

Rusty pipe syndrome in a 22-year-old primigravida at 26 weeks' gestation

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Bloody discharge from the nipple is frightening, but during pregnancy and lactation it may be totally benign. An underlying causative condition should be identified following careful diagnostic investigation. No surgical intervention is needed unless a mass is discovered or the findings on cytological examination of the discharge are suspicious or positive at the initial visit or during follow-up. We report a case of bilateral bloody nipple discharge that started during pregnancy and resolved spontaneously after delivery. This condition is known as 'rusty pipe syndrome'.

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Bloody discharge from the nipple during pregnancy and lactation can be frightening, but may represent a totally benign and self-limiting condition. We report such a case, with emphasis on the differential diagnosis.

Case report

A 22-year-old primigravida was admitted to our unit at 26 weeks' gestation for investigation of a bloody nipple discharge without a breast mass. The discharge was bilateral, spontaneous (occurring without external stimulus) and painless. It emanated from multiple ducts, and was associated with an increase in the size of the breasts. An ultrasound scan revealed dilated ducts without a breast mass. Cytological examination of the discharge was negative for neoplastic cells. The bleeding continued, and the patient gave birth to a healthy male baby weighing 3 000 g at 40 weeks' gestation. She was advised to express her breastmilk, and the bloody discharge resolved spontaneously 4 days after delivery and did not recur. Breastfeeding was then started. Postpartum follow-up has revealed no evidence of neoplastic changes so far. The patient was not referred for a mammogram because of the increase in density of the breast tissue following the pregnancy.

Discussion

Unilateral or bilateral nipple discharge without significant underlying breast pathology is not uncommon during pregnancy. It usually occurs in the second trimester, and may continue until 2 years after pregnancy and lactation.¹ Spontaneous bloody nipple discharge during pregnancy and lactation is a rare clinical condition. It usually appears in the third trimester of pregnancy, when the

vascularity of the breast has significantly increased.² In this case the discharge is probably caused by epithelial development and the formation of spurs of tissue, resembling papillomas, which project into the ducts and alveoli; a delicate network of capillaries then develops within the ducts. These pseudo-papillomas are covered with a single layer of epithelial cells, and can easily be ruptured or desquamated, causing a bloody nipple discharge during pregnancy and lactation.³ This condition is known as 'rusty pipe syndrome'.^{4,5} It is painless and may not even be noticed unless the mother is expressing her milk or the infant regurgitates reddish milk. The bloody discharge is usually bilateral but may be unilateral in the beginning. In most cases it begins at the time of birth or in early lactation, but it may start during pregnancy. It is most common in first-time mothers and is usually associated with nipple-stretching exercises such as Hoffman's procedure, which are often recommended for flat or inverted nipples.⁶

Blood or serosanguineous discharge in milk during lactation can be caused by various factors related to lactation, such as cracked nipples, mastitis, trauma or vascular engorgement.⁴ These conditions are painful and can be unilateral or bilateral. The diagnosis in such cases is usually obvious on clinical examination. Blood in breastmilk during pregnancy and lactation can also be caused by serious diseases such as ductal papilloma and fibrocystic disease. Ductal papilloma is the most common cause of bloody nipple discharge in women;^{4,5} the discharge is usually spontaneous and unilateral, comes from a single duct,^{4,5} is painless and is usually not associated with a palpable lesion. In fibrocystic disease the breast has areas of lumpiness, and the patient

experiences mastalgia.⁵ Nipple discharge represents an uncommon manifestation of breast cancer in pregnancy.²

The presence of a mass should always be excluded by careful physical examination. In lactating women, injury to the nipple can result from the baby's suckling and must also be excluded. Careful cytological analysis of the nipple secretion is essential. Clinical follow-up is advised if there are no pathological findings and all appears normal on physical examination and an ultrasound scan. If a pathological cause for the discharge is suspected, an ultrasound scan and galactography should be performed to exclude intraductal tumours such as papillomas or carcinomas. Galactography is recommended if the bloody discharge is limited to one duct.

Bloody nipple discharge during pregnancy usually resolves within 3 - 7 days after delivery, and there are no contraindications to breastfeeding after it resolves. The discharge should be evaluated further if it persists for more than a week.

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