Paediatric vaginal discharge

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Abstract

Vaginal discharge in the prepubertal patient is a common symptom, and can be a source of distress for the caregiver and concern for the healthcare worker. Several factors predispose these patients to the development of recurrent vaginal discharge. Unless noticed by the caregiver, this problem can persist for long periods of time.

Making a diagnosis in the prepubertal patient requires physician skills different from those required for diagnosis in the adult population. The history may often be difficult to obtain, and at times inaccurate or inconsistent. Common anatomical variants have to be considered during examination. Sexual abuse of children continues to be a serious problem in our society. Vaginal discharge is often the only presenting symptom. A high index of suspicion is required in order to make a diagnosis. Common causes of vaginal discharge in this group of patients will be looked at. Physical examination techniques and treatment of specific causes will not be discussed here.

Introduction

Vulvovaginitis is by far the commonest paediatric complaint in prepubertal patients. Reports of incidence in the literature vary from 17 - 50%. Several factors predispose the prepubertal girl to inflammation in the genital area. These include:
- Less protective covering of the vaginal opening by the labia majora
- Low oestrogen levels resulting in vaginal atrophy
- Poor hygiene
- Common dermatological conditions found in children

Presenting symptoms include a vaginal discharge, genital pain and recurrent urinary tract infections.

Anatomy and bacteriology

Oestrogen synthesis in the foetal ovary is low at term, but maternal oestrogens readily cross the placenta and oestrogenise the neonate. From birth through the first eight weeks of life, the female infant is under the influence of maternal oestrogens. Both the labia majora and minora show significant thickening and close off the vaginal opening.

Oestrogen levels begin to fall after the neonatal period. Levels are lowest between the ages of three and eight to nine. With the low oestrogen levels the genital tissues become atrophic. The labia majora appear as a thin rim of normal skin circling the vaginal opening.

The labia minora are thin, almost absent and the vaginal opening lies in close proximity to the anus. The once thick hymen becomes thin and translucent.

The vaginal epithelium is mildly erythematous and may appear inflamed. After the age of nine, oestrogen levels begin to rise again, signalling the onset of puberty. Under the influence of oestrogens, the external genitalia begin to take on the shape of the adult external genitalia.

Due to the low oestrogen levels, the vaginal pH in prepubertal girls is alkaline. The normal bacteriological flora have not been well-defined in this group of patients. Early studies reported a predominance of anaerobes. Most of these studies, however, had flawed methodologies, with small numbers of study subjects, lack of control groups and failure to control for the oestrogen status of the child. A recent study by Jaquier et al found no difference in the microbiological flora of both the study subjects and the control group. Organisms commonly isolated in both groups were mixed anaerobes, Escherichia coli, diphtheroids and coagulase-negative staphylococci.

Physiological

During the early neonatal period, maternal oestrogens cause oestrogenisation of the genital tract. A mucoid vaginal discharge, often bloody, is not an uncommon finding in the first 14 days of life. The effects of oestrogen begin to recede after two weeks. Any vaginal discharge or bleeding beyond two weeks warrants an investigation.

A rise in oestrogen levels at the onset of puberty results in the production of a physiologic leukorrhoea. This is characteristically a milky-white or clear mucoid discharge. The discharge is non-offensive and seldom necessitates the use of panty liners.

Pathological

Foreign body

Foreign bodies in the vagina are a common cause of vaginal discharge. In a review by Smith, 17.6% of patients presenting with vaginal discharge, had a foreign body in the vagina. Common objects retrieved from the vagina include a ball of tissue paper, beads and...
The vaginal discharge is typically brownish in colour and malodorous. It may occur daily, requiring the use of a panty liner. Foreign bodies at the vaginal opening can be removed with the use of forceps. Those further up the vaginal canal can be irrigated or removed through a vaginoscope. This may have to be done under light sedation or anaesthesia.

Infections
Fungal
As in adults, *Candida albicans* is the commonest fungal infection in prepubertal girls. Candida infections are rare in the non-oestrogenised prepubertal girl. They are common under the age of two, but become less frequent once the child is out of diapers. Infections with candida may follow treatment with a course of antibiotics. It is characterised by an erythematous rash with raised, well-demarcated borders. The associated vaginal discharge is thick, white and is often described as resembling cottage cheese. Recurrent candidiasis should alert the practitioner to the possibility of conditions like juvenile onset diabetes and immunosuppression. A diagnosis can easily be made by a KOH (potassium hydroxide) wet-mount preparation of the vaginal discharge. Characteristic spores and hyphae can be seen.

Bacterial
Children like to explore and pathogenic organisms can be introduced from other parts of the body. Respiratory pathogens are among the commonest isolated organisms in children with an abnormal vaginal discharge. Organisms such as *Haemophilus influenzae*, group A & B haemolytic streptococci and *Streptococcus pneumoniae* are commonly cultured. Infections in the genital tract may follow infection in the respiratory tract or skin. Infection by respiratory pathogens tends to cause a yellowish to greener, purulent vaginal discharge.

The vaginal opening lies in close proximity to the anus in prepubertal girls. The atrophic external genitalia of younger than 6 years. J Urol 2006;176:2632-2635.


References