Detection of Duct Ectasia of Mammary Gland by Ultrasonography in a Neonate with Bloody Nipple Discharge

Ramazan Aydin*, Selim Baris Gul, Ahmet Veysel Polat

Department of Radiology, Faculty of Medicine, Ondokuz Mayis University, Samsun, Turkey

Received May 11, 2012; received in revised form Jul 19, 2012; accepted Nov 14, 2012
Available online 21 January 2013

Key Words
duct ectasia; mammary gland; neonate; ultrasonography

Bloody nipple discharge, a rare finding in infants, is associated most often with benign mammary duct ectasia and commonly resolves spontaneously. Ultrasonography is a useful diagnostic imaging method to detect the cause of discharge. The rarity of this symptom in infants and its association with breast carcinoma in adults can lead to unnecessary investigation and treatment. Here, we describe ultrasonographic and color Doppler ultrasonographic findings of a 20-day-old boy with bilateral bloody nipple discharge that resolved spontaneously without treatment after 15 days. We conclude that bloody nipple discharge is usually a benign and self-limited process in infancy, and that it is advisable to avoid unnecessary invasive investigations initially.

Copyright © 2012, Taiwan Pediatric Association. Published by Elsevier Taiwan LLC. All rights reserved.

1. Introduction

Milky nipple discharge (white color) can often be seen in the neonatal period. This benign condition develops depending upon hormonal adaptation in the first months of life. However, bloody nipple discharge (BND) is rare in this period.1,2 We report the ultrasonographic (US) and color Doppler ultrasonographic (CDU) findings of mammary duct ectasia in a 20-day-old boy with BND.

2. Case Report

A 20-day-old boy was taken to the breast imaging unit at our hospital by his parents due to swelling in both breasts and BND for 2 days. Physical examination revealed swelling in both breasts, but breast skin was normal in appearance. Peripheral blood count and coagulation screening tests (prothrombin time and activated partial thromboplastin time) were normal. Prolactin (16 μg/L), oestradiol
(<12 ng/L), testosterone (1.76 mg/L), and gonadotropin (β-HCG<0.1 μg/L) serum levels were within normal range for age. Bacterial culture of the discharge was negative. The nipple discharge cytology was negative for atypical cells and contained many red blood cells. US examination was performed with a 12-MHz linear probe. Masses consisting of tubular anechoic structures and echogenic septa and in the form of hypochoegenous heterogeneous oval mass compatible with hyperplastic glandular tissue and duct ectasia were monitored in the subareolar areas on US (Figure 1). Vascularity was present in echogenic septations on CDU (Figure 2). In light of the US and CDU findings, diagnosis of gynecomastia accompanied by duct ectasia was established. In the follow-up examination after 15 days, duct ectasia could no longer be detected by US and BND.

3. Discussion

In the literature, there are numerous cases undergoing biopsy and mastectomy due to duct ectasia in childhood. However, duct ectasia is a benign condition resulting from dilated ducts surrounded by fibrosis. Duct ectasia accompanied by BND is a self-limiting condition occurring in the neonatal and childhood periods. Resolution may take 2 weeks to 9 months. In our case the symptoms resolved after 15 days. In the literature, no breast malignancy in the neonatal period was observed. Juvenile secretory carcinoma and phylloides tumor are breast tumor malignancies reported in childhood and patients referred to hospital with BND. Therefore, US is an important imaging method in pediatric patients presenting BND. In the literature, cases referred to hospitals with BND and duct ectasia are rare in neonatal period and childhood. Anechoic dilated ducts and heterogeneous hypochoegenous mass consisting of echogenic septa in subareolar areas were detected on US and echogenic content due to hemorrhage in the ductus was monitored. In our case, hypochoegenous heterogeneous oval mass lesions consisting of anechoic tubular structures (duct ectasia) and echogenic septa in both subareolar areas were monitored. In the literature, we encountered only two cases in which CDU was performed. Corapcioglu et al did not detect abnormal vascularity on CDU but Welch et al.

![Figure 1](image1.png)  Ultrasound images of the subareolar areas of bilateral breasts demonstrating ovoid masses comprised of anechoic, tubular structures with intervening septations, which are characteristic of glandular hyperplasia and ductal ectasia.

![Figure 2](image2.png)  Color Doppler ultrasound showing vascularity in the echogenic septations.
detected vascularity in echogenic septa. In our case, we observed vascularity in the echogenic septations. These facts suggest that BND in infants is a benign and self-limiting condition. Therefore invasive intervention including biopsy should be avoided, especially in girls, because even minimal operative injury to the breast bud may produce severe tissue damage resulting in functional disability and persistent disfigurement. Noninvasive investigations such as culture of the discharge and ultrasonographic evaluation are recommended as well as a careful physical examination and close clinical follow-up. Only if ultrasonography reveals a mass or an abnormality other than mammary duct ectasia, or if the discharge persists for more than 9 months, should further investigations, including invasive interventions, be considered.12

In conclusion, BND is a self-limiting benign condition occurring in neonatal period. Therefore, ultrasound examination and clinical follow-up are sufficient in establishing the diagnosis without the need for mastectomy or biopsy.

Conflict of interest

The authors state that there is no conflict of interest regarding the publication of this article.

References