



Case report: Neonatal mastitis a rare cause of septicaemia

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ABSTRACT

We report a case of a twenty day old girl infant who presented with an unilateral breast swelling and was admitted in the NICU for septicaemia. An ultrasound imaging of the breast was performed to rule out the possibility of a breast abscess but the imaging findings concluded the diagnosis of neonatal mastitis. We would like to emphasize based on our case experience that in paediatric cases even a small trivial localised infection can cause generalised potentially fatal complication of septicaemia which is alarming and ultrasound imaging plays a crucial role to prevent unnecessary invasive interventions and aids in prompt initiation of medical treatment.

Key words: Neonatal Mastitis, infection of breast tissue

INTRODUCTION

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The maternal estrogen in the third trimester of pregnancy causes the release of prolactin from the newborn's pituitary which leads to the enlargement of neonatal breasts.¹ Most commonly this condition resolves over a period of time. Rarely some discharge from the nipples may be encountered under the influence of the above mentioned hormonal factors.² Seldom there is any superadded infection within the hypertrophied breast tissue in neonates which is termed clinically termed as "neonatal mastitis". Female infants are more prone to this condition as the physiologic hypertrophy of the breasts is prolonged in them.³ We report a case of neonatal mastitis in a female infant who rapidly progressed to septicaemia and was admitted to the NICU. Our objective is to emphasize on the importance of early and accurate diagnosis of neonatal mastitis reached through the specific findings encountered on ultrasound imaging. Also we would like to create awareness of the potentially fatal complications of this seemingly benign condition, as encountered in our case which can be prevented by early initiation of aggressive medical therapy and close monitoring.

CASE REPORT

A twenty day old girl infant presented to the paediatric out-patient department with high fever. On clinical examination the right breast revealed signs of inflammation i.e.: swelling, redness, increased temperature & pain on palpation. The child was admitted and as the blood work up showed high leucocytosis she was shifted to the NICU as she was septicemic. She was referred to the radiology department for an ultrasound scan of the breast as the paediatricians suspected an abscess in the breast. The patient was also tentatively posted for an ultrasound guided drainage of the breast abscess at the same setting.

The ultrasound scan was performed on the patients' bed side with a linear high frequency probe of (7 MHZ). The ultrasound scan revealed prominent breast buds with multiple peripheral cystic foci and diffusely echogenic central stroma. (Figure 1) The breast tissue showed increased blood flow i.e.: hyperemia on colour flow Doppler ultrasound. (Figure 2) There were no focal anechoic areas observed which would represent an abscess. A diagnosis of neonatal mastitis was reached. Hence no further invasive intervention was required.

A blood culture was performed and patient was administered culture sensitive antibiotics parentally. After parental therapy for a duration of one week the patient recovered well and was discharged.

As neonatal mastitis is an extremely rare entity and a complication such as septicaemia is also rarer, we are lead to share the imaging and clinical inferences of our case report.

DISCUSSION

Neonatal mastitis is rarely encountered in term infants. If it occurs the peak incidence is at three weeks of age as seen in our case.⁴ Neonatal mastitis can very rarely cause complications like cellulitis, fasciitis, osteomyelitis, brain abscess and even sepsis all of which are potentially morbid in outcome without appropriate intensive management.⁵ Our case is one of the rarest ones encountered in medical literature hence it is beneficial for creating awareness in clinicians so that they would aggressively treat neonatal mastitis to prevent fatal complications one of which had developed in our patient, sepsis. We would also like to highlight that ultrasound imaging is an inexpensive and easily available sensitive tool to accurately diagnose this condition.

The ultrasound findings of prominent breast buds with poorly defined margins, echogenic central stroma & increased vascularity on ultrasound colour doppler are characteristic features of neonatal mastitis all of which were present in our case. If there is an abscess formation then the lesion would be appear as a well defined, hypoechoic area within the breast tissue without internal colour flow on colour doppler ultrasound. A breast abscess may show peripheral vascularity.⁶ An ultrasound scan is the modality of choice for diagnosis of neonatal mastitis in the presence of an appropriate clinical setting. These findings would also be beneficial for the reference of your colleagues from the faculty of radiology as it's a very rarely encountered entity in clinical practice and has very few documented articles for reference.

If an abscess is formed within the neonatal breast tissue, a surgical drainage is mandatory along with culture sensitivity and parental antibiotic administration.⁷ The commonest causative organism is staphylococcus aureus.⁸ Our patient did not show any abscess in the breast but focal infection was the cause of septicaemia. The clinical findings of our case those of warmth, pain on palpation, redness and tenderness were misleading to reach an over-diagnosis of an abscess and the imaging findings prevented unnecessary surgical interventions and morbidity to the infant.

To summarize, we report a case of neonatal mastitis which lead to a fatal complication of septicaemia. Through this case report we share our

imaging and clinical findings for the reference of our colleagues who may encounter similar cases in practice. Aggressive treatment of neonatal mastitis is essential to prevent lethal generalized complications. Also ultrasound imaging features are very specific to reach to the diagnosis of neonatal mastitis with very few cases reported in medical literature.

Conclusion:

Aggressive therapy is essential in cases of neonatal mastitis to prevent lethal complications. Ultrasound imaging is diagnostic with specific features to reach the conclusion of the neonatal mastitis.

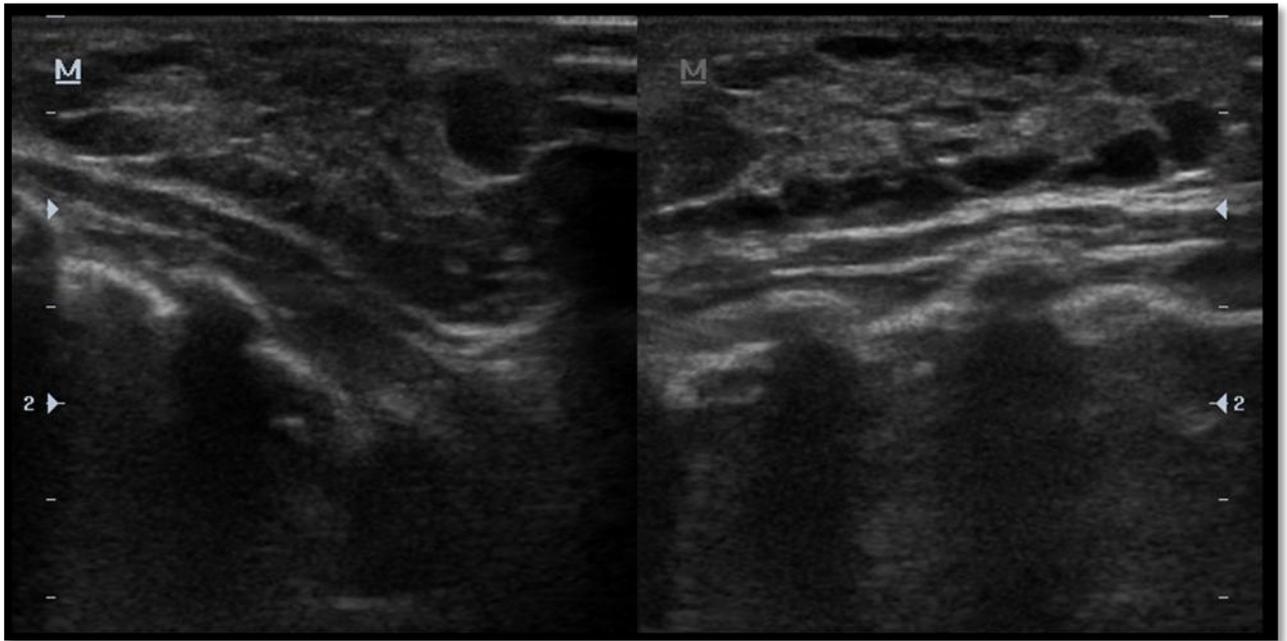


Figure 1: Longitudinal section of the right breast shows multiple peripheral cystic foci with diffusely echogenic central stroma.

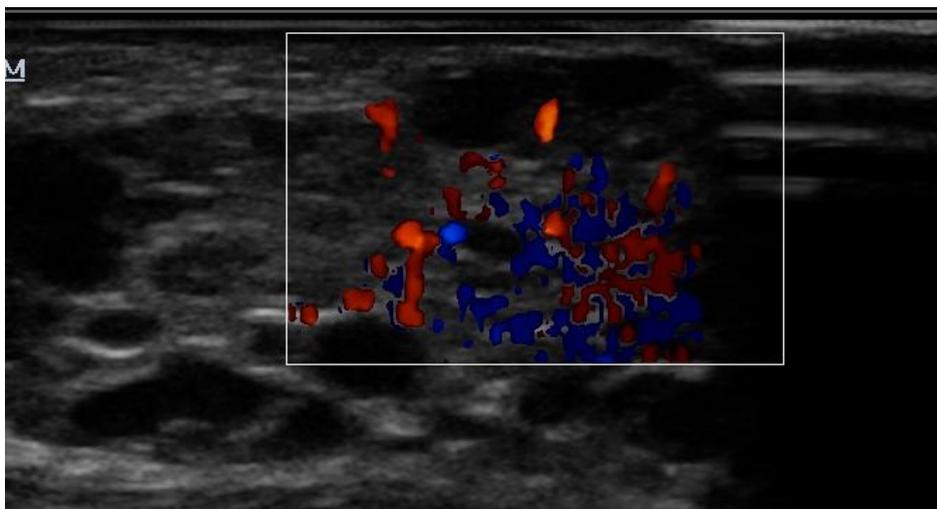


Figure 2: On colour Doppler interrogation, the hypoechoic areas within the right breast shows mildly increased vascularity.

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