department of the Bouaké University Hospital Centre (CHU) again for cutaneous-mucosal jaundice.

Clinical examination on admission revealed cutaneous and mucosal jaundice associated with marked conjunctival pallor and a rectal temperature of 37.5˚C. The abdomen was slightly distended, soft, with no palpable abdominal mass. There was no serosanguineous lump. The stools were coloured and the urine was dark. There was dyspnoea associated with intercostal retraction and flaring of the nostrils. Examination of the other systems was normal.

Laboratory tests revealed an increase in total serum bilirubin to 45.95 mg/L and free bilirubin to 35 mg/L, an increase in C-reactive protein (CRP) to 42.5 mg/L, hyperleukocytosis (12,000/mm^3) and thrombocytosis (427,000/mm^3). However, the haemoglobin level was low (8 g/L).

The newborn was placed under observation. Given the persistence of jaundice, an abdominal ultrasound was performed on the 27th day after birth at the medical imaging department of Bouaké University Hospital using a Chison Q7 ultrasound machine equipped with a low- and high-frequency probe. This revealed a heterogeneous hypoechoic fluid collection in the right adrenal compartment, suggesting a unilateral right adrenal haematoma measuring approximately 28 ml (**Figure 1**). The hepatobiliary and pancreatic ultrasound examination was normal.

Adrenal MRI and biological tests, in particular ACTH and cortisol assays to assess adrenal function, were not performed due to the unavailability of these tests in Bouaké at the time of discovery.

Treatment consisted of medication and ultrasound monitoring. The latter revealed a gradual regression of the formation until its complete disappearance at week 15, according to the following timeline: 26 ml at week 3, 14 ml at week 7 and 2.7 ml at week 11, confirming the diagnosis of adrenal haematoma.

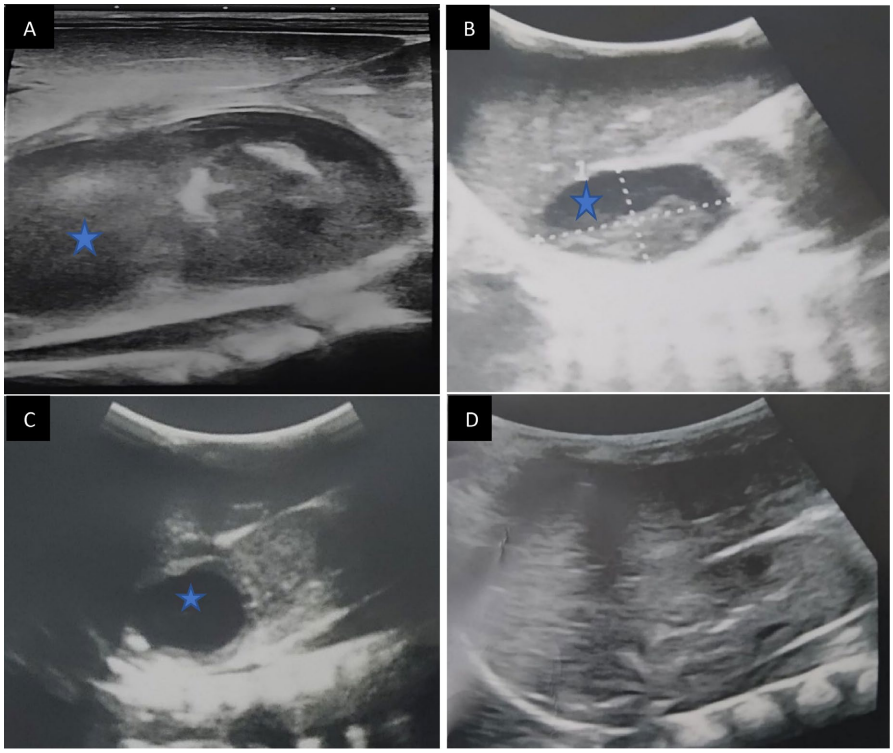

Figure 1. Ultrasound images of the adrenal compartment revealing an adrenal haematoma (CHU Bouaké photo library) presenting as a heterogeneous hypoechoic mass. A: adrenal haematoma: 28 ml. B: 3rd week: 26 ml. C: 7th week: 14 ml. D: 15th week: complete regression.

3. Discussion

Adrenal haemorrhage is relatively rare. Its actual incidence is difficult to estimate because most cases are asymptomatic and go unnoticed [7]. Autopsy studies have shown a prevalence of 1.7 per 1,000 [1]. According to some authors [3] [7]-[10], the causes of perinatal asphyxia remain risk factors for adrenal haemorrhage in infants and are diverse, such as maternal-foetal infection, prolonged labour, difficult delivery, coagulation disorders, macrosomia, trauma during or shortly after delivery, cardiorespiratory failure, etc. In some cases, no factors are identified. In our observation, the main cause of perinatal asphyxia was premature rupture of membranes with cardiorespiratory failure.

The clinical presentation of HS is highly variable, ranging from a completely asymptomatic situation to specific signs. Clinical manifestations depend on the degree of haemorrhage and the amount of adrenal cortex compromised by the haemorrhage [2]. An abdominal mass is the most common clinical presentation [3].

Neonatal jaundice is common, but it is rarely reported as the main symptom, as was the case in our observation, hence the importance of abdominal ultrasound, which is key to diagnosis.

Jaundice results from post-haemorrhagic haemolysis and is characterised by a fairly late onset and prolonged course. When faced with jaundice of an unusual

form, it is important to consider the possibility of HS and perform an abdominal ultrasound scan [5]. Ultrasound remains the most effective test for early diagnosis of HS, as it does not involve radiation and allows for a thorough examination of the newborn's adrenal region. Initially, the haematoma appears as a round, hyperechoic structure at the upper pole of the kidney. However, within a month, the haematoma and necrotic adrenal tissue are resorbed and calcification typically appears at the periphery of the gland [11]; total resorption of the HS generally occurs between 3 and 6 weeks [10] [11].

In our case, ultrasound follow-up showed a gradual regression of the haematoma until its complete disappearance without calcification at 15 weeks, *i.e.* 2 months and 3 weeks.

The adrenal haematoma was unilateral and located on the right side in our case. Our finding is consistent with that of the majority of authors who report that the right adrenal gland is the most common site of haemorrhage (38% to 100%) [10] [12] [13], while bilateral haemorrhage is reported in 8% to 38% of cases [10]. The right adrenal gland is more exposed to trauma due to its location between the liver and the spine, which can compress it. In addition, the right adrenal vein generally drains directly into the inferior vena cava and is therefore exposed to variations in venous pressure. The clinical manifestations of adrenal haemorrhage vary depending on the severity of the haemorrhage and the extent of damage to the adrenal cortex.

4. Conclusion

Adrenal haematoma is a rare condition in newborns and its clinical manifestations are variable and non-specific. Abdominal ultrasound is the key diagnostic test, which also allows for follow-up.

Ethical Considerations

Information was collected in accordance with confidentiality requirements and after obtaining the mother's consent.

Authors' Contributions

All authors contributed to the development of this study and declare that they have read and approved this manuscript.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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