

# PEDIATRIC GYNECOLOGY AND ENDOCRINOLOGY

## Summary of Round Table Discussion

By Robert B. Greenblatt, M.D., and James W. Bennett, M.D.

### VULVOVAGINITIS IN CHILDREN

**M**ANY mothers bring their young daughters to the pediatrician because they have noticed a discharge on the child's underclothing. Most of such discharges are nothing more than desquamation of the epithelial cells at perhaps a more rapid pace than usual. Such a discharge, commonly referred to as "whites," occurs normally in the adult female. No pathologic process is involved in either the child or the woman and no treatment is indicated. On the other hand, a discharge which is irritating, malodorous, and provokes an inflammatory response, has a pathologic background. By far the greater number of such cases fall into one of the following categories:

(a) *Nonspecific vaginitis* which may be due to the presence of organisms which find their way into the vaginal canal either through insertion of the child's finger or some foreign object, or may appear for no apparent predisposing reasons. Among the organisms found are pneumococcus, streptococcus, staphylococcus, diphtheroids, colon bacillus, etc. The treatment consists primarily of removing or correcting the underlying factor and cleansing measures. Frequently, attention to the technique of cleansing the rectal area following a bowel movement, daily bathing and a pitcher douche with saline twice a day will clear up the discharge. Sulfonamides by mouth, locally, or both may be effective in some cases. In other cases, the local use of a specific antibiotic such as Terramycin® or Aureomycin® has been effective (a 50 mg. capsule may be inserted into the vaginal canal daily for 5 to 7 days).

(b) Another group of cases is due to the presence of *foreign bodies* in the vaginal canal. Any number and type of foreign bodies have been found in the vaginal canals of small children, such as safety pins, pencils, sticks, etc. The presence of a foreign body sets up an irritant reaction and causes a discharge, in most instances with a bloody component. The diagnosis may be made by inspection or by gentle rectal examination, pressing the vaginal wall through the rectum. A small speculum may sometimes be required to visualize the vaginal tract. Roentgenograms will reveal opaque objects, and have proved helpful in arriving at a correct diagnosis. Removal of the foreign body usually results in disappearance of the vaginal discharge in 1 to 2 weeks.

(c) A small percentage of cases of vulvovaginitis in children will be found to be caused by *trichomonal infestation*. *Trichomonas vaginalis* vaginitis, which occurs quite frequently in the adult female, also occurs occasionally in children. The treatment of this infection is no different from that used for the adult. It might be noted, however, that the infection in children may be cleared up more quickly, as a rule, than in the adult. The same therapy as described for nonspecific vaginitis may be used.

(d) Another cause of vulvovaginitis in young girls is *candida albicans*. Thrush is frequently seen in the mouths of infants. Examination of the material under the microscope will reveal yeast-like organisms or mycelia and conidia. A similar condition occurs in the vaginal canal, especially in this day of antibiotic therapy. Perianal and

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vulvovaginal yeast infections are frequent sequelae to antibiotic therapy in children as well as in adults. Yeast infections are sometimes seen in little girls and are unrelated to antibiotic therapy.

Examination of the vaginal secretions often shows yeast-like organisms which, in the absence of symptoms, need not be considered as pathogens. In the presence of discharge or pruritus, however, treatment should be directed to the offending organism found. Mycelia, with thread-like branches and conidia, are always indicative of a pathogenic form of yeast infection.

Propion Gel® inserted into the vaginal canal, boric acid washes, or baking soda washes daily will usually clear up this type of vaginitis. Aqueous gentian violet, 1 per cent, is also used.

(e) Another form of vaginitis occurring in young girls is *adhesive vaginitis*. Adhesive vaginitis in little girls calls to mind the atrophic “senile” vaginitis seen so frequently in elderly women. In either instance, the vaginal mucosa is reddened, atrophic, and a weeping discharge may be present. Coincident with the vaginitis, perivulvar adhesions form between the labia, and subsequently complete closure may result. These adhesions are separated either by simple manual manipulation or by blunt dissection when difficult to separate. Then an estrogenic ointment, such as Ovoclylin® or Progynon®, may be applied in small amounts daily to cause maturation of the vaginal mucosa and prevent the recurrence of adhesions.

(f) Another factor to be considered in the causation of vulvovaginitis is *venereal disease*. Gonorrheal vaginitis, once seen with great frequency and of a very contagious nature, is not too often encountered today, although its incidence is still significant. In former days often minor epidemics developed in children’s hospital wards, in homes for children, and in private homes with several children. The treatment was prolonged, requiring instillations and washes, and estrogens administered over a period of time to cause maturation of the

vaginal mucosa. Spread of the infection certainly was not necessarily by sexual contact. Today, treatment with penicillin and other antibiotics is specific, and the disease process is arrested very rapidly in the majority of cases.

Chancroid, granuloma inguinale and lymphogranuloma venereum must be considered in the differential diagnosis when lesions are present.

Another condition, fusospirochetosis, may be added. The venereal nature of this infection is by no means certain; it is similar to Vincent’s angina of the mouth. Smears from the lesions show sausage-shaped bacilli and spirilla. The infection occurs occasionally in the vaginal canal, and an acute ulcerative process with a foul discharge is characteristic. Medications which are effective in the treatment of syphilis, such as arsenicals and antibiotics, are effective against fusospirochetosis.

(g) In the differential diagnosis of vulvovaginitis, *pinworm infestation* of the vagina should not be overlooked. Therapy for eradication of the concomitant intestinal infestation will usually clear up the vaginitis.

#### FUNCTIONAL UTERINE BLEEDING IN THE ADOLESCENT GIRL

Functional uterine bleeding in the adolescent girl is not infrequently encountered but, regretfully, it must be said that it is one of the poorly understood and poorly managed disorders in this age group. Functional uterine bleeding has been defined as abnormal and excessive bleeding which occurs because of physiologic disturbances, not pathologic processes. Hormonal dysfunction is the principal cause, but nutritional, nervous and psychogenic factors play important roles. In the adolescent girl, bleeding associated with pathologic lesions such as endometrial or cervical polyps, endometriosis, pelvic inflammatory disease, or misconceptions, is rare. Nevertheless, these causes and the possibility of endometrial carcinoma, sarcoma botyroides, pelvic tumors, such as granulosa cell tumor,

etc., must be eliminated. Curettage and cervical biopsy are means of detecting endometrial carcinoma and cervical sarcoma. The questions which arise are: (1) the proper management of the patient who does not improve following curettage, or whose improvement is temporary; (2) the role of radical surgery and radiation, and (3) the place of hormonal therapy in the scheme. Because of the extreme rarity of malignant processes in the causation of uterine bleeding in adolescents, there are many physicians who will feel that curettage is not always a necessary prerequisite to hormonal therapy. I doubt whether radical surgery or radiation therapy is ever necessary in treatment of functional uterine bleeding, and some 15 years' experience in management of bleeding in adolescents seems to indicate to me that even curettage should be reserved for those who do not show an immediate response to hormonal therapy. Hormonal therapy, as a rule, induces rapid hemostasis when the disorder is functional, but response cannot be expected (usually) when bleeding is due to a pathologic factor. In this regard, blood dyscrasias must also be considered.

The knowledge gained from study of the physiology of menstruation may be applied most effectively in the treatment of menstrual disorders. At the risk of oversimplification, it may be stated that normal menstruation occurs as a result of rather rapid withdrawal of hormonal support (estrogen and progesterone) of the endometrium, with consequent shedding of the endometrium. In anovulatory menstruation, bleeding is caused only by estrogen withdrawal, with the result that shedding is gradual and incomplete, and quite frequently the bleeding is not only excessive but prolonged. Abnormal uterine bleeding in the adolescent girl is usually caused by failure of initiation of the cyclic ovulatory mechanism, and bleeding is anovulatory or due to faulty corpus luteum formation.

Experience with the use of gonadal steroids in therapy of various gynecic disorders has crystallized sufficiently to war-

rant certain categorial statements insofar as they pertain to the phenomenon of uterine bleeding.

Uterine bleeding may be brought on by a sudden lowering of estrogen levels (estrogen-deprivation bleeding). Break-through bleeding will result from constant and prolonged estrogen stimulation. In either case, the administration of sufficiently large doses of estrogen will raise the estrogen levels, and usually bleeding will be arrested or postponed. Parenteral estrogen, followed by decreasing oral doses, may be used to good advantage. However, more rapid hemostasis may be obtained by the employment of intravenous estrone sulfate [Premarin, Intravenous®]. The dosage is 20 mg., given intravenously, every 4 to 8 hours until bleeding is arrested. Then oral estrogens, in decreasing doses (from 3.75 mg. of conjugated estrogens or its equivalent per day gradually reduced to 1.25 mg. per day), are given for a period of 3 weeks. After this time, ethisterone [Lutocylol®, Pranone®], 25 mg. orally, or 25 mg. progesterone vaginal tablets [Colprosterone®], are administered daily for 5 consecutive days. A withdrawal bleeding period, simulating a menstrual period, will follow several days later.

Estrogen therapy is particularly useful in the management of functional uterine bleeding which occurs at the menarche. A complication of high dosage estrogen therapy, however, is nausea. The errors which are most frequently made when employing estrogens in treatment of uterine bleeding are inadequate dosage and abrupt cessation of therapy as soon as bleeding is arrested, instead of gradual tapering off of estrogen therapy.

**Progesterone:** Prolonged bleeding is sometimes associated with faulty regression of the corpus luteum. In such instances, shedding of the endometrium may be incomplete, and consequently bleeding continues. Progesterone is effective in postponing estrogen-deprivation and progesterone-deprivation bleeding, as well as progesterone break-through bleeding. Pro-

gesterone is a desquamative hormone. It increases the desquamation of vaginal epithelia, and also promotes the desquamation and shedding of the endometrium. Progesterone induces a "medical curettage."

Progesterone, when used parenterally in small doses (10 mg. per day for 5 days) does not stop bleeding immediately, though it may lessen it. Moreover, 3 to 5 days after the cessation of a course of small doses of progesterone, bleeding may be considerably accentuated, though it stops finally about the seventh or eighth day after cessation of the therapy. It was this accentuation of bleeding which probably led many of the earlier investigators to believe that progesterone was contraindicated in the treatment of bleeding. If properly employed, progesterone is the most effective single therapeutic agent available.

In parenteral doses of 25 mg., progesterone frequently stops bleeding within a few hours. However, therapy must be continued for at least 5 consecutive days, and the physician must realize that 24 to 72 hours after the cessation of treatment, a withdrawal bleeding period will take place. The withdrawal period will simulate a normal menstrual period in amount and duration of flow. The errors attending the administration of progesterone are many. For example, the withdrawal period may be mistaken for a recurrence of the bleeding, and further administration of progesterone may cause more bleeding. Another error frequently encountered is the cessation of therapy after 1 or 2 injections of progesterone because the bleeding was arrested. Therapy should be continued for a minimum of 5 consecutive days.

**Androgens:** Androgens alone are not too effective in arresting a siege of uterine hemorrhage, although frequently advocated. They have been used to advantage in preventing an ensuing bout of excessive bleeding in patients with cyclic hypermenorrhea. Clinicians using androgens alone to control bleeding will frequently be disappointed in the results. Furthermore,

if high or prolonged dosage is used, signs of virilization may be expected. If androgens are used in the adolescent girl for control of cyclic hypermenorrhea, they should be employed cautiously, and the recommended dosage would be no more than 10 mg., parenterally, on the fifteenth, twentieth, and twenty-fifth days of the cycle.

**Combined gonadal steroid therapy:** Estrogen, progesterone, and testosterone, alone, each have an area of greatest usefulness. Combinations of estrogen and progesterone, or testosterone and progesterone, have been used to good advantage when dosage is adequate. The equivalent of 1.66 mg. of estradiol benzoate in combination with 25 mg. of progesterone, administered for 5 consecutive days, will give results which excel those obtained with either hormone alone. Moreover, the combination of estradiol benzoate (1.66 mg. or its equivalent), progesterone (25 mg.) and testosterone propionate (25 mg.) in a unit of 1 ml. [Lukestra® or Tristerone®] administered as 1 ml. daily for 5 or 6 consecutive days has provided most satisfactory results. Each component has a specific effect. Virilization does not occur with this combination since the androgen is adequately covered by the estrogen and progesterone.

Two points should be emphasized. Firstly, whenever progesterone is employed alone or in combination with other steroids, progesterone-withdrawal bleeding must be expected. The parents of the patient must be warned accordingly, or they will feel that the therapy has failed. Secondly, a period of amenorrhea sets in after the arrest of bleeding, regardless of the method employed, and in order to avoid a recurrence of hemorrhage, a course of ethisterone, 25 mg. per day orally or progesterone suppositories, 25 mg. per day for 5 consecutive days, must be given at cyclic intervals to induce a withdrawal period monthly. Whenever withdrawal bleeding is excessive during the first few days, 1/320 grain of ergotrate may be administered orally every 4 to 6 hours for 4 to 6 doses. Cyclic proges-

terone therapy is carried on for 5 days each month for 3 to 5 months or longer, until normal cyclic menstruation has been established. This may be readily ascertained by basal temperature records. It is this persistent cyclic therapy which offers the best chance for ultimate salvage and cure.

Adjunctive therapy is not to be overlooked. Thyroid extract should be administered to those patients with evidence of hypothyroidism. Correction of body weight in the obese and undernourished, and of

dietary discrepancies must be part of the regimen. Recent studies indicate that where the bleeding tendency is associated with clotting abnormalities, the administration of toluidine blue [Blutene®], 1 tablet b.i.d., with meals, may be helpful. Attention should also be paid to correction of unhappy environmental situations and to the removal of maladjustment by appropriate psychotherapy. Psychosomatic disturbances play a greater role in menometrorrhagia than we have been wont to acknowledge.



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