

is begun. So striking is this effect that the anxious mothers are ordinarily delighted.

Treatment of gonorrheal vaginitis with estrin suppositories seems far and away the most effective of any method now at our disposal. In addition to being effective it has enormous advantages over other local or hypodermic treatments in that it is easily given and is not disturbing to the child. To obtain benefit the physician makes sure that the vaginal mucosa has responded to estrin therapy. This can be done in several ways. If the response is well marked the gross appearance of the genitalia will be sufficient evidence. Vaginal smears for epithelial content may be misleading. Biopsy of a minute portion of the mucosa on microscopic section gives conclusive proof. Much simpler is it to test the vaginal secretions or washings with normal salt solution for increased acid below 6 with a color indicator. If the secretions are acid the desired change has been brought about. Treatments with suppositories should always be continued for at least two weeks after an apparent cure has been obtained. Extraordinary precautions to prevent the exposure of other girls should of course be taken, although the chance of spreading the infection must be slight after the vaginal discharge ceases.

The complete disappearance of pus and gonococci from vaginal smears taken at weekly intervals over a number of months—with cultures if possible—serve as a criterion of cure in all cases. Late recurrences are fairly common. Such cases must be given another course of treatment—although fortunately recurrent cases commonly yield to this kind of therapy more quickly than do those taken up de novo. In none of our cases was there any evidence of any harmful effects resulting from the treatments with estrin.

CONCLUSIONS

We believe that: (1) Estrin suppositories are a safe remedy for gonorrheal vaginitis; (2) the treatments are easy to give and comfortable for the patient; (3) vaginal discharges and vulval irritation are usually quickly relieved; (4) many cases of gonorrheal vaginitis are cured by the method described; (5) we do not now know any other treatment that yields as good results.

REFERENCES

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II. The Nursing Care

BY ELINOR MOYLE, R.N.

The general nursing care of children who have gonorrheal vaginitis is familiar to most nurses, since we see these patients in the hospital, in institutions for children, and in the home. Moreover, this phase of the nursing care differs little under the various forms of specific treatment, consisting as it does chiefly of measures to improve the general health of the child. These measures include a nourishing diet, liberal fluids, and rest in bed if the temperature is elevated. Local cleanliness is essential. To ensure this, the vulva should be sponged frequently with a solution of boric acid, or pitcher douches of the same solution may be given. Vaginal douches, so common a feature of most methods of treatment for gonorrheal vaginitis, are not required during the course of estrin therapy.

In addition to these hygienic measures it is commonly felt that some precautions should be taken against spread of the infection to the patient's eyes. The fear of such spread is apparently exaggerated, for although vaginitis and ophthalmia occasionally occur in the same child, it is almost

always the vaginitis which is secondary, rather than the ophthalmia. If, however, the child is one who frequently rubs her eyes, the use of elbow cuffs to restrain the arms may be advisable. Otherwise, restraints which are hampering to a child's normal activity would generally be contraindicated.

Precautions against spread of the disease to other little children are, on the other hand, of the utmost importance, and must be continued so long as any vaginal discharge is present. If the child is admitted to a hospital, isolation precautions similar to those used in the care of any other communicable disease should be maintained. When gonorrheal vaginitis occurs in an institution for children, the only satisfactory method of preventing spread of the disease that has so far been found is to place the infected child in a foster home where there are no other little girls.

A more difficult problem arises when the disease occurs in a private home and the patient is one of several children. Here, again, the infected child—or if more feasible those not infected—should be placed in a foster home. Arrangements for care in the home of a relative can often be made with little difficulty when the patient is under estrin therapy, since with this treatment the time required for recovery is relatively short, frequently less than three weeks. Very strict precautions must be maintained in the home until such arrangements are completed. The child must have her own towels, wash cloths, soap, and wash basin, and these must be kept separate from those belonging to the rest of the family. Her diapers—even the older child should wear diapers—should be laundered separately and sterilized by boiling for fifteen to twenty minutes. The child should be supervised carefully when she goes to the toilet. She should, of course, sleep alone.

Because this disease does not appreciably diminish the child's energy and activity, it follows that in a busy household the mother will find it almost impossible to watch the children sufficiently to avoid spread of the infection to the other little girls in the family. It is for this reason that care in a foster home is emphasized.

When the disease occurs in an institution for children it is distressing to note that it frequently spreads in spite of the greatest vigilance. Furthermore, it is sometimes impossible to discover the source of infection. Because of this, although an outbreak of gonorrheal vaginitis in an institution is generally considered to be due to gross carelessness, we should not pass judgment too quickly.

One factor of definite value in preventing the spread of this disease in schools and kindergartens is the use of U-shaped toilet seat in all public toilets. If this could become the accepted style in the home as well, it would help considerably, for there is always danger of a little girl becoming infected if she slides off a contaminated seat of the common oval type.

In considering these various preventive measures, it becomes apparent that the underlying financial condition of the home or institution has an important bearing on the problem. Gonorrheal vaginitis, it is true, occurs among all classes, nevertheless it is more prevalent and spreads more rapidly among the underprivileged groups, forced as they are by poverty to live in poorly furnished and overcrowded homes. Institutions may be similarly handicapped. After all, there are no satisfactory substitutes for clean, well-equipped bath-rooms and adequate living quarters.

The difficulties met in devising and in carrying out preventive measures against gonorrheal vaginitis, as well as its stubbornness under most methods of treatment, make us appreciate all the more the importance of the treatment of this disease with estrin. We are particularly impressed with the rapid improvement of the patient and with the ease and safety with which the treatment is given.

The treatment is especially simple when the estrin is administered by means of vaginal suppositories. These suppositories, containing seventy-five or more rat units of estrin, are given once a day for a period of three to four weeks as ordered. Since the suppositories are made up with a base of gelatin, or glycerin and gelatin, they should be kept in the ice box, and then warmed slightly immediately before use. They must be inserted in the vagina just at bedtime. It has been found, too, that they stay in better if inserted blunt end first, rather than in the usual manner.

Estrin is sometimes given by hypodermic instead of in suppositories. When this method of administering estrin is followed, one ampoule of the medication is usually given two or three times a day, at convenient hours, for a period of two to eight weeks. There are no special precautions to be observed other than the aseptic technic necessary with any hypodermic injection.

During the course of treatment the nurse should note the effect of the medication by observing the amount of vaginal discharge and by testing the vaginal secretions for acidity. The change in the character of vaginal secretions from alkaline to acid may be determined by testing normal saline washings of the vagina with a color indicator. The indicator used should be one which tests acid to a finer degree than does litmus paper. The nurse should note, also, any enlargement of the breasts. If this occurs, it need not cause any alarm, as it is only a temporary condition, but it should be reported to the doctor.

The effect of the medication is checked further by frequent microscopic examination of vaginal smears, and occasionally by a similar examination of clippings of the vaginal mucosa. The nurse may take smears, or assist the doctor in taking them. The clippings, or biopsies, are done very simply. The only instruments needed are a small speculum and a miniature tonsil punch. These should, of course, be sterile. A jar of preservative solution should also be ready for the specimen. Because the operation is so slight and causes little pain, neither an anesthetic, special preparation of the patient, or after-care is necessary.

Since none of the treatment is at all difficult, hospital care is not essential. If the child remains at home, hypodermic injections of estrin should be given by a nurse, unless the mother can be trusted to give them properly. With the use of suppositories, home care presents few difficulties, for the mother can easily be taught this procedure and can carry it out with less supervision than is needed when the hypodermic method is followed. In order to be sure that the mother knows exactly what is to be done, the nurse should not only explain the procedure to her, but should watch her the first time she carries out the instructions. Otherwise, through misunderstanding on the mother's part, it may happen that the suppository is inserted in the rectum. If this does happen there will be no therapeutic result.

The nurse should instruct the mother about the general care of the child as well. The tension, so often present in the home, will be relieved considerably if the nurse explains that children acquire this disease innocently by contact with soiled articles or from contaminated toilet seats. This will not only ease the mother's mind concerning her child, but will also help to convince her of the necessity for precautions. She should be encouraged, too, with the excellent chance of rapid improvement under this method of treatment.

It is of interest to note that estrin therapy is to be recommended from the psychiatric point of view quite as much as from the medical, not only because it lessens the duration of the illness, but also because it makes frequent vaginal douches and instillations unnecessary. These points are especially

important when this disease occurs among children in the age group from two to six years, thus coinciding with a period when the sex impulses are normally heightened. During these years it is particularly desirable to avoid unnecessarily focusing the attention of the child upon the genital region. With vaginitis present a certain amount of attention can hardly be avoided, not only because essential treatments must be done, but because of the irritation caused by the infection itself. The sooner, however, this extra attention is discontinued the more normal the child's reactions will be. From this standpoint, there might be some advantage in the hypodermic method of treatment over the use of suppositories, but the pain caused by that method and the natural distaste of the mother for it, probably outweigh any advantages that it might otherwise have. The suppositories are so easily used that generally little notice is given by the child to their insertion. It is important that all of the special care should be given with as much calmness of manner, as well as manual skill, as is possible in order that excitement over the procedure and undue concentration upon it may be reduced to a minimum. An understanding and tactful nurse can do a great deal through her contact with the family, to ensure a more wholesome environment for the child, thus lessening the chance of later psychiatric difficulties arising from this experience.

Although the actual nursing care of a child who is being treated for gonorrheal vaginitis with estrin makes no heavy demands upon the nurse, it is most interesting, and brings her a sense of satisfaction, because the results are so encouraging for the child, for the parents, and for the social welfare of the community.

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BLOOD MATCHING FOR TRANSFUSION

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As soon as a patient is admitted with hæmoglobin below 40% Sahli, a blood transfusion is advised. We ask the patient's relative to bring husband, parents, brothers and sisters. These people are likely to be suitable being close blood relatives of the patient. If these relatives are not suitable donors, we advise them to bring either their own servants or others who are willing, distant relatives and friends for matching.

If a poor patient comes to the hospital, if she cannot find a donor, we will send for Municipality sweepers, and other coolies, sometimes porters from the station. When we test them, we give them two annas for testing them. If they are suitable, and if they give blood, we pay them Rs. 5 after the transfusion. If the parent's relative can afford to pay we get the money from them and pay the donors.

When we get the people for matching, we get everything ready on the table. That is we write all the names of the people in small chits, small tubes of two kinds, one for corpuscles and one for serum; blood matching solution, needle, pipettes. We keep sterile tubes for the patient's blood. We get in the donors one by one and take their blood and number it. For corpuscles we take blood red cell pipette and dilute 1 in 100 with the following fluid:—

Sodium chloride (pure)	...	...	0.85 gramme
Sodium citrate	...	...	1 "
Distilled water	...	...	100 c.c.

We prick the finger and take the blood matching 1:20 dilution, and about 1 c.c. of blood from the vein into another tube. We let it stand until the serum has separated well. If we wanted to do it urgently we can centrifuge the blood to separate the serum quickly. When the serum is ready we begin to match the blood.