



## CASE REPORT

# Neonatal atrial flutter after insertion of an intracardiac umbilical venous catheter



Marcos Moura de Almeida\*, Wlândia Gislayne de Sousa Tavares,  
Maria Mônica Alencar Araripe Furtado, Maria Marcia Farias Trajano Fontenele

Maternidade Escola Assis Chateaubriand, Universidade Federal do Ceará (UFC), Fortaleza, Ceará, Brazil

Received 28 January 2015; accepted 15 May 2015

Available online 19 October 2015

### KEYWORDS

Atrial flutter;  
Catheters;  
Newborn

### Abstract

**Objective:** To describe a case of neonatal atrial flutter after the insertion of an intracardiac umbilical venous catheter, reporting the clinical presentation and reviewing the literature on this subject.

**Case description:** A late-preterm newborn, born at 35 weeks of gestational age to a diabetic mother and large for gestational age, with respiratory distress and rule-out sepsis, required an umbilical venous access. After the insertion of the umbilical venous catheter, the patient presented with tachycardia. Chest radiography showed that the catheter was placed in the position that corresponds to the left atrium, and traction was applied. The patient persisted with tachycardia, and an electrocardiogram showed atrial flutter. As the patient was hemodynamically unstable, electric cardioversion was successfully applied.

**Comments:** The association between atrial arrhythmias and misplaced umbilical catheters has been described in the literature, but in this case, it is noteworthy that the patient was an infant born to a diabetic mother, which consists in another risk factor for heart arrhythmias. Isolated atrial flutter is a rare tachyarrhythmia in the neonatal period and its identification is essential to establish early treatment and prevent systemic complications and even death.

© 2015 Sociedade de Pediatria de São Paulo. Published by Elsevier Editora Ltda. This is an open access article under the CC BY license (<https://creativecommons.org/licenses/by/4.0/>).

### PALAVRAS-CHAVE

Flutter atrial;  
Cateteres;  
Recém-nascido

### Flutter atrial neonatal após inserção de cateter umbilical intracardíaco

### Resumo

**Objetivo:** Descrever um caso de flutter atrial neonatal após a inserção de um cateter venoso umbilical intracardíaco, relatando sua evolução clínica, e realizar uma revisão bibliográfica sobre o tema.

\* Corresponding author.

E-mails: [marcos.malmeida@yahoo.com.br](mailto:marcos.malmeida@yahoo.com.br), [marcosmouradealmeida@gmail.com](mailto:marcosmouradealmeida@gmail.com) (M.M. Almeida).

*Descrição do caso:* Recém-nascido pré-termo tardio de 35 semanas de idade gestacional, filho de mãe diabética, grande para a idade gestacional, com desconforto respiratório precoce e risco para infecção neonatal, que necessitou de cateterização venosa umbilical. Após o procedimento, o paciente apresentou taquicardia. A radiografia torácica evidenciou posição intracardiaca inadequada do cateter umbilical, que foi tracionado, e o neonato permaneceu taquicárdico. O eletrocardiograma permitiu o diagnóstico de *flutter* atrial. Por conta da instabilidade hemodinâmica foi realizada cardioversão elétrica, com sucesso.

*Comentários:* A relação entre arritmias atriais e cateteres umbilicais mal posicionados tem sido descrita na literatura, mas, neste caso, vale ressaltar o fato de o paciente ser filho de mãe diabética, o que consiste em outro fator de risco para as arritmias cardíacas. O *flutter* atrial isolado é uma taquiarritmia rara no período neonatal, sendo o seu reconhecimento fundamental para um tratamento precoce e para evitar complicações sistêmicas e até mesmo fatais.

© 2015 Sociedade de Pediatria de São Paulo. Publicado por Elsevier Editora Ltda. Este é um artigo Open Access sob a licença CC BY (<https://creativecommons.org/licenses/by/4.0/deed.pt>).

## Introduction

Atrial flutter is a rare arrhythmia in the neonatal period. Its low incidence makes it difficult to carry out studies and justifies the small number of publications about the best treatment and long-term prognosis.<sup>1,2</sup>

Umbilical catheterization is commonly used in neonatal management for the administration of parenteral nutrition, hypertonic solutions, blood products, blood pressure monitoring and medication infusion. This procedure, although easy to perform, has potential risks, including catheter-related infection, thrombosis, myocardial perforation, pleural and pericardial effusions and arrhythmias.<sup>3</sup> Catheters should ideally be positioned between the inferior vena cava and the right atrium. Catheters that go beyond the right atrium can get lodged in the superior vena cava, right ventricle, but usually pass through the foramen ovale and become lodged in the left atrium, which can lead to endocardial injury.<sup>4</sup> The association between umbilical venous catheterization and cardiac arrhythmias is mainly reported when the catheter is misplaced, in an intracardiac position.<sup>4-8</sup>

Abnormalities in the fetal heart rate occur in 2% of pregnancies.<sup>9</sup> Fetuses of diabetic mothers require special care, both in the prenatal and early neonatal periods. These newborns are usually large for gestational age (LGA), have higher admission rates at neonatal intensive care units (NICUs) and higher mortality rates than newborns who are adequate for gestational age, as well as a higher frequency of atrial arrhythmia.<sup>9,10</sup>

The aim of this article is to report a case of an LGA newborn, born to a diabetic mother, who developed atrial flutter after the placement of an intracardiac umbilical venous catheter, reporting the clinical outcome and performing a brief literature review on the topic.

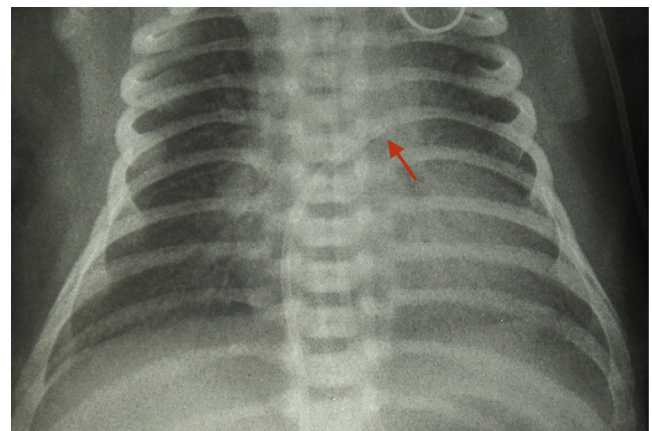
## Case description

The patient was an infant born to a diabetic mother with gestational hypertension and urinary tract infection, of which treatment was started during labor. The patient was born by cesarean section due to obstetric indication at 35 weeks of gestational age, according to the last menstrual period,

with Apgar scores of 3 and 8 in the first and fifth minutes of life, respectively, and birth weight of 3755g being classified as LGA according to Alexander's curve of reference values of neonatal weight.<sup>11</sup>

The patient had early mild respiratory distress, with no other alterations in the physical examination and asymptomatic hypoglycemia in the first hour of life, resolved after formula administration. The newborn was referred to the medium-risk neonatal unit using oxygen with inspiratory oxygen fraction of 40%. Ten hours after birth, the newborn showed worsened respiratory distress and was admitted at the neonatal ICU for ventilatory support with continuous positive airway pressure (CPAP) and early antibiotic therapy for rule-out sepsis. Umbilical venous catheterization was performed approximately 12h after birth due to the difficulty in obtaining peripheral venous access.

Soon after the procedure, the patient showed persistent tachycardia (190–230 beats per minute) and worsening of respiratory pattern, requiring tracheal intubation. Chest radiography showed normal cardiac area, clear lungs and intracardiac umbilical catheter in the left atrium region (Fig. 1), which was repositioned. The patient, however, persisted with tachycardia. An electrocardiogram was then performed, which confirmed the supraventricular tachycardia, suggestive of atrial flutter.



**Figure 1** Intracardiac umbilical venous catheter in the left atrial region.

Download English Version:

<https://daneshyari.com/en/article/4176184>

Download Persian Version:

<https://daneshyari.com/article/4176184>

[Daneshyari.com](https://daneshyari.com)